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Knowledge, attitude, and practice among Bangladeshi adults with hypothyroidism

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Abstract

Background: Treatment success depends on the knowledge, attitude, and practice (KAP) of patients with hypothyroidism. Comprehensive data on KAP regarding hypothyroidism was not adequately evaluated among Bangladeshi people.

Objectives: To evaluate KAP among Bangladeshi adults with hypothyroidism.

Methods: This cross-sectional questionnaire based KAP survey was done between June 2022 and March 2023 among 527 eligible adults [Age (years): 35.1±10.5, mean±SD; m/f: 14.6%/85.4%]. Baseline characteristics and responses to 27 questions and statements of KAP were collected from participants in government hospitals and doctors' private chambers from six districts. A specific mark was given for each response. The average marks obtained by each participant were categorized into three tertiles for each domain. The baseline characteristics were compared across the tertiles.

Results: Nearly 34.5% of the participants correctly answered the 14 questions of the knowledge domain. About 78.9% agreed with all five statements of the attitude domain. Almost 45.7% regularly followed all eight good practices in their disease management. Those with negative attitudes had a lower frequency of individuals under 30 years (adjusted standardized residual, ASR = -3.2) and a higher frequency of those over 50 years (ASR = +3.4). For those with education below the secondary level, the frequency of negative attitudes (ASR = +6.0) was higher, while the frequency of positive attitudes (ASR = -4.1) was lower. The frequency of older people (>50 years, ASR = -3.4) and those with lower education (below secondary, ASR = -4.3) was lower, but the disease duration was shorter (<1 year, ASR = +3.1) among those with good practice.

Conclusions: Positive attitudes towards hypothyroidism in Bangladeshi adults do not translate to sufficient knowledge and effective management of the disease. Those with older age, lower educational attainment, and longer duration of disease require more attention to optimize hypothyroidism management. *[J Assoc Clin Endocrinol Diabetol Bangladesh,* July 2025;4(2)*: 57-65]*

Keywords: Knowledge, Attitude, Practice, Hypothyroidism, Levothyroxine

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Introduction

Hypothyroidism is a common and manageable hormonal condition. Levothyroxine is a widely available and cost-effective treatment for hypothyroidism. However, successful treatment depends on patients adhering to their prescribed medication regimen.[1] A recent study in Bangladesh found that nearly half of the 2,641 hypothyroid patients examined were not receiving

adequate levothyroxine replacement therapy.[2] Furthermore, many Bangladeshi specialists are reportedly using inappropriate diagnostic tests for hypothyroidism and subclinical hypothyroidism.[3] This underscores the need for improved practices among patients and healthcare providers.

There is no nationwide published study on the prevalence of hypothyroidism in Bangladesh. A study conducted in a Union of the Khulna district among school students and residents of nearby areas revealed a prevalence of hypothyroidism and subclinical hypothyroidism of nearly 5% and 7%, respectively.[4] Thus, the burden of hypothyroidism is substantial in Bangladesh. Effective treatment requires a thorough understanding of the disease. However, knowledge about hypothyroidism is often inadequate. Besides, misconceptions are prevalent among Bangladeshi women, who typically rely on neighbors for information.[5] Overall, knowledge and practices related to the disease are poor among reproductive-aged women.[6] While women are more frequently affected, existing studies have not examined postmenopausal women or men. Comprehensive data on knowledge, attitudes, and practices (KAP) regarding hypothyroidism in both sexes is lacking. A better understanding of hypothyroidism, measured through KAP scores, can enhance treatment outcomes.[7]

A KAP survey provides access to both quantitative and qualitative information. The information generated through KAP studies can inform strategies to enhance behavioral and attitudinal changes rooted in knowledge levels and perceptions regarding preventive practices.[8,9] Therefore, this study adopted the KAP approach to gather insights into what is known, believed, and done about hypothyroidism among Bangladeshi individuals with the condition.

Methods

The present KAP study was conducted in six districts (Rangpur, Chattogram, Noakhali, Dhaka, Munsiganjo, and Bogura) across three administrative divisions in Bangladesh, in government hospitals and doctors' private chambers, among hypothyroid patients who had been taking levothyroxine for at least 6 months. The survey was tested in a pilot study with 20 participants. Based on feedback from the pilot study, we revised the questionnaire and finalized it with 27 significant questions and statements. The questionnaire consisted of four parts: basic participant information, thyroid knowledge (14 questions), attitudes (5 statements), and prevention practices (8 statements). Patients aged 18 and above, irrespective of gender, who could read and understand the first language (Bangla) were included. The study was conducted following the principles outlined in the Declaration of Helsinki. Participants with known dementia, illiteracy, and severe illness were excluded from the study. At the outset, informed consent was obtained from each participant, and the option to withdraw from the survey was available at any time. The questionnaire was supplied to each patient, and they were asked to put a tick mark next to the option with which they agreed the most. This cross-sectional questionnaire based KAP survey was done between June 2022 and March 2023. A total of 527 eligible adults participated in this study.

