WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
Coden USA: WJPRAP Impact Factor 8.453
Volume 14, Issue 20, 679-687. Research Article ISSN 2277–7105

ASSESSMENT OF K A P AMONG THE PUBLIC TOWARDS THYROID DISORDER – A COMMUNITY BASED INTERVENTIONAL STUDY

Thejaswini B.*, Aksa Ann Thomas, Varsha Padmanabhan, Shabaraya A. R., Adarsh P. K. Ahamed Farzeen M., Nandita Patgar, Thashika L. R., Thrupthi D. R.

Department of Pharmacy Practice, Srinivas College of Pharmacy, Mangalore, Karnataka, India.

Article Received on 20 Sept. 2025,
Article Revised on 10 Oct. 2025,
Article Published on 16 Oct. 2025,

https://doi.org/10.5281/zenodo.17365866

***Corresponding Author**

Thejaswini B.

Department of Pharmacy Practice, Srinivas College of Pharmacy, Mangalore, Karnataka, India.

How to cite this Article: Thejaswini B.*, Aksa Ann Thomas, Varsha Padmanabhan, Shabaraya A.R., Adarsh P.K. Ahamed Farzeen M., Nandita Patgar, Thashika L.R., Thrupthi D.R. (2025). Assessment of K A P Among The Public Towards Thyroid Disorder - A Community Based Interventional Study. World Journal of Pharmaceutical Research, 14(20), XXX–XXX.

ABSTRACT

Thyroid disorders are among the most prevalent endocrine conditions globally, affecting approximately 200 million people, with India accounting for a significant burden about 42 million individuals. Despite this, thyroid disorders such as hypothyroidism, hyperthyroidism, autoimmune thyroiditis, and thyroid cancer often remain under diagnosed due to limited awareness, poor health-seeking behaviour, and widespread misconceptions. This community-based interventional study was conducted in Mangalore, Karnataka, to assess the knowledge, attitude, and practice (KAP) regarding thyroid disorders among adults aged 18–65 years. A total of 206 participants were selected using random sampling, and data were collected through a structured, pre-tested KAP questionnaire administered via face-to-face interviews in English and Kannada. Immediately after the baseline assessment, participants were provided with a Patient Information Leaflet (PIL) covering thyroid anatomy, symptoms, risk factors, diagnostic tests, and treatment options. The study found that while 99% of participants had heard about the thyroid gland, only 27.2% demonstrated good knowledge, 35.4% practiced evidence-based health behaviours, and 41.3% showed a positive attitude toward thyroid health. Statistical analysis revealed significant associations between gender and both knowledge and attitude, while education level showed no significant influence. The results highlight critical gaps in thyroid health literacy despite high awareness,

and they emphasize the need for targeted educational interventions. PILs and physician-led counseling is recommended to dispel myths and improve early detection and long-term disease management. This study underscores the importance of community level strategies to enhance thyroid health outcomes, especially among women and older adults.

KEYWORDS: *Thyroid disorders, Knowledge, Attitude, Practice, Awareness.*

INTRODUCTION

Thyroid gland is a butterfly shaped endocrine organ located in the neck in front of the trachea. The function of this gland is to produce sufficient amount of thyroid hormones which will primarily influence the metabolic rate and protein synthesis. Thyroid hormones also have other effects such as development of tissues and organs. The production of thyroid hormone is regulated by hypothalamic pituitary axis through thyroid stimulating hormone from anterior pituitary gland and thyroid releasing hormone from the hypothalamus.[1]

In recent years, abnormal thyroid function has been a major problem in clinical practice, raising health concerns among patients.[2] Thyroid disease is caused by an abnormal immune response to auto-antigens present in the thyroid gland. The three main types of autoimmune thyroid disease are hypothyroidism, lymphocytic thyroiditis and hyperthyroidism.[3]

Hypothyroidism indicates a decrease in the production of thyroid hormone by the thyroid organ and can be primary [abnormality in the thyroid organ itself] or secondary [as a result of pituitary or hypothalamic illness]. Primary hypothyroidism is the etiology in roughly 99% of the cases of hypothyroidism. Their signs and symptoms change significantly from range to range and are dependent on the amount of iodine in the diet. Nearly one - third of the world's populace lives in the zones of iodine insufficiency. Symptoms of Hypothyroidism include hoarse voice, slowed speech, puffy face, drooping eyelids, intolerance of cold condition, constipation, weight gain, dry hair, dry skin and depression.[3]

