



## ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICE AMONG PATIENTS WITH HYPOTHYROIDISM IN A TERTIARY CARE HOSPITAL AT PUDUCHERRY - A CROSS SECTIONAL STUDY

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**ABSTRACT** **Back ground** Hypothyroidism is a commonest endocrine disorder globally. The awareness of the patient regarding the disease and treatment is vital. **Objectives** To assess the knowledge, attitude, practice among patients with hypothyroidism in a tertiary care hospital at Puducherry. **Material and methods** The present study was cross sectional study carried out among hypothyroid patients more than 18 years of age attending to the outpatient department, department of general medicine. The study period was 3 months. Informed consent was obtained from all the participants included into the study. The sample size was estimated to 200. The data was collected in a semi structured questionnaire. Statistical analysis was done using descriptive statistics. **Results** 122 (61%) had known the shape of thyroid. 144 (72%) had known the location of thyroid gland. 102 (51%) had known the hormones responsible for hypothyroidism. 84 (42%) had known the relation between TSH and hypothyroidism. 164 (82%) reported that they took thyroid medications regularly. 130 (65%) reported that they sometime miss the doses. 148 (74%) reported that they take medication 30 to 60 minutes prior to breakfast. **Conclusion** With regard to practice, certain recommended practices like checking TSH levels were poor. Increasing the knowledge in aid in better practice among the participants.

**KEYWORDS :** Hypothyroid, Knowledge, Attitude, Practice, health education, symptoms, diet

### INTRODUCTION

More than 300 million people suffer from thyroid dysfunction and more than half will be unaware about that. Within the various thyroid dysfunctions, hypothyroid is the more common one<sup>1,2</sup>. Hypothyroidism is characterised by broad clinical spectrum ranging from an overt state of myxoedema, end-organ effects and multisystem failure to an asymptomatic or subclinical condition with normal levels of thyroxine and triiodothyronine and mildly elevated levels of serum thyrotropin<sup>3</sup>. Many factors like the sociodemographic and environmental factors will affect the incidence of hypothyroidism<sup>12</sup>.

An Indian study reported 10% of the study population to suffer from hypothyroidism and one third of them did not know they were hypothyroid before the study. The study also found that among those who self-reported with hypothyroid many had a high TSH levels indicating the management of hypothyroid in them<sup>4</sup>. Another review from India reported the pooled prevalence of hypothyroid among pregnant women to be 11.07% and the estimate of subclinical and overt hypothyroid was at 9.51% and 2.74%, respectively<sup>5</sup>.

Hypothyroidism has profound impact on health and well-being. Globally thyroid disorders are one of the most under diagnosed and neglected chronic disorders<sup>6</sup>. Patients' knowledge and awareness about the disease and its treatment is important for good long-term outcome and compliance in any chronic diseases<sup>7</sup>. Studies had reported that for effective management of hypothyroidism, apart from correct use of medication, dose adjustment what is also necessary is patient education<sup>8</sup>. The present study was done with the objective of assessing the knowledge, attitude and practice among patients with hypothyroidism in a tertiary care hospital. Th above will through a light on the pattern of knowledge, attitude and practice towards hypothyroidism and will aide in development of tailor-made health education material for the same.

### MATERIALAND METHODS

The present study was cross sectional study carried out in the department of general medicine, Sri Venkateshwaraa Medical College Hospital and Research centre, Puducherry. The study was carried out for a period of 3 months between September 2023 and November 2023. Ethical clearance for the study was obtained from the institutional ethics committee. Hypothyroid patients aged more than 18 years and who had attended the out-patient department during the study period were included into the study. Those with hyperthyroidism and those consuming amiodarone were excluded from the study. Informed consent was obtained from all the participants. The sample size for the study was determined using the open epi software 3.01. Using the data from the study by kumar P et al<sup>9</sup> the sample size was

estimated to be 200<sup>8</sup>. Convenience sampling was followed. The data for the study was collected using a validated and pre tested structured questionnaire.

The questionnaire consisted of four parts. Part I dealt with socio demographic variables. The socio demographic variables included into the study were age, sex, place of residence, education, occupation, monthly income and employment status. The knowledge part consisted of 11 questions. The correct answer was scored one and wrong answer was scored zero. The minimum obtainable knowledge score will be zero while maximum will be 11. The attitude part consisted of 4 attitude related questions. Each question was evaluated using a Likert scale. 'Strongly disagree' was scored with 1 and 'strongly agree' was scored with 5. For an individual participant the minimum attitude score obtainable was 4 indicating the most negative attitude towards hypothyroidism and the maximum obtainable score was 20 indicating the most positive attitude towards hypothyroidism. The practice part consisted of 8 practice related questions. All the practice questions were close ended ones.

