The effects of Psychosomatic Factors in skin tissue: A literature review

LIMA, Anadhelly Cristina da Silva de [1], HORA, Daisy Cristina Borges da [2], SCATOLIN, Henrique Guilherme [3]

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Summary

The skin has, as its main function, the protection and defense of the exterior. Psychosomatic factors such as stress, anxiety and depression influence and can trigger malfunctions in the cutaneous tissue, such as skin rashes, burning, tingling, numbness, sensitivity, rashes, spots, dermatitis and eczema. These disorders, in which physical symptoms-skin diseases-without physical plausible explanations are common called somatoform disorders. The present study aims, through literature review, verify the effects of psychosomatic factors in skin tissue. Research on how the psychological can affect the skin tissue are made for a long time, however, the question is, if really psychosomatic factors cause cutaneous tissue dysfunctions? What justifies the proposed theme. Results conclude that Yes, the psychosomatic factors affect the skin, influencing or causing skin diseases as psoriasis, vitiligo, Dermatitis, seborrhoeic Dermatitis, acne vulgaris, rosacea, Hyperhidrosis and hives. Aesthetics can assist in psychological treatment providing relaxation and well-being therapies as acupuncture, reflexology, massage therapy and aromatherapy.
Keywords: skin, Aesthetics, psychology.

1. Introduction

Indisputable the human being is considered to be a body that is in a constant process of adaptation. Since your birth, individuals are exposed to conviviality and social rules, i.e., what is moral, which help form your personality (spider, 2009).

Full of physical and psychological needs, such as in Maslow's pyramid in your show, the man has to fight for what you want and the demands are few (Saints; Iron; Alves, 2016). So, currently, in the world we live in, the individuals appear to be increasingly worried, stressed and anxious, living constantly with the fear and lost in their decisions.

Influenced by these feelings, our skin, known as lining fabric that covers the body, reflects everything we are and change according to the mood or the environment to which it is exposed. So, it's no surprise that she's the first to manifest malfunctions when the individual psychological disorders (HOFFMANN et al., 2005).

The skin tissue or skin as it is popularly called, is regarded as the largest organ in the human body, with the primary function of protection/defense and is structured in two layers – epidermis, DermIS, beyond them, the subcutaneous or screen-hypodermis, nails, hairs, glands sweat and Sebaceous also make up the integumentary system (PEYREFITTE et al., 1998).

The epidermis, not vascularized tissue, is the most superficial layer and is linked directly with the function of protecting the Middle body outside. This structure is composed of four sublayers-prickly, germination granulosa and cornea-and that's where the lesions may be seen (SPENCE, 1991).

The dermis, vascularized tissue, is responsible for nutrition and skin support (SPENCE, 1991).

The hypodermis, also called the subcutaneous tissue, has as its main function the body modeling and absorption against large impacts (SPENCE, 1991).

Other functions, in addition to the aforementioned, are regulatory term protection from sunlight, absorption and secretion of fluids and coating. The skin also exerts important sensory role, determined by feel, being responsible, too, for a great part of the vision that the individual has of you, i.e. your self-esteem (HARRIS, 2009).

As seen, beyond the physical feel skin may be affected by psychological factors and such skin diseases,
when caused by these factors, are psychosomatic or calls of somatoform disorders (ICD-10, 2000).

In these disorders, physical symptoms such as skin-disease without plausible explanation, are common and the individual usually become frustrated for not finding an accurate diagnosis (ICD-10, 2000); due to this fact, there are many procedures and unnecessary referrals that patients purport to do, looking for a cause, leading to unnecessary costs and exposure to other types of risk such as hospital disease (LAZARO; AVILLA, 2004).

Turns out, when the symptoms do not necessarily lead to a visible physical illness, the disorder is not recognized, being treated for inappropriate ways, that, by not presenting a result set, can aggravate and increase the suffering of the patient waiting for a conclusive response (LAZARO; AVILLA, 2004).