Hyperthyroidism occurs in approximately 2 to 3% of the adult population. Hyperthyroidism occurs about ten times more frequently in women than men. The average age at diagnosis of hyperthyroidism is 48 years. Hyperthyroidism is defined by increased thyroid hormone production and thyroid gland secretion. The leading cause of hyperthyroidism is Grave's disease.[5] It is characterized by increased metabolism of all the body systems.[6]Typical symptoms of hyperthyroidism include high blood pressure, fast heartbeat, moist skin,

increased sweating tremor, nervousness, increased appetite with weight loss, diarrheaor frequent bowel movements, weakness, eye balls appear to be protruding, and sensitivity of the eyes to light.[3]

Any genetic, social or environmental factors can cause thyroid disorders which may include family history, smoking, alcohol consumption, dietary habits and all unmanaged and untreated thyroid disorders leads to life threatening and serious complications like cardiovascular diseases, infertility complications during pregnancy neurological complications myxoedema coma for overall complications. Thyroid diseases are among the most prevalent of medical conditions, and considered the most prevalent in women during their most fertile years [15 - 35 years] and can adversely affect obstetric outcomes.[7] Antithyroid drugs such as carbimazole are used to lower thyroid hormone level before radioactive iodine treatment or surgery. Radioactive iodine therapy is commonly used and is safe. Some patients may need pretreatment with antithyroid drugs to avoid radioactive iodine - induced thyroiditis and exacerbation of the hyperthyroidism. Antithyroid drug treatment may also be necessary after radioactive iodine therapy. Therefore awareness regarding thyroid glands is very much important because it plays vital role in many aspects of health and well-being. The untreated thyroid disorder leads to many other complications. Hence this study will focus on assessing knowledge, attitude and practice among the public towards the thyroid disorders.

METHODOLOGY

A three month community based interventional study was conducted in Mangalore, Karnataka, targeting the general adult population aged 18–65 years. A sample of 206 participants was randomly selected who met our inclusion criteria and were adults of both genders residing in Mangalore who provided written informed consent, while individuals unwilling to participate or with cognitive impairments preventing questionnaire completion were excluded. The structured KAP questionnaires is comprised of 12 knowledge items, 8 attitude items, and 5 practice items, with questions framed in clear, simple language and available in English and Kannada. Ethical approval was obtained from Srinivas Institute of Medical Science and Research Centre, Mukka. During our community visits, we obtained informed consent, explained the purpose of the study, and administered the questionnaire face to face. Immediately after completing the survey, participants received a patient information leaflet (PIL). All responses and demographic data were recorded and entered into Microsoft

Excel for statistical analysis. Descriptive statistics Frequencies and percentages were used to summarize participants demographics and distribution of correct responses in knowledge, attitude, and practice domains. To identify demographic correlates of KAP levels (e.g. gender, age groups, educational attainment), chi square tests were performed with a significance threshold set at $p < 0.05$.

RESULTS

The present community-based interventional study in Mangalore assessed the knowledge, attitude, and practices (KAP) regarding thyroid disorders among 206 participants. The demographic profile included 128 females (62%) and 78 males (38%), with the majority aged between 18–30 years (39%), followed by 31–40 years (29%), 41–50 years (21%), 51–60 years (7%), and ≤65 years (4%). A large proportion held a degree or master's qualification (59%), while 22% had completed pre-university education, 18% completed primary/high school, and only 1% had no formal education.

Most participants (99%) had heard of the thyroid, and 77% correctly identified it as a butterfly-shaped gland in the neck. About 73% recognized hypothyroidism as decreased hormone secretion, while 75% identified hyperthyroidism as increased secretion. Insufficient iodine intake (35%), family history (12%), and smoking (10%) were reported as risk factors, with 34% selecting all. A large majority (80%) believed thyroid disorders are common in India, and 71% felt they are more prevalent in women. However, awareness of complications was limited—only 40% linked hypothyroidism with depression and 39% associated thyroid disease with heart disease. Symptom recognition was moderate, with 68% identifying signs of hypothyroidism (constipation, hair loss, weight gain) and 62% identifying signs of hyperthyroidism (weight loss, sweating, diarrhoea). Misconceptions persisted, as 46% believed medications stimulate the thyroid, while only 24% correctly stated they replace and normalize hormone levels.

