

# Evaluation of Thyroid Hormone Deficiency among Female Visited In Government Hospital: A Prospective Study

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## Abstract

**Background:** Among females, there is significant prevalence of diseases of the thyroid gland. Hence; the present study was undertaken for assessing thyroid hormone deficiency among females visiting government hospital. **Subjects and Methods:** A total of 255 patients were identified to be suffering from thyroid hormone deficiency. Among these 255 patients, 152 were females. A separate data sheet was made for recording the clinical profile of females. Complete demographic and medical details of all the female patients with thyroid hormone deficiency were obtained. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. **Results:** 38.82 percent of the patients belonged to the age group of more than 50 years. 27.63 percent of the patients belonged to the age group of 41 to 50 years. 20.39 and 13.13 percent of the patients belonged to the age group of 30 to 40 years and less than 30 years. Feeling of tiredness was found to be present in 69.08 percent of the patients, while weakness and pain in muscles and joints was found to be present in 72.37 percent of the patients. **Conclusion:** Thyroid hormone deficiency is common among elderly females with feeling of tiredness and muscle and bone pain the prominent clinical manifestation encountered.

**Keywords:** Deficiency, Hormone, Thyroid.

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## Introduction

Diseases of the thyroid gland are common in adults. Thyroid dysfunction is diagnosed by measurement of the serum thyrotropin concentration, also known as the thyroid stimulating hormone (TSH). To date, serum TSH measurement is the best and most reliable test to diagnose problems with the thyroid gland.<sup>[1- 3]</sup> It is now well-known that thyroid disorders are common in India. In the past focus have been on iodine deficiency disorders (IDDs). It has been more than three decades since universal salt iodization program was introduced in India. India is undergoing a transition from iodine deficient to iodine sufficient state. Studies looking at the prevalence of thyroid disorders in the post-iodization era are far and few.<sup>[4- 6]</sup>

Hence; under the light above mentioned data, the present study was undertaken for assessing thyroid hormone deficiency among females visiting government hospital.

## Subjects and Methods

The present study was planned in the department of Department of General Medicine, Government Medical College, Bharatpur, Rajasthan, India. The aim of the study was to assess the profile of female patients with thyroid hormone deficiency. Ethical approval was obtained from

institutional ethical committee and written consent was obtained from all the patients after explaining in detail the entire research protocol. Thyroid-stimulating hormone (TSH) was used as the screening test to diagnose thyroid hormone deficiency. A total of 255 patients were identified to be suffering from thyroid hormone deficiency. Among these 255 patients, 152 were females. A separate data sheet was made for recording the clinical profile of females. Complete demographic and medical details of all the female patients with thyroid hormone deficiency were obtained. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. Chi- square test was used for assessment of level of significance.

## Results

In the present study, a total of 152 females with thyroid hormone deficiency were screened. Mean age of the patients of the present study was 52.5 years. 38.82 percent of the patients belonged to the age group of more than 50 years. 27.63 percent of the patients belonged to the age group of 41 to 50 years. 20.39 and 13.13 percent of the patients belonged to the age group of 30 to 40 years and less than 30 years. In the present study, Clinical presentation of the patients with thyroid hormone deficiency consisted chiefly of feeling of tiredness, weight gain, feeling cold,

weakness and pain in muscles and joints, hair loss and dry and itchy skin. Feeling of tiredness was found to be present in 69.08 percent of the patients, while weakness and pain in muscles and joints was found to be present in 72.37 percent of the patients.