The data collected were entered into Microsoft excel 2019 and the master chart was created. The master chart was then loaded onto SPSS version 26 for statistical analysis. Descriptive statistics were used in analysis of the data. The qualitative variables were expressed using frequency and percentage. The knowledge and attitude scores were expressed in mean and standard deviation. Bar charts were used to represent the data pictographically.

### RESULTS

Among the 200 participants, 68 (34%) were in the age group 41 to 50 years followed by 46 (23%) in the age group 51 to 60 years. 140 (70%) were females. 70 (35%) resided in urban area. 48 (24%) studied up to higher secondary school followed by 42 (21%) studied up to middle school. 62 (31%) were housewives followed by 58 (29%) were doing un skilled occupation. 78 (39%) were earning a monthly income of less than 5000 rupees followed by 46 (23%) with an income between 5001 to 10000 rupees. 162 (81%) were married and 30(15%) were either separated or widowed (Table 1).

With regard to knowledge, 122 (61%) had known the shape of thyroid. 144 (72%) had known the location of thyroid gland. 102 (51%) had known the hormones responsible for hypothyroidism. 84 (42%) had known the relation between TSH and hypothyroidism. 116 (58%) had known the dietary causes of hypothyroidism. 82 (41%) had known the psychiatric conditions associated with hypothyroidism. 144 (72%) had known the symptoms associated with hypothyroidism. 124 (62%) had thought hypothyroidism is treatable. 96 (48%) had known the tests

required for diagnosing hypothyroidism. 152 (76%) had thought hypothyroidism can occur during pregnancy. 130 (65%) had known the medications that cause hypothyroidism (Table 2). 42 (21%) were found to have good knowledge and 96 (48%) were having moderate knowledge about hypothyroidism (Fig 1).

With regard to the attitude, when asked about whether women are at greater risk of developing hypothyroidism, 42 (21%) strongly agreed followed by 84 (42%) agreed. To the statement, people above age 35 years should be tested frequently for hypothyroidism, 24 (12%) strongly agreed followed by 78 (39%) agreed. To the statement whether pregnant women should be tested for hypothyroidism, 26 (13%) strongly agreed and 56 (28%) agreed. To the statement people with relatives and family members diagnosed with hypothyroidism should be tested for hypothyroidism, 48 (24%) strongly agreed and 62 (31%) agreed (Table 3). 98 (49%) had good attitude followed by 70 (35%) with moderate attitude and 32 (16%) had poor attitude (Fig 2).

164 (82%) reported that they took thyroid medications regularly. 130 (65%) reported that they sometime miss the doses. 148 (74%) reported that they take medication 30 to 60 minutes prior to breakfast. 82 (41%) reported that they took thyroid medication with other medicines. 84 (42%) reported that they tested TSH levels regularly as advised by the physician. 122 (61%) had reported that they look for information regarding hypothyroidism on internet or smartphone. 116 (58%) reported that they asked the doctor regarding more information or counselling on how to manage hypothyroidism. 158 (79%) avoided eating cabbage, cauliflower and soya (Table 4).

**DISCUSSION**

Hypothyroidism has profound impact on health and well-being<sup>6</sup>. It was a more common disorder<sup>12</sup>. The prevalence of hypothyroid around Indian adults was estimated to be around 10%<sup>4</sup>. Knowledge and awareness regarding hypothyroid were found to be vital as they aid in following of correct treatment practices<sup>7,8</sup>. The present study was done with the objective of assessing the knowledge, attitude and practice among patients with hypothyroidism in a tertiary care hospital.

The present study was cross sectional study carried out for a period of 3 months between September 2023 and November 2023. The sample size was estimated to 200. All patients diagnosed with hypothyroidism during the study period were included into the study and anyone with hyperthyroid disorder and on drug amiodarone were excluded. Ethical clearance was obtained from the institutional ethics committee. Informed consent was obtained from all the participants included into the study.