The individual expected many things and stressful life situations-how afraid I won't live up to expectations, the crises in the economy, difficulties at work, losses, estrangement, illness or death can be trigger factors. Constantly Somatization is regarded as exteriorization of "psychic pain", in the form of bodily complaints, in people who have no vocabulary to present your suffering otherwise (LAZARO; AVILLA, 2004).

What happens is that, behind the physical symptoms, psychological disorders may be involved, causing symptoms such as a rash, burning, tingling, numbness, sensitivity, rashes, spots, dermatitis and eczema, and, moreover, as research show, autoimmune diseases like Lupus Erythematosus and psoriasis (ICD-10, 2000).

The holistic vision teaches that mind-body-environment-social are interrelated, and thus would be fact that everything that affects the mind affects the body suffer from fetal alcohol; Therefore, psychosomatic factors cause, in addition to psychological harm, physical dysfunctions. Some of these we can see in the skin tissue damage as I have seen (EDWARDS; GALVAN, 2006).

Research on the psicossomatização of skin tissue are made for a long time. The questions will be really psychosomatic disorders cause the skin tissue? And, how the aesthetics, the foundations of holistic therapy, can help to prevent and combat such malfunctions?

2. Methodology

After approval by the Ethics Committee and scientific merit of UNIARARAS under the 070/2017 Protocol, a bibliographical research in Scielo, Pubmed and indexers in the institution's library and later analysis of the scientific articles and Monographs published in the period of 1984 to 2017.
3. Literature review

When we talk about the effects of psychosomatic factors in skin tissue must, in principle, begin by understanding what is this structure itself: the skin.

The skin is seen as the first sensory system, the tact, to be formed when we're still embryos, that is, no other organ is formed yet, but she's there, in your complex structure (Lion, 2016).

The skin is the largest organ in the human body, which, on average, 16% of body weight. It is composed of two interdependent structures to each other: Epidermis and DermIS (HARRIS, 2009).

Considered as a barrier, your primary function is to protect the internal organs of external agents that come in contact with her. Other functions that fit this fabric is the regulatory term, selective permeation, absorption and secretion of compounds from the normal metabolism of the individual participating in the maintenance of homeostasis the body's General (HARRIS, 2009).

The epidermis, the skin's primary structure, is not vascularized tissue, composed of several layers of keratinocytes, melanocytes, cells of Langherans and Merkel. For your time, the epithelium is divided into two sides: superficial, composed of pilosebáceos and microdepressionaria network holes; and deep, where, through the dermal papillae, epidermis and DermIS get together forming the junction dermoepidérmica (SPENCE, 1991).

In addition to his two faces, the epidermis is regarded as a multiestratificado epithelium, that is, divided into four other sublayers that will differentiate itself by the format of the cell bodies found respectively in each and your depth in tissue ( SPENCE, 1991).

The cells of the epidermis are in constant renewal. Produced by basal layer cells migrate to the upper layers, replacing those that were descamadas. These cells undergo changes in chemical composition and your on your way, becoming hexagonal, as they reaching the surface until they become anucleated and if esfoliarem, already dead. This process takes around 14 days for younger people and around 37 days for people older than 50 years (LEONARDI, 2004).

Under the epidermis found the DermIS – loose connective tissue – richly vascularized consisting of fixed cells, such as fibroblasts and other cells that helped in immunity. Its main function is to nurture and sustain the epidermis. Other functions of this connective tissue are participating in the immune process as a second barrier, serve as support against injury by tissue trauma and participate in the homeostasis of the organism (PEYREFITE; MARTINI; CHIVOT, 1998).
Is in the DermIS that found the skin and the attachments, apocrine sweat gland and eccrine, Sebaceous Gland, muscle pilomotor and nails (PEYREFITE; MARTINI; CHIVOT, 1998).