Among participants, 61% agreed and 14% strongly agreed that thyroid disorders can occur during pregnancy, while 12% were neutral and 13% disagreed. More than half (56%) agreed and 17% strongly agreed that thyroid dysfunction may cause irregular menstruation. Regarding treatment, 54% agreed and 39% strongly agreed that thyroid problems are treatable. Half (50%) believed alternative therapies such as yoga, ayurveda, unani, and siddha could help, though 15% disagreed and 6% strongly disagreed. A majority (74%) supported frequent thyroid testing after age 35, while 20% disagreed. Misconceptions were noted, as

44% agreed and 7% strongly agreed that iodized salt alone can treat thyroid deficiency. Most (59% agree, 23% strongly agree) believed diet influences thyroid function. Opinions were divided on medication use in pregnancy, with 72% (46% agree, 26% strongly agree) supporting discontinuation of thyroid drugs during pregnancy, while 18% disagreed.

Regarding practices, most participants (90%) felt thyroid treatment should begin only after consulting a physician, and over half (51%) preferred visiting an endocrinologist for symptoms, followed by primary care (37%). Physicians were the main source of information (68%), though some relied on Google (17%) or social media (5%). Nearly half (47%) believed medication is the only cure, while others cited surgery (13%), radiation (14%), or all methods (19%). The majority (76%) also acknowledged potential side effects of thyroid treatments.

Statistical analysis revealed significant associations: gender was significantly related to both knowledge ($p < 0.00001$) and attitude ($p = 0.016$), with males demonstrating better knowledge and more positive attitudes. Age showed a strong association with knowledge ($p = 0.000066$), with younger adults scoring higher, while education level showed no significant association with either knowledge ($p = 0.18$) or attitude ($p = 0.45$).

DISCUSSION

Thyroid diseases are among the commonest endocrine disorder worldwide. This community based study was conducted on general population of Mangalore in both male and females to evaluate the knowledge, attitude and practice on thyroid disorder. Publics should be educated on medical terms like “Thyroid”, “Hypothyroidism”, “Hyperthyroidism” as these terms are loosely used by peoples. The dietary intake as well as lifestyle plays a huge role in overall wellness.[3] And also peoples should be educated on the various symptoms and risk factors of thyroid disorders. Our questionnaire showed some similarities with studies conducted by Anas H A *et al,*[13] Rahul A *et al,*[14] Kannan S *et al*[16] and Savitha K *et al.*[6] We also included questions about the causes, risk factors, treatment and awareness of thyroid disorder in daily life and translated the structured questionnaire to local language and English similar to study done by Savitha K *et al*.[6]

During the study period, the total number of participants was 206 among which 78(38%) were males and 128(62%) were females. The participants were classified into 5 age groups; most of them were in the 18-30 years old group, and counting 80(39%). Among only 27.18%

of the participants having good knowledge compare to others. Our results were found to being consistent with a previously conducted study in Saudi Arabia by Atheer MD *et al*[1] where 93.4% of the participants having good knowledge towards thyroid disorder. Majority of the samples having good knowledge (69.6%), positive attitude (58.67%) were Degree/ Master degree qualified (p value <0.05). Hence highly educated participants were having good knowledge and attitude regarding thyroid disorder. This finding was consistent with many studies.[4,5,6]

In our study, most of the participants were having good knowledge of signs and symptoms of hypothyroidism as weight gain, hair loss and constipation (68%) and hyperthyroidism as weight loss, excess sweating and diarrhea. This result was consistent with the study conducted in Makkah by Alhazmi AA *et al*[4] where most of the had correct knowledge regarding the signs and symptoms of hypothyroidism and hyperthyroidism (90.96%). Our results shows among the participants, 24(12%) believed family history of thyroid disorder could increase the risk of having the disease, 20(10%) smoking and 73(35%) believed insufficient iodine intake could increase the risk of having thyroid disorder. This result was consistent with the study conducted by Savitha K *et al*[6] where 57% among the participants knew that smoking, insufficient iodine intake increase the risk of having thyroid disorder.

