

Yogic management for Chronic Lower Backache with Stress

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Abstract

Lower backache is a major clinical and social health problem. Asanas and Pranayama harmonize the physical and mental systems and make the body healthy and smooth by triggering the "relaxation response" in the neuroendocrine system. These include a low metabolism, normal breathing, stable blood pressure, low muscle tension, normal heart rate, and slow brain wave patterns. Starting with the physical body, yoga ultimately affects all aspects of a person such as mental, emotional, intellectual, and spiritual. Chronic pain is multi-dimensional, at the physical position itself, beyond the nociceptive pathway, there's a hyperarousal state of the factors of the nervous system, which negatively influences the strain factor of the muscles, patterns of breathing, energy levels, mindset, all of which complicate the distress and affect the quality of life of the individual or family.

Yoga has been the subject of research in the past decades for therapeutic purposes for modern epidemic conditions like psychological stress, joint pain, obesity, diabetes, hypertension, coronary heart disorder, and chronic obstructive pulmonary complaint. Individual studies report beneficial effects of yoga in each of the conditions, indicating that yoga can be used as a non-pharmacological therapy or as a complement to pharmacological therapy to treat these conditions. However, these studies have only used yoga asanas, pranayama, and short periods of meditation for therapeutic purposes. Their deep practice leads to self-realization, which is the primary objective of yoga, and provides a healthy lifestyle by destroying all disorders. This is in contrast to modern civilization's purely economic and material developmental aim, which has brought social unrest and ecological annihilation.

Key Word: Low Back Pain, nociceptive, Yoga, Asana, Pranic healing and Meditation.

Conflict of interest- None

Introduction

Looking from the side of a human body, however, there are three curvatures, an S curve with an additional C fused at the bottom of S. These curves give the spine increased flexibility and better shock absorbing capacity while retaining appropriate stiffness. Next to the brain, the spinal cord is the most important structure in the human body for maintaining all postural equilibrium and communication. The spine consists of seven cervical, twelve thoracic, five lumbar, five fused sacral, and three to four fused coccygeal vertebrae viewed in the frontal plane the spine is straight and symmetrical. The intravertebral disc is a multifunctional element subjected to many types of loads. Short-duration loads such as during weight lifting can cause irreparable damage to the discs.^[9]

The International Association for Study of Pain defines pain as, a subjective unpleasant

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sensory, emotional experience due to an actual or potential injury or described in terms of such injury. It acknowledges the mind-body aspects of the experience by qualifying it as subjective, unpleasant, sensory, and emotional. The experience occurs first in our consciousness and then reflects on the physiological and behavioral planes. Health professionals can effectively use this relationship knowledge to understand and care for patients with chronic pain. Chronic pain is often described in terms of total pain, with physical, emotional, social, and spiritual components. The discussion below is to reiterate the contribution of physical and non-physical aspects to the perpetuation of chronic pain.

In current there have been many studies concerning stress. Stress has a great influence on diseases and medical care. For example, one study reports that optimism enhances the immune status and that doctors should talk to patients positively. According to other studies patient stress, depression, or hostility reduces pharmacological treatment effects, higher depression and lower social participation increases mortality of cardiac diseases, and stress exists in patients with disc herniation. Patients who do not complain about pain at home can complain of severe pain at the hospital.

Research shows that men are more likely to get stressed or depressed due to day-to-day challenges and demanding obligations. When practicing yoga, the relaxation and tensing of muscles together with the mindful awareness of the physical sensations help you relax. Yoga relaxes your mind and creates a calmness, you cannot achieve this with other workout programs. According to research studies, 8 weeks of yoga practice fights insomnia and improves the quality of sleep. Thus, in addition to training your body and achieving flexibility, yoga trains your mind to work from reality.^[1]

The mechanism of common backache

The most common site of backache is the lower back, followed by the neck and the region between the Lumber area. This pain arises when the muscles surrounding and supporting the spinal column are held rigidly and uncomfortably contracted over a long period. When this goes on day after day, the muscles gradually go into a state of tight painful spasm which becomes semi-permanent, as fibroblasts infiltrate the troublesome region, laying down fibrous tissues. These fibrotic areas can be readily felt as deep hardened bands and nodules within the tender back muscles.

Chronic backache tends to be worse at the day's end and is relieved by massage, yogic practices, pranic healing, heat, relaxation, and bed rest. It responds readily and permanently to a program of yoga asana and relaxation aimed at increasing the functional capacity of the weak muscles.^[8]

Multidimensionality of Chronic Pain

Chronic pain is no longer a symptom. Several chemical, anatomical, pathophysiological, and genetic alterations in the neural pathways lead to persisting patterns of pain. It takes characteristics of a disease that needs specific management.

Physical:

There is central and peripheral sensitization in the nervous system with neuro-chemical

and neuro-anatomical components that eventually results in hyperexcitability, recruitment, and disinhibition of the pathways, which amplifies and perpetuates chronic pain. Besides the actual nociceptive initiators, there are other strong neuro-endocrine-immunologic components to chronic pain perceptions. There is sustained deep muscle tension characterized by repetitive static loads to the muscles and psychological stress, especially of the postural groups of muscles.