All these structures found in connective tissue are collagen, to a lesser or greater amount. Collagen is a protein produced by fibroblasts, the main residents of the DermIS cells (GOMES; DAMASIO, 2013) and constitute the dermal tissue and its annexes is part of the synthesis of bone, cartilage and tendons. The fibroblasts are responsible, too, for the preparation of fibres and a gelatinous substance called amorphous element, in which the dermal components are inserted (PEYREFITE; MARTINI; CHIVOT, 1998).

The DermIS is divided into two distinct faces. The superficial face is formed by fibers, blood capillaries and lymph, nerve endings and the dermal papillae, responsible for the nutritional changes with the deep layers of the epidermis (GOMES; DAMASIO, 2013). The deeper face is regarded as the reticular DermIS or dense connective tissue consisting of thick bundles of fibres intercruzados, responsible for the support and elasticity of the skin (PEYREFITE; MARTINI; CHIVOT, 1998).

Under the DermIS is the hypodermis, also called adipose connective tissue or subcutaneous screen. This structure is formed by the adipose tissue and its cells, the adipocytes-rounded cells with nucleus and its main metabolic function, being so involved with the transformation of energy. Other functions of the hypodermis are the shape and body modeling that will differentiate men from women, mechanical barrier against great friction and balance of body temperature. As well as the dermis, hypodermis is a highly vascularized tissue (SA, 1998).

The skin is the largest organ of the body has different sensory receptors, synthesizing vitamin D, detects pathological conditions and can also be related to excretion of salts (GOBBO, 2010); to react functionally it is necessary that their structures are preserved and in conditions considered normal. When this complex structure is difficulties some injuries and dysfunctions may appear. (Cheap, 1995).

Skin lesions can be visualized in epidermal level and may have been caused by poor circulation, inflammation, metabolic adverse changes, tissue degeneration and unregulated increase of the volume of the cells (GOMES; DAMASIO, 2013).

Considered by medicine as the "mirror of the organism, skin disorders caused by skin diseases expressed, as well as reflection of problems in different organs. Examples are the heart disorders in which there is a difficulty on peripheral circulation that will influence the color of the skin, increased skin moisture and irritation or knobbed, caused by TB disease that affects the lungs, can, also, and have your elasticity, impaired by conditions such as acromegaly, myxedema and Cushing Syndrome (TEIXEIRA, 1984).

Due to the fact express mixed reactions and for being in contact with the external environment, the skin is
also considered an organ of communication. More than externalize physical changes, the skin tissue is influenced to express emotional factors such as stress, anxiety and depression (PEYREFITE; MARTINI; CHIVOT, 1998).

In diseases of the skin, known as dermatoses, arguably the emotional factors are strongly present, influencing also in the mental state of the individual. In this sense, psychological factors can exacerbate or trigger skin diseases. So we should be talking about two basic subgroups related to skin diseases and psychosomatic psychogenic dermatoses (RIVITTI; Sampaio, 1998).

In psychogenic dermatoses, the symptom of skin disease is one of the manifestations, and is considered the initial or the most evident symptom. All have important role dermatoses influencer emotional factors such as stress, anxiety and depression, however, in some skin diseases, they are responsible for the trigger and your clinical evolution, visas, as well as skin diseases Psychosomatic (RIVITTI; Sampaio, 1998).

Psychosomatic diseases are manifestations, in the body of psychological origin, by resolution of emotional conflicts, when the mind will produce defence mechanisms in order to resolve the difficulties or the threat to the body, hence the diseases (SON; BURD, 2010).

The term psychosomatic was first used in 1808, by Heinroth, German psychiatrist, after already be centuries of studies on the subject, signaling that the somatic diseases arose of etiological factors of mental aspects. Currently, this concept evolved and now speaks not only of mental aspects, but rather a body is immersed in a mind-body-society, becoming a history in your entirety (SILVA; MÜLLER, 2007).

