

Place of yoga in radiotherapy

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Abstract

Yoga is at a key point in ensuring health and happiness in today's world. In the literature, it is generally accepted that the use of yoga together with radiotherapy has physical and psychological benefits. In general, it is stated that it provides strengthening of muscles, reduction of stress, and it can be used to relieve ailments such as fatigue, pain and concentration difficulties in order to maintain the physical and psychological well-being of the person. Yoga practices should be practiced by healthcare professionals who have enough knowledge on the subject. Clinical studies are needed to have sufficient information about whether patients who will receive radiotherapy are eligible to attend yoga classes.

Introduction

Cancer: It is a disease that damages the physical, mental health and social aspects of the patients and creates negative effects on their lives. Complementary therapies and psychosocial approaches in addition to cancer treatments increase the effectiveness of the treatment. Psychosocial approaches; it includes medical treatment, coping with cancer and psychoeducation [1,2]. Complementary therapies, another method, are defined as the treatment used in addition to and complementing medical treatment. Complementary therapies are practices aimed at protecting body and mental health, allowing the individual to be at peace with himself and his family environment and to get to know himself better. Today, the desire of patients to participate in their own treatments, the high cost of the treatments, the desire of the patients to feel better in terms of psychology, the belief that the treatments applied are inadequate have brought to the fore complementary therapies. Complementary treatments; alternative medical systems (acupuncture, homeopathy, etc.), bio-based treatments (traditional treatments, non-vitamin/non-mineral products, etc.), manipulative and body-based treatments (massage, chiropractic care, etc.) and mind- body treatments (yoga, hypnosis, reiki, music, etc ...). Complementary therapies commonly used include natural non-vitamin / mineral products, acupuncture, and yoga. With the increase in public interest in complementary therapies, non-healthcare professionals and organizations have tried to meet the needs of the society [3-7].

In recent years, yoga, one of the complementary therapies, has begun to take its place in cancer treatments. Yoga is an ancient practice that started thousands of years ago in India. Yoga is the method of freeing the mind and providing the perfect harmony of the body, mind and soul. Today, it is used in many areas [6-12]. Recent studies in the literature indicate that yoga provides positive results in reducing complications when used in combination in patients with cancer [13-23]. In this review, the place and importance of yoga, which is one of the complementary therapies in cancer patients receiving radiotherapy, was discussed.

Description and history of yoga

Yoga is not a religion or belief, but a philosophical system and originates from Indian philosophy. The word yoga comes from the root of the word "yuc", which comes from the old Sanskrit language,

meaning "union or unity". It means the connection that a person establishes with the divine or the union of all the different aspects that make up the human being in a balanced way. Yoga is based on a combination of techniques that influence the body, mind and emotions and skillfully create an effect on the person. The mechanisms by which yoga provides physical and psychological developments in the body are not fully understood [6,7].

It is not known exactly when yoga started. Tablets with figures of people doing yoga found in archaeological excavations dating back five thousand years are the oldest known findings of yoga. Yoga is included in the form of hymns in the sacred Vedas inscriptions of the Hindus dating from 2000 BC. Older evidence of yoga is found on seals carved from stone dating back to 3000 BC [6,7].

Yoga practices and schools

There are five branches of yoga that are different from each other but are also connected with each other. The first is Raja Yoga, also referred to as meditation yoga. The other is Hatha Yoga, which includes asanas (postures) and breath awareness exercises (pranayama). Another arm is Bhakti Yoga, which is a yoga of love, love and devotion. Wisdom yoga is expressed as Jnana Yoga. The last one is Karma Yoga, known as cause and effect yoga [6].

The wise Maharishi Patanjali, who is the basis of yoga and is one of the most important masters, observed man, nature and the universe as long as he lived. He systematically transformed his observations into maxims by transforming them into rules of behavior. In this way, the foundations of the original yoga system known as Eight-Arm Yoga, or Classical Yoga, were laid. This system is called "Astanga Yoga" because it is the Sanskrit word "Asthanga" for these eight steps proposed by Maharishi Patanjali. Later on, Swami Vivekananda used the name "Raja

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Yoga" which means "King of Yogas" for this movement. The main purpose here is to calm the mind and control willpower. The teachings of Yoga defined by Patanjali's consisting of eight basic practices; Yama, Niyama, Asana, Pranayama, Pratyahara, Dhrana, Dhayana and Samadhi [6-9].