The proportion of knowledge among the participants was moderate. Most were unable to correctly state the psychiatric conditions associated with hypothyroidism. Only a few had known the relation between TSH and hypothyroidism. 6 in 10 and 7 in 10 had known the shape and location of thyroid gland, respectively. Considerable proportion had stated the symptoms associated with hypothyroidism and hypothyroidism is treatable, respectively. A study by kumar P et al reported 3 in 10 only knew about thyroid and only half knew about hypothyroid<sup>9</sup>. Singh A et al reported many participants to have misconceptions about the thyroid disorders<sup>10</sup>. Kannan et al reported less than half the participants had known false dietary opinions regarding hypothyroid and only few reported T4 to be effective in treating hypothyroidism<sup>11</sup>. Alhazmi AA et al reported many participants to have low level of knowledge regarding hypothyroidism. Males and age group more than 45 years were found to have lower levels of knowledge than the others<sup>12</sup>. Rai S et al reported that participants had inadequate knowledge about thyroid gland and associated disorders. Many believed in lot of myths and misconceptions about thyroid gland<sup>13</sup>.

With regard to attitude most participants were having positive attitude towards hypothyroidism. They were of attitude that women were at increased risk to hypothyroidism than others and people in the age group more than 35 years to have higher risk for hypothyroidism than the rest. Many were also in agreement that pregnant women have to be tested for hypothyroidism. If there supposed to be family history of hypothyroidism, then there shall be increased suspicion for the development of the same. With regard to the practice, most reported to have taking the medication regularly with some reporting to miss the dose sometimes. Three forth reported to take the medication 30 to 60 minutes prior to food. A small proportion reported to take thyroid medications along with other medicines. Only 40% reported to test

TSH levels regularly. Six in ten seek for information regarding hypothyroid online. Around 60% reported to have asked their doctor to provide more information. Around 80% avoided consuming cauliflower, cabbage and soya.

Knowledge among patients is important to treat thyroid disorder better. Education should take place at all levels including doctors, decision makers, health workers and citizen groups<sup>14</sup>. Perumal SS et al stressed on the importance of developing a multifactorial and tailored health education for patients with marginal or inadequate health literacy<sup>15</sup>. Dew R et al in their study regarding attitude and perceptions reported that educating patients regarding hypothyroidism regarding the consequences of inadequate thyroid hormone replacement will reduce the barriers and improve treatment outcomes<sup>16</sup>. The study is not generalisable as it was done in a single tertiary care centre. The strengths of the study include the domains it had explored.

**CONCLUSION**

Knowledge regarding the hypothyroidism is moderate. Most had positive attitude towards hypothyroidism. With regard to practice, certain recommended practices like checking TSH levels were poor. Increasing the knowledge in aid in better practice among the participants.

**Table 1: Sociodemographic And Baseline Characteristics Among The Study Participants.**

Variables		Frequency (n=200)	Percentage (%)
Age group (in years)	18-30	22	11
	31-40	26	13
	41-50	68	34
	51-60	46	23
	>60	38	19
Gender	Male	60	30
	Female	140	70
Place of residence	Urban	70	35
	Rural	130	65
Education	Illiterate	16	8
	Primary	26	13
	Middle	42	21
	Secondary	38	19
	Higher secondary	30	15
	Graduate and above	48	24
Occupation	Unemployed	24	12
	Unskilled	58	29
	Semiskilled	20	10
	Skilled	18	9
	House wife	62	31
	Retired	18	9
Monthly income (in rupees)	<5000	78	39
	5,001-10,000	46	23
	10,001-25,000	38	19
	25,001-50,000	26	13
	>50,000	12	6
Marital status	Married	162	81
	Unmarried	8	4
	Separated/widowed	30	15

**Table 2: Distribution According To Correct Answer To The Knowledge-based Questions.**

Sno	Question	N= 200	%
K1	Do you know the shape of thyroid gland?	122	61
K2	Do you know the location of thyroid gland?	144	72
K3	Do you know the hormones responsible for hypothyroidism?	102	51
K4	Do you know the relation between TSH and hypothyroidism?	84	42
K5	Do you know the dietary causes of hypothyroidism?	116	58
K6	Do you know the psychiatric conditions associated with hypothyroidism?	82	41
K7	Do you know the symptoms associated with hypothyroidism?	144	72
K8	Do you think that hypothyroidism is treatable?	124	62

K9	Do you know the tests required for diagnosing hypothyroidism?	96	48
K10	Do you know whether hypothyroidism can occur during pregnancy?	152	76
K11	Do you know the medications that cause hypothyroidism?	130	65