Thus, since the first half of the 20th century, psychosomatic studies indicate that happens the Somatization of physical and emotional parts. It occurs by an interference of the mind in the body, where there is interaction between emotional distress and disease on that body. An example of this is the peptic ulcer (STRONG; TANDEL; BAPTISTA, 2010).

From the DSM-III, in late 1980, the term "Somatization" was assigned to mental disorders, including the somatoform disorders and Dissociative, whose main complaint unexplained symptoms, with great social commitment, in which the individual has trouble understanding your relationship with the emotional distress (MAGELLAN, 2013).

As the historic breakthrough, there was the transformation of the models of health. Currently, it is known that any disease, to a lesser or greater degree, is also determined by psychological and social aspects involved in the Constitution of the subject (RODRIGUES; FRANCE, 2010).

Currently, the World Health Organization (who) defines that being healthy is having physical, mental and
social quality, and not necessarily just the absence of disease. With this definition, the field of psychosomatic illnesses won space, positioning itself between the practice of Medicine (SILVA; MÜLLER, 2007).

The somatoform disorders or somatic disorders are characterized by physical symptoms where fisiopatologias were not found or any anomaly. Arguments point out that such symptoms are linked to emotional conflicts. The mind, in an attempt to decrease tension intrapsíquica caused by internal conflicts and sufferings, converts them into somatic complaints (REINERT, 2016).

Reinert et al. (2016) conducted a survey of 1,200 attendances in the Psychiatric Hospital in São Luís, Maranhão, in order to identify the symptoms of somatoform disorders. Results of these researches show that symptoms appear most commonly in women under 30 years old, with at least four pain symptoms, among them two gastrointestinal symptoms, a sexual and other pseudoneurológico, none of them explained by physical exams. These patients have difficulties in such cases is usually carried out with the assistance of an escort for the sick. Such patients are usually framed in patient groups problems or multiqueixosos, for his numerous complaints.

Currently, in psychosomatic study the interactions between the biological, psychological, neurological and endocrine system, trying to understand these internal and external agents which cause physical diseases when the psychological suffering (LIMA; ASIS, 2017).

Current research seeking to understand the junction between the psychological factors and dermatological psychopathology, in the sense that it could alter the physiology of normal skin tissue resistance and, thus, leaving them exposed to physical damage that would lead to inflammatory processes in the skin. Observed this, the conclusion you can reach is that factors considered as stressful to the body can be a cause of cutaneous diseases (CONSTANTINI; CASTRO, 2013).

The area of psychoneuroimmunology argues that stress can be divided into three phases: (1) in estressora the situation the individual reacts to defend himself; (2) in estressora situation the individual faces, resisting, seeking internal homeostasis; (3) in estressora situation and not having to resolve it, the exhausted body, develops in more genetically predisposed organ pathology (LIMA; ASIS, 2017).

Lipp and Guevara (1994) argue that there is a fourth phase in the process of stress, as period of near exhaustion, at which point, the individual can no longer adapt and not resist agent stressor; subsiding tensions, diseases begin to emerge, to a lesser extent, to the exhaust phase. This phase would come between the second and the third, entitled respectively in 1-alert; 2-resistance; 3-near exhaustion, proposed by ISSL, and 4-exhaust (CHOWDHURY et al. 2017).
Somatic diseases come from exactly, a situation in which the individual attempts to combat, but ends up losing the internal homeostasis and, exhausted, the body develops a physical ailment. Skin diseases in which we can observe the fact psychosomatic in so-called psicodermatoses are Dermatitis, psoriasis, vitiligo, seborrhoeic Dermatitis, acne vulgaris, rosacea, Hyperhidrosis and hives (LIMA; ASIS, 2017).

