Management of Hypothyroidism through Yoga Intervention: A Study of Yogic Approaches

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ABSTRACT:

Introduction: Hypothyroidism is one of the most common health problems that are caused by the dysfunction of the thyroid gland. It is considered to be a widespread health problem in India and around the world and is more common among women. The aggregate prevalence of hypothyroidism in India is 10%, with a prevalence of 15.8% among women. In modern medicine, the synthetic thyroid hormone levothyroxine is used on a regular basis to treat hypothyroidism (Levothroid, Synthroid, and others). A patient may become permanently dependent on these medications.

Aim: Yoga-based practices have been demonstrated to help manage hypothyroid symptoms. There is limited research on the impact of yoga on thyroid diseases, despite the fact that it has been proposed that yoga may help to rejuvenate thyroid function.

Materials and methods: In this review, we looked at the basic principles of the Pancha Kosha (five sheaths of human existence) concepts from the Indian scripture Taittiriya Upanishad, as well as the pathophysiology of a disease from the Yoga approach, Yoga Vasishta’s Adhi (mind-originated) and Vyadhi (ailment/disease) concepts.

Result: Based on these perspectives and previous research, we offer an effective yogic management for hypothyroidism to improve the quality of life of a hypothyroid patient.

Keywords: Hypothyroidism; Yoga; Pancha kosha.

INTRODUCTION

Hypothyroidism is one of the most common health problems that are caused by the function of the thyroid gland. It is considered to be a widespread health problem in India and around the world and is more common among women. The aggregate prevalence of hypothyroidism in India is 10%, with a prevalence of 15.8% among women. Thyroid disorders are conditions that influence the thyroid gland1. The thyroid gland secretes hormones into the bloodstream. Its hormones are thyroxin [T4], tri-iodothyronine [T3], and calcitonin. The primary hormone is thyroxin, released by the gland into the bloodstream where it is converted to its active form of tri-iodothyronine. Thyroxin is a combination of iodine and amino acids. It controls the body’s overall metabolism by regulating oxygen consumption and increasing the level of glucose in the blood. Calcitonin promotes proper calcium deposition in the bones, which contributes to normal body development2. It maintains an adequate level of calcium in
the blood. The presence of certain nutrients such as essential fatty acids, amino acids, tyrosine, zinc, and iodine is required for the secretion of these hormones. The function of the thyroid gland is regulated by a feedback mechanism involving the hypothalamus in the brain. It secretes a hormone known as thyrotrophic releasing hormone [TRH] that stimulates the pituitary gland to produce thyroid stimulating hormone [TSH]. Its function is to control the number of hormones that are produced by the thyroid gland. If more TSH is produced, more T3 and T4 will be produced by the thyroid and released into the bloodstream. The three glands collaborate to ensure that the proper number of thyroid hormones is produced. However, when a person has hypothyroidism, this cooperation is disrupted. When there is insufficient hormone secretion, increased levels of TSH, triglycerides, low-density lipoprotein [LDL], and decreased high-density lipoprotein [HDL], hypothyroidism occurs. Primary hypothyroidism is defined as when T4 and T3 levels are low yet TSH released by the anterior pituitary is high. When TSH is low yet T4 and T3 levels are high, it’s classified as secondary. The known primary causes are autoimmune destruction of the gland, iodine deficiency or excess, and the known secondary causes are hypothalamic failure, pituitary failure, or post-pituitary surgery. The symptoms of hypothyroidism are those of decreased metabolism with the slowing of mental and physical activities; slowing of movement; constipation; tiredness; vague muscle pains, weight gain despite poor appetite; dry skin and hair fall; disordered menstruation; and forgetfulness. Yoga is an ancient science with a rich cultural heritage. It’s a science based on experiments. The word yoga is derived from the Sanskrit root ‘yuj’ which means to unite, to join, the union of jivatma with divine consciousness. The ancient Indians practiced yoga for higher purposes, such as self-realization, or kaivalya. The careful understanding of Patanjali’s yoga sutras persuades one’s that one shall treat the mind and body as a whole. Hence, they involve physical activities such as asanas and pranayama as a prelude to higher psychological practices. All of these, according to the sutras, aim to bring about integration in the psychological-physiological processes as the first step toward Patanjali’s aim of attainment, of ‘samadhi’ (Samadhibhavanarthah PYS 2.2). These practices are intended to stabilize the psychological-physiological mechanism so that there is less and less tendency toward imbalance in the face of external and internal stimuli. Applied research has shown that routine yoga practice not only controls but also encourages and retains the healthy condition of mind and body as well as prevents disease. Yoga is described as samatavam in shrimadbhagvatgeeta, which means equanimity on all levels.