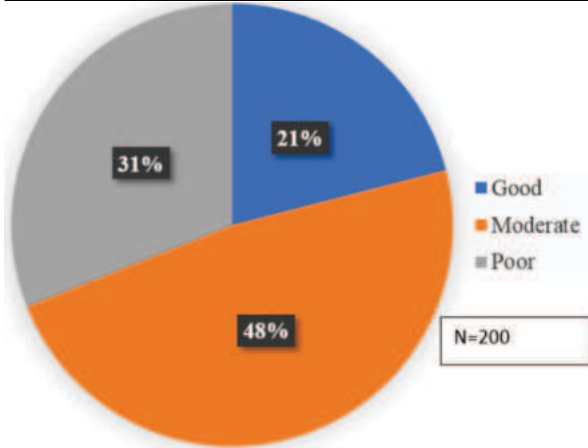


Fig 1: Pie chart showing distribution according to knowledge scores.

Table 3: Distribution According To Attitude Towards Hypothyroid Among The Participants.

Sno	Question	SA		A		N		D		SD	
		N	%	N	%	N	%	N	%	N	%
A1	Women are at greater risk of developing hypothyroidism and should be tested at regular intervals.	42	21	84	42	34	17	22	11	18	9
A2	People above age of 35 years should be tested frequently for hypothyroidism.	24	12	78	39	54	27	24	12	20	10
A3	Pregnant women should be tested for hypothyroidism.	26	13	56	28	70	35	32	16	16	8
A4	People with relatives/family members diagnosed with hypothyroidism should be tested for hypothyroidism.	48	24	62	31	42	21	30	15	18	9

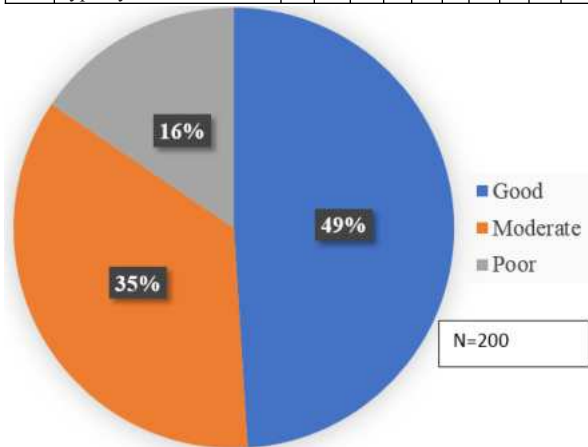


Fig 2: Pie Chart Showing Distribution According To Attitude Scores.

Table 4: Distribution According To Practice Towards Medication Intake For Hypothyroidism And Its Adherence Among The Participants.

S No	Question	Yes	N=200	%
P1	Do you take your medications for hypothyroidism regularly?	164	82	18
		No	36	18

P2	Do you miss any doses of your medications for hypothyroidism?	Yes	130	65
		No	70	35
P3	Do you take you medication 30 to 60 minutes prior to breakfast?	Yes	148	74
		No	52	26
P4	Do you take your thyroid medications with any other medicines?	Yes	82	41
		No	118	59
P5	Do you get your TSH levels tested regularly as advised by your physician?	Yes	84	42
		No	116	58
P6	Do you look for information on hypothyroidism on the internet / smartphone?	Yes	122	61
		No	78	39
P7	Do you ask your doctor for more information or counselling on how to manage hypothyroidism?	Yes	116	58
		No	84	42
P8	Do you avoid eating cabbage, cauliflower and soya?	Yes	158	79
		No	42	21

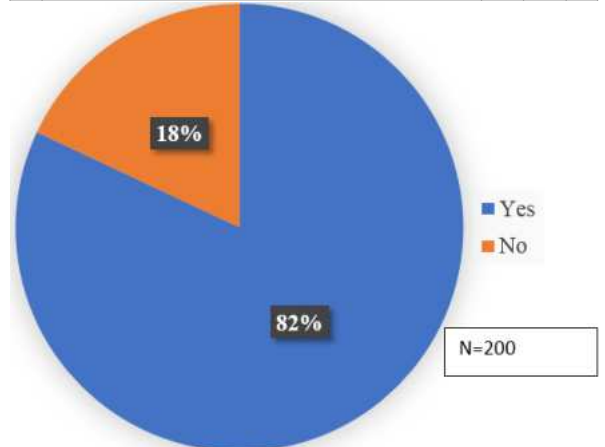


Fig 3: Pie chart showing distribution according to intake of medications regularly.

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