These eight key stages are:

1. Patch (control): Universal action control. This stage is based on some principles.

Ahimsa: don't control the violence, don't hurt anyone

Satya: truthfulness, honesty, lie control

Asteya: not stealing, ownership control

Bramhacharya: self-control

Aparigraha: not hoarding, controlling hoarding

Arcava: truth, control of wrong action

2. Niyama (absolute control): The individual's emotions, thoughts and actions are under control. Principles;

Shauca: internal cleaning, pollution control

Santoşa: contentment, satisfaction

Tapas: isolation, control of negativity

Svadyaya: self-education, control through mental, verbal and physical training

Ishvara pranidhana: perception of the absolute being, all actions to the spiritual purpose to the island.

Astikya: loyalty, control of a sense of devotion

Dana: benevolence, control of selfishness

Hri: humility, pride control

Mati: analyzing, controlling thought

Vrata: oath, controlling variability

3. Asana (posture): Body training techniques are physical exercises.
4. Pranayama (energy control): Breath and bioenergy techniques.
5. Pratyahara (Withdrawal from sensory impressions): Astral, wheel, and kundalini techniques.
6. Dharana (Focus or concentration): Concentration techniques.
7. Dhyana (deep focus): Meditation is continuous concentration, long-term focus. The mind becomes silent, the flow of thought stops and stillness develops.
8. Samadhi (superior focus): Thanks to superior concentration, the connection between the individual soul and the universal soul is clearly perceived [6,7].

Application areas of yoga in health

Yoga is used in many countries of the world and in many fields. It can be practiced by anyone regardless of their faith. It is generally applied as a mental and physical exercise system in the society and causes physical and mental relaxation. The state of well-being includes mental and physical integrity. Health in yoga is defined as a state of

wholeness [1-3]. Respiratory and circulatory systems, one of the most important systems in our body, are directly related to our health and even our existence. The work of the circulatory system is arranged with the asanas applied in yoga, and the work of the respiratory system with the pranayamas [6]. Providing a strong and flexible body, improving bodily balance, improving one's posture and energy level, providing a balanced metabolism, improving the functions of respiratory, digestive, endocrine, reproductive systems, lowering blood pressure, increasing the efficiency of the lungs, regulating sleep, improving cardiovascular diseases. It has bodily benefits such as supporting in the direction and relieving pain. In addition, it has spiritual benefits such as calming the mind, harmonizing with the outside world, improving concentration and mental clarity, reducing stress and anxiety, positive thinking, and supporting self-acceptance and flexibility [10,11].

Studies on yoga have been reported to have positive effects in many areas. When the literature is examined, yoga has been used specifically in neurological diseases such as hemiplegia, hemiparesis, multiple sclerosis, epilepsy, Alzheimer's disease, dementia, Parkinson's, headache / migraine, myelopathy, traumatic brain injury, Guillain-Barré syndrome, amyotrophic lateral sclerosis, peripheral neuropathy, asthma, chronic. It is stated that it is used during pregnancy in many painful conditions such as heart and lung system diseases such as obstructive pulmonary disease, cancer, speech and swallowing disorders, ankylosing spondylitis, and osteoarthritis [9-18]. In the practices performed in the field of psychiatry, it has been found that yoga reduces stress and anxiety, increases attention and concentration, regulates sleep and positively affects the quality of life [9,10]. In the study conducted by Innes et al., it was found that yoga regulates blood-sugar level, insulin resistance, blood pressure, sleep, and quality of life in diabetic patients [12]. Wurz et al. reported that yoga positively regulates blood pressure, cholesterol and triglyceride levels, and blood oxygen levels in a study conducted with cardiac patients [13]. Smith et al. reported in their study that yoga reduced anxiety and stress and increased the quality of life [14]. In a study, it was reported that yoga not only decreased the perception of stress but also increased muscle strength [15]. It has also been reported that yoga helps somatic complaints such as reduction of muscle tension and relief of bodily pain and aches [16]. In the study of McCaffrey et al., positive effects of yoga on blood pressure, body mass index, and heart rate were reported [17]. In a clinical study conducted with 100 people with high blood pressure, it was stated that yoga is the best method that can be used in the treatment of high blood pressure as a result of a twelve-week yoga study [18].