“Yogasthah kurukarmani sangam tyaktava dhananjya, sidhisidhyo samobhutva samatavam yoga uchyate” (SBG 2.48)

This can also be thought of as an ideal health status in which physical homeostasis and psychic equanimity co-exist in a safe and balanced way.

AIMS AND OBJECTIVES

1. To review the literature and scientific evidences related to the impact of yoga practices on hypothyroidism.

2. Assessment of different sources available to establish the science of yoga therapy for the hypothyroid disorder.

MATERIALS AND METHODS

This study was carried out based on the research and yogic textbooks of various authors. The symptoms and causes of hypothyroidism were carried out by searching online research databases like Google Scholar and Encyclopaedia. Yogic approaches were studied from yogic textbooks and some previous research.

OBSERVATION & RESULT

A large number of studies have been available listing the advantages of yoga. Some of these studies, including hypothyroidism and yoga, are referenced in this review. Although yoga has not traditionally been associated with the treatment of hypothyroidism, applied researchers have observed it to be an effective option for the treatment of thyroid disorders and the symptoms that often accompany them. Many studies have concluded that yogic practices were efficient in balancing bodily hormone secretions for the treatment of hypothyroidism and hyperthyroidism. A group of researcher studied the impacts of daily yoga on participants’ hormone levels. They followed 45 participants divided into two groups: one control group who carried out their daily routines as usual and another group who practiced daily yoga for 30 to 60 minutes at least six days a week for 12 weeks. This group of researchers reported a gradual decrease in serum TSH levels but no change in T3 and T4 levels. Other researchers found yoga to be beneficial for thyroid disorders. They studied the impact of yoga on patients suffering from hyper and hypothyroidism. They used a study design of pre and post-test for data analysis. The researcher followed 90 subjects split into two groups, one a yoga practice group that
attended 6 yoga classes a week and the control group attended only Om Chanting (5 classes a week) for 3 months. All classes lasted 60 minutes. The researcher observed a significant increase in T3 and T4 levels and a decrease in TSH levels\(^9\).

According to several research studies, yoga helps individuals feel “more connected” to their bodies (both internal and external organs) and improves body experience and a sense of well-being\(^10\). In a pre-post study conducted by group of researchers observed that the subjects were reduced and relieved from thyroid disorder symptoms and experienced freshness and lightness of the body and mind\(^11\). The researcher enrolled 20 subjects into two groups: one control group and one group that practiced yoga for 3 months, including follow-up. The results concluded that there was a significant increase in T3 and T4 levels. This demonstrates a significant increase in hormonal levels in the experimental group. The researcher group reported a case where the patient had hypothyroidism with TSH levels of 36.6. The TSH level was reduced after the yoga therapy was completed\(^12\). There are many studies that report a significant improvement in the quality of life of hypothyroidism patients. 6 months of yoga practice may improve cholesterol levels, serum TSH, and thyroxin requirements in hypothyroidism patients\(^13\). The researcher followed 22 household women suffering from hypothyroidism. All the subjects underwent 6 months of yoga practice, one hour daily for four days a week. In this study, researchers observed a significant reduction in HDL along with a reduction in TSH level and a significant reduction in thyroxin medication.

A four-week intervention of pranayama study, conducted by researcher, demonstrated that regular pranayama practice, in addition to standard medical therapy, is more effective for hypothyroidism patients’ heart rate variability\(^14\). A recent study investigated the effects of three months of integrated yoga intervention on depression, lipid indices, and serum TSH levels among female patients with hypothyroidism and mild to moderate depression. 38 women (average age 24-34) participated in this single-arm pre-post design study. Participants were given a 3-month integrated yoga therapy that included asanas, pranayama, and relaxation techniques for 60 minutes per day (5 days a week). This study observed a significant reduction in TSH (37%), depression (58%), BMI (64%), anxiety (57%), and stress (55%)\(^15\). In the field of modern medicine, the synthetic thyroid hormone levothyroxine is used on lipid profile indices on a daily basis for hypothyroidism. A patient may become permanently dependent on these drugs.