Emotional:

Chronic pain decreases function and causes anxiety and depression. It affects sleep, energy reserve, and appetite adversely. High scores on a psychosocial screening and emotional distress during the acute episode were also significantly associated with non-recovery and persistence of pain.

Social:

Interpersonal relations, which are a crucial part of social interactions for all human beings, are often adversely influenced by chronic pain. With constant unremitting pain, the sufferer feels a loss of control over the situation loses self-confidence, and withdraws. Some may become irritable, hostile, and aggressive. People who are close to the ill person could react with over protectivity, avoidance, guilt, or resentment. The loss of role, the fear of dependency, and future sufferings continuously perturb the chronic pain patient. There is a sense of isolation and loneliness.^[1]

Scientific Review: Mechanical Back Pain and Psychological Stress

Several studies point to the role of a sedentary lifestyle that includes mechanical factors such as prolonged wrong postures leading to wasting and weakness of postural muscles and chronic muscle spasms due to psychological stress in the etiology of CLBP. Psychosocial aspects of work may play an important role in the perpetuation of back pain, even among patients with disc herniation. Found a positive correlation between scores on anxiety, depression and pain, and functional disability in patients with lumbar disc herniation.^[3]

According to Melzack and Wall, pain perception is substantially regulated by a gate-controlling mechanism localized in the dorsal root entry zone of the spinal cord. This gate mechanism is influenced by many factors including brain centers. The intensity of pain is modulated even before entering the brain. Another powerful modulating mechanism operates at the level of brain centers. The secretion of endogenous morphine-like substances is probably one of the most important mechanisms. This indicates the somatic origin of pain.^[7]

Psychological stress is characterized by emotional responses of fear and anxiety that elicit physiological responses. These stress responses are mediated by the neuroendocrine and sympathetic nervous systems and are important determinants of health. Psychological stress can also influence how an individual perceives pain.^[7]

The connection between psychosocial stress and musculoskeletal disorders^[20, 21] has been explained in studies showing that mental stress induces a significant increase in muscle tension in the trapezius muscle. Several models have been proposed to understand the mechanisms linking low sustained muscle tension to musculoskeletal disorders. One out of three patients operated on for herniated lumbar disc in their area presented with failed disc surgery with

persistent pain, fatigue, exhaustion, and also emotional problems that interfered with their job, and only 2 out of three patients, who were active before the operation, returned to work.^[4]

Chronic low back pain in women seems to be associated with the lowest quality of life among many types of non-malignant chronic pains as was observed in a survey carried out in a multidisciplinary pain.^[5]

A study on patients who were taking antidepressant medications but who were only in partial remission showed significant reductions in depression, anger, anxiety, and neurotic symptoms. The study supports the potential of yoga as a complementary treatment for depression.^{[6][2]}

A strong correlation between psychological stress and lower backache is implicated in some studies where the term stress myocytes is suggested. The term stress refers to the psychic component which is the precipitative cause of lower backache. The muscle pathology may have secondary inflammatory changes. It may be a local disorder of the contractile state of a muscle leading to muscle spasms^[10].

Yoga: Asana and Pranayama

Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow.

Swami Satyananda Saraswati^[19]

The first depictions of yogic practices were found on the seals and sculptures of the ancient civilization of the Indus Valley which existed around 3000 B.C. In one of the seals, there is a prototype of the images of the God Shiva, said to be the greatest yogi (maha yogi). He is seated in a yogic posture surrounded by wild animals and one of the very big temples of Pashupatinath is near Kathmandu in Nepal. The inhabitants of the Indus Valley also worshipped the mother goddess, animals, trees, water, etc.^[13] Yoga is the greatest philosophy of India. It deals with the mysteries of life as well as of the universe. It deals especially with those aspects of life and the universe that are beyond the comprehension of normal human intellect. Its doctrines are based on spiritual experiences, and so they appeal more to intuitive discrimination rather than to intellectual understanding.^[14]

Asanas involve slow and steady movements and muscle stretching while maintaining a posture. The asana thus falls in the category of isometrics and muscle relaxation achieved due to stretch. In the use of asanas as a therapeutic tool, slow stretch is a very important method for achieving muscle relaxation and improved motor function. Relaxation of a muscle indicated by lowered discharges from the muscle fibers is obtained by stretching the muscle very slowly and maintaining the stretch over prolonged periods.^[11]

Physical and mental therapy is one of yoga's most important achievements. What makes it so powerful and effective is the fact that it works on the holistic principles of harmony and unification. Yoga has succeeded as an alternative form of therapy for diseases. According to medical scientists, yoga therapy is successful because of the balance created in the nervous and endocrine systems which directly influences all the other systems and organs of the body.^[15]

Asana: Prior to everything, asana is spoken of as the first part of hatha yoga. Having done asana,

one attains steadiness of body and mind, freedom from disease, and a lightness of the limbs.