According to Constantini and Castro (2013), data show that 70% of cases of atopic dermatitis were raised and exacerbated by stressful situations. So are dermatoses, directly influenced by psychological factors, which can be divided into four groups:

- skin diseases that have secondary psychiatric factors, reducing the self-esteem and may lead the individual to depression, being the most common manifestations of this group the vitiligo, alopecia areata and albinism;
- skin diseases that the psychological factors trigger or exacerbate your appearance are called psicodermatoses and manifestations of that group are commonly acne, atopic dermatitis, psoriasis, eczema and hives;
- abrasions on the skin, caused by individuals, because it factors in psychiatric signs of mental disorders that typically are obsessive-compulsive, delusional disorders, and somatoform disorders;
- skin injuries caused by the use of psychotropic drugs.

Anatomically and physiologically, front of the stressors agents hypothalamus orders the pituitary gland to produce the corticotropin-releasing hormone, which acts by stimulating the release of the hormone adrenocorticotrófica, which in your time, enables the nodes of the sympathetic nervous system which will act on the adrenal glands releasing epinephrine and norepinephrine, and so, consequently, unleashing reactions in the body equivalent to when he needs to escape. This will cause increased heart rate and breathing (SANTANA; LEE; SANTOS, 2017).

Stress, as one of the main psychological factors generates physical and psychological symptoms or a combination of both. The physical symptoms that can occur are diarrhea, nausea, tension, muscle aches, abdominal and head, appetite disorders and skin care, hair loss, strong connection with steep stress States. Already the psychological symptoms include excessive fear, aggression, nightmares, anxiety, anxiety and interpersonal relationships affected (SANTANA; LEE; SANTOS, 2017).

The stress was first observed in patients with different diseases, but with common symptoms, by the Austrian doctor Hans Selye. After that, he gave it the name of "General adaptation syndrome" that, with the passage of time the doctor called it stress. (ANSCHAU; STEIN, 2016).

The organism maintains homeostasis of the body that can be changed due to psychic reactions such as stress that manifests physiologically. Not only negative events can alter that balance such as irritability, fear, confusion, excitement, hunger, pain, intense euphoria, but also positive situations that generate
anxiety can modify it (KLEINHANS, 2012).

Considered as a reaction of the organism, the stress has psychic, physiological and biochemical components, taken as a force and tension, making a sum of the two. The problem occurs when this constant stress situation extends and the individual can no longer enjoy this stimulus as something positive. *When it becomes pathological, stress can cause anxiety, irritability, physical instability and tension* (ANSCHAU; STEIN, 2016).

Anxiety is considered as a psychological factor that is part of human behaviour in the face of threats and dangers (Saints; PERSON; 2016). Being accepted as a normal reaction and regarded as an important biological function, it works as an alarm system when the body feels in danger in the environment in which it is (Saints; PERSON; 2016).

Regarded as a form of stress, this psychological aspect can be felt, not only through the emotional, but also physically and change to the way the individual sees inserted in society. It can arise from positive and negative events in the life of the individual, typically when facing difficult situations in everyday life. Despite being considered by several authors as healthy for the personal growth of the individual, she is described as a State of harrowing humor that leaves the being restless and apprehensive about the future (Saints; PERSON; 2016).

The anxiety begins to be considered as a pathology when your interference cause poorer quality of life, emotional distress and fall on the performance of the individual to perform his routine functions (Saints; PERSON; 2016).

Anxiety disorder is a condition that goes beyond the normal bounds of anxiety, causing physical and emotional symptoms such as sweating, tension, heart palpitation and negative thoughts considered as dangerous by the anxious and feel momentary, this somatic manifestations generates and physiological disorder such as dyspnea, tachycardia, vasoconstriction or swelling, muscle tension, paresthesia, tremor, sweating, dizziness, among other disorders (Saints; PERSON; 2016).

High levels of stress and anxiety are linked to depression frames. Initially the depression was seen from the frame of melancholy, being, at that time, considered as a symptom of that condition, being described by Esquirol as a framework where the individual has negative and fixed ideas, which make you lose the meaning of life and experience a chilling and sad. At this point in history, there was no difference between the State of melancholy and depression to psychiatrists and this would follow until 1980 (PARKER; AZEVEDO, 2016).