**Assessment Criterion**

Yoga therapy never deals with the concept of only the physical body, but it involves a study and consideration of the *Pancha kosha* (five bodies of human existence). The concept of all being having a five-layered precise detail in the ‘Taittariya Upanishad’ as *panch kosha* (Figure 1), was concluded to be the most holistic concept of human existence, which does not contradict the modern systematic approach to understanding the human body\(^16\). According to Vedanta philosophy, there are three frames or types of *sarira* (body) enveloping the soul. They consist of five interpenetrating and interdependent sheaths (*kosha*). The three *sarira* are (a): *shhula*, the gross frame, or the anatomical sheath. (b): *sukshama*, the subtle frame, consisting of the physiological, psychological, and intellectual sheath, and (c): *Karana*, the causal frame, the spiritual sheath (from where all the five layers take birth) or the fifth layer of bliss, where perfect balance, harmony, and health reign supreme\(^17\).

1. **Annamaya kosha (physical body):** *Annamaya kosha* is the gross level of personality. It is the sheath of nourishment and nurtured by the nutrients and the food of human (dehoayamannabhavanoanamamayastu koshah V.Ch. 154). *Annamaya kosha* is ‘bio- somatic’ or outer covering of the soul (Atman). *Annamaya kosha* consists of five elements (Panchmahabhutas) namely earth (Prithvi), water (Jala or Apa), fire (Agni or tejas), wind (Vayu), space (Akasha). The balanced form of these five elements determines the health of the body.

2. **Pranamaya kosha (vital life force):** *Pranamaya kosha* includes the circulatory, respiratory, digestive, excretory, nervous, endocrine, and genital systems. It ensures the harmonious functions of these organs, through the physiological process. The physical body is kept healthy by a constant flow of this life force to each and every cell. If there is a disruption in the flow of *prana* to any organ, that organ can be dysfunctional at the physical level\(^18\).

3. **Manomaya kosha (mind):** *Manomaya kosha* affects the awareness, feeling, and motivation not derived from subjective experience. It is the ‘bio-magnetic’ covering of the soul. In this layer, psychological stress (emotions) begins as an uncontrollable rewinding surge of thoughts. This leads to imbalances called "adhi."

4. **Vijnanamaya kosha (Intellect):** *Vijnanamaya kosha* affects the process of intellectual reasoning and judgement derived from subjective experience. It is a discriminating capacity (inner mind, consciousness) that constantly guides the...
manomaya kosha to conquer the core instincts observed by sensory bodies.

4. **Anandamaya kosha (bliss)**: Anandamaya kosha is the subllest layer in the range of human existence’s five layers. This layer is not bound to time or space and is emotionless, totally silent, harmonious, and healthy.

**DISCUSSION**

The yogic concept of body and mind functioning is that both have a homeostatic mechanism that contributes to a balanced integrated functioning (**samadhi**) even in the face of normal external stimuli (**klesha**), i.e., that every person has an internal power of adaptation. At the same time, the body and mind strive for functional balance, any irritation or stimulus, whether external or internal (mechanical, chemical, electrical, biological, or psychological), causes some psycho-physiological disturbance (**vikshepa**). The duration of this ‘vikshepa’ is determined by the relative strength of the stimuli, on the one hand, and the body's and mind’s ability to maintain homeostasis, on the other. Yoga’s primary objective (**yukti**) is to invent ways and means to assist the body and mind in maintaining their state of balance or efficiently regaining it if lost, in the face of such upsetting factors. Disease, according to yoga, is termed as ‘vyadhi’. ‘Vyadhi’: disease is considered as one such psycho-physiological disturbance or ‘vikshepa’. The word yoga signifies integration “or” samadhi. Vyadhi is the opposite of samadhi, i.e., disintegration contributes to a feeling of being ill at ease (dukkha) and hence it is a disease-producing process. It is therefore a ‘vikshepa’.