Hatha Yoga Pradipika (1:17)

The practice of postures to make the body fit for long sittings for meditation. It is achieved by relaxing attention or loosening effort to sit in a particular posture and allowing attention to merge with the infinite.^[2]

Asana promotes physical health and longevity through the followings:

- Maintaining the health and integrity of the joint and spine.
- Managing the energetic system of the body.
- Relaxing, strengthening, stretching, and energizing the body.
- Toning and nourishing every bodily system: glandular, nervous, cardiovascular, and digestive.
- Cleansing and nourishing the body on every level.
- Bringing body problems to light and often correcting them.
- Providing a system of energy patterns that, when fitted onto the body, can prescriptively change the body's existing energy flow. ^[22]

Some special Asanas for Lower backache:

Makarasana:

According to Gheranda Samhita: One should lie on the ground facing downwards, the chest touching the earth, the two legs being stretched, and catch the head with the two arms. This pose is called Makarasana. It increases the heat of the body.^[16]

B. K. S Iyengar describes Makarasana, lie on the ground face down, the chest touching the earth and both legs stretched out, catching the head with the arms. This is the Crocodile Posture which increases bodily heat. It is a variation of Shalabhasana.^[17]



Dhirendra Brahmachari explains Makarasana as lying on the ground facing downward and with the arms stretched forward.^[18]

Marjari Asana: Physical - on the flexion of the spine from top to bottom, and the breath synchronized with the movement. This asana improves the flexibility of the neck, shoulders, and spine.^[1, 23]



Shalabhasana: Physical - on the lower back, abdomen, and heart, and on synchronizing the breath with the movement. Shalabhasana strengthens the lower back and pelvic organs and provides relief from backache, mild sciatica, and slipped discs as long as the condition is not serious. It tones and balances the functioning of the liver, stomach, bowels, and other abdominal organs, and stimulates the appetite.^[1]



Pranayama: Thus being established in asana and having control of the body, taking a balanced diet; pranayamas should be practiced according to the instructions of the guru.

Hatha Yoga Pradipika (2:1)

Practice breath control and breathing techniques with awareness, making breathing slow and subtle. Exhalation is prolonged. The pause between inhalation and exhalation is eliminated. It helps in the control of the mind and concentration.^[2]

In the pranayama practices, four important aspects of breathing are utilized. These are:

1. Pooraka or inhalation
2. Rechaka or exhalation
3. Antar kumbhaka or internal breath retention
4. Bahir kumbhaka or external breath retention.

Nadi Shodhana Pranayam: Minor blockages are removed and the flow of breath in both nostrils becomes more balanced. Breathing through the left nostril tends to activate the right brain hemisphere; breathing through the right nostril activates the left hemisphere. As the count is extended, the breath slows down. The respiration becomes more efficient because the airflow is

smoother and less turbulent. This ratio helps people with respiratory problems such as asthma, emphysema, and bronchitis.^[1]

Yoga Program

Yoga's popularity has grown tremendously in the past several years. National Health Interview Survey data conducted by the Centers for Disease Control and Prevention show increased usage of complementary and alternative medicine treatments. In 2007, yoga was the 7th most



commonly used therapy. These therapies are used mostly to treat musculoskeletal conditions, in particular back pain and to a lesser degree neck pain.^[12]

Yoga program to eliminate simple backache These asanas should be practiced for 15 to 20 minutes each morning without fail, followed by 10 to 15 minutes of Shavasana. This program is specifically designed to increase the functional efficiency of the various muscle groups responsible for back pain and should be learned under expert guidance. Reassess the stage of your back and general health after one month.

1. For lower back muscles: Ardha Shalabhasana, Shalabhasana, Ushtrasana, Marjari Asana, Makarasana, Bhujangasana.
2. For shoulders and upper back muscles: Dwikonasana, Sarpasana, Bhujangasana, Majari-asana, and Kandharasana.
3. Relaxation in Shavasana or advasana: with visualization of tight, congested back muscles relaxing, letting go of tension, and flushing the area with fresh blood. Pranic energy is visualized flowing into the back muscles in conjunction with the breath.^[8]
4. Pranayama for backache and Stress: Nadi-Shodhana, Bhramari, Shitali, OM Chanting.

Conclusion

Yoga is the foremost science of self-realization and right living. It is described as that which sublimates and dissipates the turbulences within. Through various methodologies, it evokes a poise of the soul, enabling one to look at life in all its aspects evenly. The principles strive to bring balance and harmony to all aspects of existence. The human being is considered to experience every interaction through the physical, vital, emotional, intellectual, and spiritual perceptions simultaneously, with the physical sheath being the grossest and others progressively subtler; and the intellectual and spiritual perceptions being the subtlest. It also states that the ripples in the emotional sheath affect the grosser dimensions of vital energy flow and the physical body.^[19]

The culturing of the body and mind that happens through regular yoga inputs brings about an equanimity of perception, which makes conventional inputs including analgesics more effective in controlling the distress of chronic pain. Let us learn and utilize the components of this ageless science to evoke the inner resources of our patients suffering from chronic pain, and calm the multi-dimensional eddy currents of distress to improve the quality of life and achieve “freedom from pain”.^[19]

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