**Table 1: Age-wise distribution of female patients with thyroid hormone deficiency**

Age group (years)	Number of patients	Percentage of patients
Less than 30	20	13.16
30 to 40	31	20.39
41 to 50	42	27.63
More than 50	59	38.82

**Table 2: Clinical profile**

Clinical profile	Number of patients	% of patients
Feeling of tiredness	105	69.08
Weight gain	56	36.84
Feeling cold	40	26.32
Weakness and pain in muscles and joints	110	72.37
Hair loss	29	19.08
Dry and itchy skin	46	30.26
Others	28	18.42

## Discussion

Undiagnosed and untreated thyroid disease can be a cause for infertility as well as sub-fertility. Both these conditions have important medical, economical, and psychology implications in our society. Normal thyroid function is necessary for fertility, pregnancy, and to sustain a healthy pregnancy, even in the earliest days after conception. Thyroid evaluation should be done in any woman who wants to get pregnant with family history of thyroid problem or irregular menstrual cycle or had more than two miscarriages or is unable to conceive after 1 year of unprotected intercourse.<sup>[7-9]</sup> Overt hyperthyroidism results in the alteration of estradiol metabolism and the augmentation of gonadotropin in response to gonadotropin-releasing hormone. Baseline gonadotropin concentrations are also frequently elevated. The current prevalence of irregular cycles is 21.5%, which is a dramatic decrease from the previously reported figure of 65%, due to the earlier detection and treatment of hyperthyroidism.<sup>[10]</sup>

In the present study, a total of 152 females with thyroid hormone deficiency were screened. Mean age of the patients of the present study was 52.5 years. 38.82 percent of the patients belonged to the age group of more than 50 years. 27.63 percent of the patients belonged to the age group of 41 to 50 years. 20.39 and 13.13 percent of the patients belonged to the age group of 30 to 40 years and less than 30 years. The common clinical features associated with hypothyroidism are tiredness, weight gain, dry skin, cold intolerance, constipation, muscle weakness, puffiness around the eyes, hoarse voice, and poor memory. However, a study surveying thyroid disease in Colorado has shown that the sensitivity of individual symptoms ranges from 2.9% to 24.5%. Although the likelihood of hypothyroidism

increases with increasing numbers of symptoms, absence of symptoms does not exclude the diagnosis. Furthermore, these symptoms are non-specific and common in the euthyroid population with around 20% of euthyroid subjects having four or more hypothyroid symptoms. Therefore, the diagnosis of hypothyroidism must be made biochemically.<sup>[11]</sup> Thyroid dysfunction is associated with a broad range of metabolic disturbances and conditions such as: osteoporosis, hypercholesterolemia, obesity, and cardiovascular disease. There is a strong relationship between hyperthyroidism and decreased bone mineral density (BMD) and osteoporosis. Overt hyperthyroidism is associated with decreased BMD, and osteoporosis due to an accelerated bone remodelling.<sup>[10,11]</sup>

In the present study, Clinical presentation of the patients with thyroid hormone deficiency consisted chiefly of feeling of tiredness, weight gain, feeling cold, weakness and pain in muscles and joints, hair loss and dry and itchy skin. Feeling of tiredness was found to be present in 69.08 percent of the patients, while weakness and pain in muscles and joints was found to be present in 72.37 percent of the patients. Marwaha et al. did a country-wide study in school children in India to look at the prevalence of thyroid disorders, two decades after salt-iodization. The prevalence of hypothyroidism and hyperthyroidism in their study was 7.3% and 0.3%. The most recent nationwide study showed that hypothyroidism was common in India; in this population 88% was consuming iodized salt.<sup>[7,8]</sup> Velayutham K et al conducted a study in female college students in seven colleges in Madurai District, Tamil Nadu. A total of 1292 subjects were screened of whom 161 subjects (12.5%) had abnormal TSH. The overall prevalence of elevated TSH was 11% out of which 9.7% had mild TSH elevation. A low TSH was seen in 1.3% of the study population. Thyroid dysfunction was common in young women in south India.<sup>[12]</sup>

## Conclusion

Under the light of above obtained data, the authors concluded that thyroid hormone deficiency is common among elderly females with feeling of tiredness and muscle and bone pain the prominent clinical manifestation encountered. However; further studies are recommended.

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