The concepts of **Adhi-vyadhi** and **Pancha kosha** are relevant in the analysis of newer psychosomatic and lifestyle ailments or disorders, but also in developing therapeutic Yoga modules. Yoga Vasishtha, a classic yoga text, explains the cause and manifestation of disease admirably.

It encompasses psychosomatic and non-psychosomatic illnesses (**Yoga Vasishtha**, chapter 2/709-723). It attributes all physical ailments and psychic disturbances to the fivefold element (**Panchmahabhutas**). According to this text, psychosomatic disease arises from the mind, percolates into subtle energy known as the vital life force, and settles in the physical body, causing damage to the weakest organ and interfering with the physiology and functioning of those organs. In the case of hypothyroidism, the thyroid gland is the target organ. In medical science, hypothyroidism is considered an autoimmune disorder and there are many other causes also.

But the yogic approach to disease helps us to recognize that physical ailments are caused by a seed planted in the mind and beyond (Chitte viduriture deha sankshobhamanu czyatam Y.V.6/1-81/30). Rishi Vasishtha explains this through the concepts of ‘Adhi’ and ‘Vyadhi’: ‘Adhi’ is the psychological ailment in which the mental state is disrupted, resulting in a state of imbalance that leads to physical sickness, which is known as ‘vyadhi’ (Dehadukhim viduryayadhim adhyakhyavaasanamayam Y.V. 6/1 – 81/14). There are two major forms of disease ‘adhiya-vyadhi’ (Adhi - mind, ja - born; originated by mind) and anadhi (not originated by mind). ‘adhiya-vyadhi’ is that which is born out of adhi, and that which is not born out of adhi is called ‘anadhiya-vyadhi’. Adhi is divided into two categories ‘sara’ (essential) and ‘samanaya’ (ordinary). ‘Samanya adhiya vyadhi are that arise from day-to-day causes (psychosomatic or lifestyle disorders). The ‘Sara adhiya-vyadhi’ is the essential ailment of being in the birth-rebirth cycle, which can be described in modern parlance as a congenital disease. The former is treatable with commonplace measures such as medication and surgery. The ‘Sara adhiya-vyadhi continues until self-realization (Aatma Jnana) is achieved.

“Dwividhao vyadhisetti samanyah sara eva cha, vyavaharaku samanyah saro janmamayah samaritah” 6/1-81/32

**Anadhiya-vyadhi** is non-stress related disease caused by injury, infection or toxins that can be managed through any modern and Ayurvedic treatments.

In the **Yoga Vasishta**, adhi and vyadhi can both afflict the body at the same time or as a result of each other. In its metaphorical terminology **Yoga vashishtha** refers to the fundamental cause of both as ‘Ajnana’ (**morkhyamulehite vidyatatavyakhyaparikshiyha V.S. 6-81/14**). It also lists the causes of disease as a result of strong desire, ignorance, uncontrol of **chitta**, improper food item (**kujirnatavam, ajirnatavam, atijirnatavam**). Due to these causes, **prana vyu** flows improperly, disrupting the **nadi** or micro channels of energy in the body and thus affecting or causing loss of overall health. According to this concept, Hypothyroidism is considered to ‘adhiya and anadhiya-vyadhi’ depending on its causes. We call hypothyroidism as **anadhiya-vyadhi** where the causes are outside but not inside the body .it could be a trauma, under nutrition, removal of a thyroid gland, iodine deficiency, and radioactive ablation of thyroid. Where the causes are outside so correcting the outside causes, we can always handle this situation. **Adhiya** type of causes, where the causes are inside the body and its major cause called...
autoimmune thyroiditis, which is caused by chronic stress. A human being is the healthiest in the layer of bliss, with harmony and balance of all sense organs. The imbalances begin at the manomaya kosha, or mind layer. Some of the dualities that begin to dominate human activities include likes and dislikes, happiness and misery, and love and hate. When these imbalances worsen, they cause mental conflicts known as ‘adhis’. Yoga considers these mental conflicts as an uncontrollable frequency of thoughts in the mind. The outcome is a poor lifestyle and emotional stress, which can all be traced back to the mind. With the repetition of mental conflicts arises a habitual response of worry, melancholy, or aggression, which eventually affects the functioning of various systems. “Dhyayato visayanpuna sangasthanapajyate, sangat sanjayate kama, kamat krodho abhijayate, Krodhadhvatisammohaham sammohatsmrithivibhrama, smritibhramasadbudhinsaha, budhunashadpranshayanti”. (Bhagvadgeeta 2-26, 2-64; As shown in Figure 3).