In our survey population, most of the male participants (58.92%) had good knowledge while only 41.07% of the female participants having good knowledge towards thyroid disorder. Our results were found to be inconsistent with a previously conducted study by Mirghani H *et al*.[5] where 61.2% of the females and 41.5% of the male participants had good knowledge towards thyroid disorder. Our findings show that almost 70% of the participants agreed that hyperthyroidism or hypothyroidism occur during pregnancy and 73% participants agreed that thyroid dysfunction causes abnormal menstruation. This finding was consistent with many studies.[1,4,6,16]

Current study showed that almost 74% among the participants agreed that over the age of 35 all should be tested for thyroid disorder frequently. This finding was consistent with other studies conducted by Kannan S *et al*.[16] In our study the majority of the participants had negative attitude towards thyroid disorder. Contradictory findings were found in a study conducted in Moradabad district by Rahul A *et al*[14] where majority of the participants in there research had a positive attitude towards thyroid disorder. In our study population 90% of the participants agreed that treatment for thyroid disorders should be initiated after

consultation with a physician. And 68% among the participants affirmed the need to consult a physician to obtain information about thyroid disorder. This finding was similar with another study conducted in Makkah by Alhazmi AA *et al*.[4]

CONCLUSION

Thyroid is the most common chronic condition globally. People's need to be educated that apart from iodine deficiency there are other immunological causes resulting in thyroid disorder and lot of factors contributing to lack of knowledge among peoples. Launching targeted awareness campaigns focusing on groups at the highest risk and with the lowest level of awareness. Such campaigns can help to limit the detrimental effects of thyroid diseases and promote early detection and treatment.

A 25 item KAP questionnaire was framed having 12 knowledge questions, 8 attitude questions and 5 practice questions about thyroid disorder. Better knowledge and understanding of the thyroid disorder will encourage publics to be more compliant with medications, risk factors etc., and follow up regularly and spread correct facts to their relatives and friends. According to the survey findings, there is a lack of or an unsatisfactory level of knowledge among the general people regarding the risk factors, medication, function, causes of thyroid illness and prevention of thyroid diseases. Hence the management of the disorder should focus not only medications and risk factors but also on educating the publics on the same. To this end, we recommend that future studies be conducted with even larger samples to develop clear and decisive public health strategies that can be implemented immediately.

ACKNOWLEDGEMENT

Our profound gratitude extends to our esteemed institution and our respected principal Dr. A R Shabaraya, Srinivas college of Pharmacy, Mangalore for providing the opportunity that facilitated the successful completion of this project.

REFERENCES

1. Atheer MD, Abdulrahman IS. Survey of awareness of thyroid disorders among the Riyadh population, Central Region of Saudi Arabia. Egypt J Hosp Med., 2018; 72(2): 4039-44.
2. Alhazmi RA, Alovaid AM, Althunayyan SM, Syed W, Rawi MB. A cross-sectional assessment of knowledge awareness of risk factors, and perceptions of thyroid disease

(TD) among adults living in Saudi Arabia- A community-based study. Public Health Front, 2022; 1-10.