According to the ICD-10, the depression is framed in affective disorders, showing change in mood or feel...
of the individual, modifying the General activities of the subject (World Health Organization, 2000); being considered as a pathology that may have their causes in biological factors, in which the lack of some important neurochemicals such as serotonin, norepinephrine and dopamine, involved with the feeling of happiness, would change the mood of an individual. In addition, the limbic system, responsible for the sense of well-being, is too tied to feelings of angustia, malaise and negativity, when their activities decline (PARACHA; AZEVEDO, 2016).

Currently the depression is seen as a multifactorial pathology, and can be caused by several factors or by merging them (PARKER; AZEVEDO, 2016).

The individual feel is a very personal thing, what is stressful for one person may not be to another. So, for the treatment of individuals must use holistic vision, which seeks to view the be as a one-time thing, but with different feelings within yourself and so look for strategies that help it to combat these factors, or live with them (LIMA; ASIS, 2017).

Some treatments may be suggested for these individuals to be assisted against these psychological factors, which leave them calmer, with feeling of well-being and balance. Some of these treatments are acupuncture, reflexology, massage therapy and aromatherapy (SANTANA; LEE; SANTOS, 2017).

### 3.1 Acupuncture

Acupuncture is a treatment done through needles that are inserted into points engines that enable electric potential by stimulating the nerve endings, assisting in the control of stress and anxiety (SANTANA; LEE; SANTOS, 2017). Through the nervous stimulation by needles, the limbic systems and hypothalamic are enabled, beyond them, the grey matter and Genesis Reticularis. So, this interaction with the nervous system, helps against anxiety, fear, panic and stress (SANTANA; LEE; SANTOS, 2017).

### 3.2 foot reflexology

The foot reflexology, a technique that consists of specific reflex points of the feet tighten that map the entire body, is intended to balance and restore health, assisting also in the treatment of stress, anxiety and depression. (SANTANA; LEE; SANTOS, 2017). When these points are tight, happen events that reduce the tension in the entire body, causing a feeling of well-being (SANTANA; LEE; SANTOS, 2017).

### 3.3 massage therapy and aromatherapy

The massage therapy may be indicated for stress, anxiety and depression, being used as prevention and treatments of these diseases by assisting in reducing fatigue, gastrointestinal problems, insomnia,
headache and infectious diseases (SEUBERT; VERONESE, 2008). The touch areas stiffened provides relief by decreasing the physical and mental fatigue, the massage therapy helps in relieving stress, anxiety and depression. (SANTANA; LEE; SANTOS, 2017).

Massoterapia follows the Foundation to treat human beings fully, whereas spirit-mind-body-environment, influencing and assisting the individual who receives the if autoconheced, taking consciousness itself, thus resulting in a moment of reflection and assisting the responses contrary to the nervousness, stress and anxiety. (BRAUNSTEIN; BARRIE; PIVETTA, 2011).

The benefit of relaxation is treated as the main reason by which massage is accepted and do so successfully. Through relaxation important functions for the organism are extended, thereby improving blood flow to muscles and joints, nourishing and toning them, stimulating the nervous system, which responds with a sense of well-being in General. With slight movements to massage therapy can also reduce swelling (CASSAR, 1998).

Patients who make use of this therapy feature less anxiety and pain, controlling your own more treatment (ALMEIDA; DUARTE, 2000). In addition, massage therapy results in the improvement of some variables such as anger, physical and emotional discomfort, emotional well-being and sleeping patterns (ADAMS et al., 2015).

Along with the massage you can use essential oils to awaken, through smell, good feeling. Through the limbic system stimuli, there are components that are associated in various ways with the emotion, which is responsible for feelings, memories, impulses are triggered by substances that essential oils have in leading to feel and experience various reactions, acting in several ways in the body, particularly the feeling of pleasure, pain, anger, fear and sadness. (2016).