When the mind is continually disturbed, (at the layer of pranamaya kosha) the vital life-force (varishta prana) in the body is disturbed by breath imbalances, causing malfunction in the hypothalamic-pituitary thyroid (HPT) axis. Then immune systems get disturbed (at the layer of anamaya kosha) and produce antibodies against our own tissues and attack the thyroid glands cells. Thus, function of thyroid gland deteriorates and it becomes unable to convert T4 to T3 and this underactive thyroid gland known as hypothyroidism. Long-term worry, anger, and despair (stresses) that lead to mind-body disorders are the habitual patterns of responses described by this rewinding destructive cycle of thoughts. As a result, the treatment is to slow down (prashamana) these looping thoughts that have accumulated enough force to upset the grosser layers of the pranamaya and anamaya koshas. Panchakosha-based yoga therapy creates harmony in the mind-body-breath by curing the psychological-physiological disturbances and developing balance in the five layers of our existence. At Anamaya Kosha, physical activity is an important component of being healthy. Sarvangasana (shoulder stand), matsyasana, ardhkati-chakrasana, ushtrasana, bhujangasana, trikonasana, suryanamaskar, yoga mudra, and Pavamuktasana are all beneficial for hypothyroidism and activate the musculoskeletal system, reducing stress and fatigue. Asanas also improve the digestive system and strengthen the glands. Kriyas like Jalaneti (which activates the thyroid gland) and vamandhauti (which relieves a clogged digestive system) can also help with physical layer treatment. At the pranamaya kosha, various breathing practices are used to improve neuro-glandular functions and to balance the vital life force. Breathing practices include Bhasrika (its heating effects speed up metabolism), anuloma-viloma (useful in rebalancing metabolism), bhramari (induce calmness, relieve stress, and generate positive vibration which rejuvenates the nervous and endocrine systems), and ujjayi (stimulate thyroid gland). Vipritkarni mudra (incorporates ujjayi pranayama and awareness of psychic passages) and Jalandhar bandha (compresses and massages the thyroid and parathyroid gland to optimize their functions) (Swami, 2013). At the manomaya kosha, AUM chanting and OM meditation rejuvenates the thyroid gland, induce relaxation and reduce the rewinding process of thoughts, improve the secretion of feel-good hormones, and positive vibrations stimulate the healing effect. Yogic counseling, self-analysis, and yoga-Nidra are helpful in balancing the vijnanamaya kosha. At anandamaya kosha, karma yoga (action in relaxation) should be practiced to experience bliss continually.

CONCLUSION

From this study, we conclude that the long-term practise of yoga may help to improve the quality of life of a person suffering from hypothyroidism. Yoga’s fundamental components, such as postures, breathing, and meditation, may be easily adopted by most patients with few complications to improve the therapeutic effects of hypothyroidism.

Acknowledgement: We would like to acknowledge Department of Yoga Science, University of Patanjali and IT Department, Library for providing the needed resources for the completion of the work.

Financial Support: The project is self-funded.

Conflict of Interest: There are conflicts of interest whatever.

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How to cite this article: Rani P, Singh S “Management Of Hypothyroidism Through Yoga Intervention: A Study Of Yogic Approaches” IRJAY.[online]2022;5(9); 124—131. Available from: https://irjay.com
DOI link- https://doi.org/10.47223/IRJAY.2022.5922
Figure 1 *Panchkosha: The five layer of human existence*

**Figure 2. Disease classification according to yoga vasishta.**

*Anandmaya kosha*  
*Vijyanmaya Kosha*  
*Manomaya Kosha*  
*Pranamaya Kosha*  
*Annamaya Kosha*
Thinking of objects imagined or real (*dhyayato vishyan*)

Desire (*sangah*)

Anger (*krodha*)

Infatuation (*kamah*)

Loss of memory (*smriti vibhramah*)

Disturbed awareness (*sammohaha*)

Mental illness (*budhinasha*)

Destruction (*pranashyati*)

Figure 3. *Stress according Bhagvadgeeta*