3. Soon TK, Ting PW. Thyroid disease and diet control. JNutrDisord Ther., 2018; 8: 1.
4. Alhazmi AA, Alkhaldi BA, Alhazmi RA, Alzahrani AM, Damanhouri NK. A cross-sectional study to evaluate knowledge, attitude and practice among Saudi patients with hypothyroidism in Makkah. IJMDC., 2020; 4(3): 600-67.
5. Mirghani H, Alwakeel AA, Alquayr SM, Alanazi T, Madshush AM, Alali HA *et al*., Knowledge assessment regarding the differences between hyperthyroidism and hyperthyroidism among Saudi Arabia's adult population. Cureus., 2023; 15(4): 1-14.
6. Savitha K, Kata S, Chinthagani O, Gollapalli R. Assessment of knowledge, awareness, practices and misconceptions among hypothyroid and hyperthyroid patients. Int J Res Med Sci., 2023; 11 (8): 2863-69.
7. Abdiaziz AA, Ebar MH. Prevalence of Thyroid disorders among Somali women of childbearing age at Mogadishu Somalia. JDDT., 2023; 13(8): 29-31.
8. Mezzomo TR, Nadal J. Effect of nutrients and dietary substances on thyroid functionand hypothyroidism. Food Nutr Res., 2016; 11(2): 427-43.
9. Azizi F, Mehran L, Hosseinpanah F, Delshad H, Amouzegar A. Primodialand primary prevention of thyroid disease. Int J Endocrinol Metab., 2017; 15(4): 57871.
10. Dednam M. The interpretation and management of thyroid disorder. JEMDSA, 2015; 20(2): 4-9.
11. Jacqueline J, Antonio CB, Andrew JB, Kenneth DB, Anne RC, Francesco SC *et al*., Guidelines for the treatment of hypothyroidism: Prepared by the American Thyroid Association Task Force on thyroid hormone replacement. Thyroid, 2014; 24(12):1670-1751.
12. Shailesh R, Suraj S, Khatri AK, Sanjay D, Sathish S. Assessment of knowledge and awareness regarding thyroid disorders among women of a cosmopolitan city of central India. Nat J Community Med., 2016; 7(3): 219-22.
13. Anas HA, Zain B, Karam A, Diala AS, Yazan M, Nader A. Knowledge, attitude, and practice toward thyroid disorders among Jordanians. Res Sq., 2023; 1-24.
14. Rahul A, Piyush M, Anurag V, Jyothi T. Evaluation of knowledge, attitude and practice towards hypothyroidism among population in Moradabad District: A Pilot Study. Int J Pharm Investigation, 2023; 13(2): 335-43.
15. Samer A, Muteb EA, Moahmmed FBM, Qusai TA, Fahed HA, Naif KA *et al*., A Cross-sectional survey to assess knowledge, attitude and practices in patients with

hypothyroidism in Riyadh, Saudi Arabia. Int J Pharm Res Allied Sci., 2019; 8(4): 153- 160.

16. Kannan S, Mukundan L, Mahadevan S, Sathya A, Kumaravel V, Bhat RV *et al*., Knowledge, awareness and practices (KAP) among patients with hypothyroidism attending endocrine clinics of community hospitals in Chennai. Thyroid Research and Practice, 2024; 20(2): 64-68.
17. Ashutosh S, Beena S, Nisha PM, Sharma VK, Nidhi V, Singh CP. Knowledge, awareness and practices (KAP) among patients with thyroid swelling attending cytology clinic in a medical college, Meerut. Sch J App Med Sci., 2013; 1(6): 793-5.
18. Vimala DP, Sharumathi SM, Shanmuga SR. Assessment of knowledge, attitude and practice regardinghypothyroidism amonginfertile women with hypothyroidism. AsianJ Pharm Clin Res., 2020; 13(9): 68-72.
19. Swami PA, Saravana RT, Manohar BS. Knowledge, attitude, practices (KAP) of metabolic disorders in South Indian population. AJPRHC, 2021; 13(1): 4-16.
20. Dana L, Sargun S, Maria B. Thyroid diet and alternative approaches. J Clin Endocrinol Metab, 2022; 107(11): 2973-81.
21. Mark PJV, Michael WGT. Epidemiology and prevention of clinical and subclinical hypothyroidism. Thyroid, 2002; 12(10): 839-47.
22. Ranya G, Raghad B, Salwan E, HayaA, MurujA, Ragad A *et al*., Assessment of quality of life among patients with primary hypothyroidism: A case-control study. Cureus, 2022; 14(10): 1-8.
23. Unnikrishnan AG, Menon UV. Thyroid disorders in India: An epidemiologyperspective. Indian J Endocr Metab, 2011; 15: S78-81.
24. Kumar P, Khandelwal D, Mittal S, Dutta D, Kalra S, Katiyar P *et al*., Knowledge, awareness, practices and adherence to treatment of patients with primaryhypothyroidism in Delhi. Indian J Endocr Metab, 2017; 21: 429-33.
25. Goel A, Shivaprasad C, Kolly A, Pulikkal AA, Boppana R, Dwarakanath CS. Frequent occurrence of faultypractices, misconceptions and lack of knowledge among hypothyroid patients. JCDR, 2017; 11(7): 15-20.