Aromatherapy has positive effects for the pursuit of balance, achieving great effects on the emotions that are connected with the herbs and essential oils, offering therapeutic care to the person as a whole (2016).

**Final considerations**

Returning to the problem of this study, it is concluded that currently there is no question that psychological factors affect the skin tissue. The human being, as the historic breakthrough, ceases to be increasingly considered an individualized system and more than that, in addition to the Treaty their complaints.

We now know, thanks to the holistic view, that man is an integral and it should be seen that way, mind-body-environment-society, in which when one suffers, the others also suffer from fetal alcohol, indicating,
an interconnected system.

Mentally, we are involved with feelings and emotions, and many of which occur as we live on the environment and on society. Our own personality is formed by the way we see the world. Some emotions such as stress and anxiety when they become exacerbated, diseases that can lead to depression. Feelings like this influence or trigger skin diseases that are explained by science, thanks to discoveries made by the areas of psicodermatologia, Endocrinology, Neurology, psychology and Psychiatry.

Aesthetics, while profession, can aid in the treatment of psychosomatic illnesses by means of alternative therapies such as massage, aromatherapy, reflexology and acupuncture. In addition, working with a multidisciplinary team, is necessary and indispensable to the psychological, which will aid in the treatment of stress, anxiety and depression. The consequences on the skin caused by these factors, it is necessary to the accompaniment of a dermatologist.

**Bibliographical references**


LION, C. The Amazonian landscape, between skin, body and environment. *X Symposium languages and identities in Amazon's South-Western viii coloquio internacional "amazonias, aficas and


Lima, i. d. t. g. effects of massage therapy and aromatherapy: literature review. 2016


SANTOS, j. o.; PERSON, V. S. A. The perception of teachers facing the children's anxiety: a sight psychopedagogical. 2016. 29 f. TCC (Undergraduate) Bachelor's degree course in educational psychology, Federal University of Paraíba-UFPB, Paraíba, 2016.


[1] Student of the course of Bachelor of Aesthetics, Hermínio Ometto (FHO-UNIARARAS).

[2] PhD in Immunology from the University of São Paulo (USP), 2003; Master's degree in immunology from USP (1999). Specialist in public health (health surveillance) Faculdade de Saúde Pública da Universidade de São Paulo (1994) and in Mycology at Instituto Adolfo Lutz (1993). Degree in Biomedicine at the University of Mogi das Cruzes (1990). He is currently Professor of Fundação Hermínio Ometto (FHO) – UNIARARAS. Has experience in the development of research protocols with animals of experimentation and laboratory techniques. Acts on the following subjects: human Immunology, microbiology and parasitology.

[3] Has postdoctoral in clinical psychology from the Pontifical Catholic University of São Paulo (PUC-SP); Master's degree (2007) and doctorate (2014) in Psychology (clinical psychology) at PUC-SP. Have Bachelor's degree and Licentiate in psychology from Methodist University of Piracicaba (2003). Has been operating for 14 years as a psychotherapist and psychoanalytic approach for 10 years as a consultant in the area of employability. Currently, performs the function of a clinical psychologist with psychoanalytic and organizational focus. Is accredited by the analyst FESPSP (Foundation School of political sociology of the State of São Paulo). Was also accredited consultant to the Secretary of public management in the State of São Paulo (Fundap) for 08 years, providing consulting services in the area of education and...
health. Acts as a teacher, at the Centro Universitário horista Hermínio Ometto, in Araras (São Paulo), as well as coordinates the lato sensu postgraduate course in Organizational and work Psychology. Has six books of psychoanalysis released in USA, twenty-six international articles, three books of psychoanalysis published in Brazil, seventeen national articles published, twenty-seven published works in countries of Latin America (Argentina, Uruguay, Peru and Guatemala), three works in Spain and 84 abstracts published in national and international conferences.