The place of yoga in radiotherapy

From the moment of cancer diagnosis, the physical, emotional, social and economic balances of the individual and his family deteriorate throughout the treatment period. Cancer is a concept that creates negative feelings in the person. These negative emotions caused by cancer can be reduced by yoga. In a study conducted with cancer patients, it was determined that the stress experienced before chemotherapy can be reduced by yoga [19]. McCall et al., in a study in which they investigated the effect of yoga on the quality of life in cancer patients, reported that yoga increased patient compliance and quality of life [20]. In a study by Banerjee et al in which they examined the effects of yoga on patients with breast cancer, they found that depression decreased in patients who underwent yoga [21]. In another study, it was reported that depression, pain and fatigue decreased and the quality of life increased with yoga in cancer patients [22].

Brain functions are regulated with yoga in cancer patients and the sympathetic nervous system begins to relax. The adrenal glands, which continuously release adrenaline due to stress, rest. Resting the endocrine system positively affects physical and emotional health. The mind calms down, stress decreases, negative emotions change, a positive attitude towards life occurs, depression decreases, satisfaction from life increases, and as a result, quality of life increases [6,7,13-21].

There are limited number of studies in the literature on the efficacy and safety of yoga in cancer patients receiving radiotherapy (RT). There are several studies conducted on patients receiving RT for the cause of brain tumors, prostate cancer and lung cancer. Most studies have been done on patients receiving RT for breast cancer. The group that received 12 sessions of yoga for patients who received RT due to brain tumor and the group that received only RT was compared. They stated that symptoms related to cancer were less common in the yoga group, decreased depressive symptoms and an increase in general quality of life [23]. Ben-Josef et al. examined the effects of yoga on fatigue, erectile dysfunction, urinary incontinence and quality of life before, during and after treatment in patients who underwent RT for prostate cancer. Yoga twice a week during RT reduced fatigue and urinary incontinence; reported that it had a positive effect on sexual health and quality of life [24]. It has been reported that yoga improves sleep disorders and reduces anxiety in patients who receive RT for lung cancer [25]. In the review written by Tolia et al., they evaluated the physical and psychosocial outcomes of yoga in oncological patients treated with RT. They reported that yoga reduced boredom, anxiety, and depression in oncological patients and increased the quality of life [26]. In clinical studies conducted in breast cancer patients who received RT, it reduced depressive symptoms [27,28], improved sleep disturbance [27], improved quality of life [28,29], improved physical functions [28], and reduced symptoms related to treatment [30]. It has been reported that it reduces fatigue [31], is anxiolytic [32,33], and is effective in reducing symptoms related to cancer [34].

When the literature is reviewed, if the benefits of yoga in cancer patients undergoing RT are summarized:

It reduces sleep disorders and is good for insomnia.

Improves circulation by accelerating blood flow.

Relieves pain.

It facilitates digestion.

It increases muscle strength and makes the muscular system more flexible.

Increases body awareness and relaxation ability.

It is beneficial in reducing stressors in stress management, reducing stress and anxiety

decreases.

By providing a positive perspective, emotional well-being and general provides the feeling of being healthy.

It increases awareness by calming the mind [23-34].

conclusión

Yoga is at a key point in ensuring health and happiness in today's world. In the literature, it is generally accepted that the use of yoga together with radiotherapy has physical and psychological benefits. In general, it is stated that it provides strengthening of muscles, reduction

of stress, and it can be used to relieve ailments such as fatigue, pain and concentration difficulties in order to maintain the physical and psychological well-being of the person. Yoga practices should be practiced by healthcare professionals who have enough knowledge on the subject. Clinical studies are needed to have sufficient information about whether patients who will receive radiotherapy are eligible to attend yoga classes.

Ethics approval

The study was granted concession by Erciyes University Medical Research Ethics.

Authors' contributions

YBC designed and written.

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