In the knowledge domain, one mark was given for a correct response, one mark was deducted for a negative answer, and 'zero' was given for an unknown answer. The total marks of 14 questions were divided by the number of total responded questions. Then, we divided the study participants into three tertiles based on their level of knowledge: lower, average, and higher. Five-point Likert scale items assessed the general attitude toward thyroid disease, ranging from "strongly disagree" (-2) to "strongly agree" (+2). Again, we divided our study participants into three groups by the tertile of total attitude scores. We referred them to positive, neutral, and negative attitudes. Finally, the regular correct practice was given a mark of '+1', the irregular correct practice was given a mark of 0, and the wrong practice was given a mark of '-1'. The total scores were divided by the number of responded statements to yield a mean practice score. We categorized the participants' practice as good, average, or poor based on the tertile of their mean practice score.

The adequacy of thyroid hormone replacement was assessed based on the existing TSH level in µUI/ml with laboratory reference levels to determine over-replacement, adequate replacement, and under-replacement.

We analyzed our data using Statistical Package for the Social Sciences (SPSS) software version 25.0. Data were expressed in frequency (%). The association between baseline characteristics and KAP categories was tested using Pearson's chi-squared test. The significant associations were further evaluated by checking the adjusted standardized residuals (ASR). The cell was considered statistically different if the residual was greater than +3 or less than -3. Any p-values below 0.05 were considered statistically significant.

Result

Among the 527 participants, 85.4% were females. The mean age was 35 years (range: 18-65). The median duration of hypothyroidism was 2 years (IQR: 7 months to 4 years). The median levothyroxine dose was 50 μ g/day (IQR: 50 to 100 μg/day).

Among 14 questions, the highest correct response rate was for questions regarding thyroid specialists (89%). The other highest correct responses were the location of the thyroid gland (67.9%), weight gain (67.6%), and weakness (58.6%) as symptoms of hypothyroidism. Most of the participants could not identify constipation (83.9%), dry skin (80.6%), cold intolerance (73.1%), etc., as symptoms of hypothyroidism. Most participants were uncertain about the effect of switching to a levothyroxine brand (59.4%), the impact of iodinated salt on disease (52.8%), and the safe consumption of cruciferous vegetables (50.5%). Only one out of three could correctly answer all questions (Table-I).

Table-I: Response of the participants on knowledge domain regarding hypothyroidism (n= 527)

Questions/ statements	Correct	Wrong	Unknown	No response
1. Where is the thyroid gland located?	358 (67.9)	17 (3.2)	152 (28.8)	0 (0.0)
2. What do you mean by 'hypothyroidism?	96 (18.2)	223 (42.3)	204 (38.7)	4 (0.8)
3. Is hypothyroidism a curable disease?	93 (17.6)	171 (32.4)	256 (48.6)	1 (0.2)
4. Who are the actual thyroid specialists?	469 (89.0)	10 (1.9)	45 (8.5)	3 (0.6)
5. Is hypothyroid a contagious disease?	46 (8.7)	229 (43.5)	244 (46.3)	8 (1.5)
6. Can patients with hypothyroidism eat cruciferous vegetables (cabbage, cauliflower, etc.)?	69 (13.1)	178 (33.8)	266 (50.5)	14 (2.7)
7. Does iodinated salt intake completely cure hypothyroidism?	166 (31.5)	77 (14.6)	278 (52.8)	5 (0.9)
8. Can changing the brand of the thyroid drug affect your blood hormone levels?	69 (13.1)	135 (25.6)	313 (59.4)	10 (1.9)
9. Hypothyroidism may cause weight gain	356 (67.6)	171 (32.4)	0 (0.0)	0 (0.0)
10. Hypothyroidism may cause weakness	309 (58.6)	218 (41.4)	0 (0.0)	0 (0.0)
11. Hypothyroidism may cause increased sleepiness	181 (34.3)	346 (65.7)	0 (0.0)	0 (0.0)
12. Hypothyroidism may cause cold intolerance	142 (26.9)	385 (73.1)	0 (0.0)	0 (0.0)
13. Hypothyroidism may cause dry skin	102 (19.4)	425 (80.6)	0 (0.0)	0 (0.0)
14. Hypothyroidism may cause constipation	85 (16.1)	442 (83.9)	0 (0.0)	0 (0.0)
Total	**34.5%**	**41.0%**	**23.9%**	**0.6%**

Data were expressed in frequency (%)

Table-II: Association between knowledge categories and the baseline characteristics among adults with hypothyroidism

Variables		Lower	Middle	Higher	p
Number		206	164	157	
Age groups (years)	[527]				
<30	188 (35.7)	69 (33.5)	58 (35.4)	61 (38.9)	
30 – 50	291 (55.2)	120 (58.3)	87 (53.0)	84 (53.5)	0.569
>50	48 (9.1)	17 (8.3)	19 (11.6)	12 (7.6)	
Sex	[527]				
Male	77 (14.6)	36 (17.5)	23 (14.0)	18 (11.5)	0.266
Female	450 (85.4)	170 (82.5)	141 (86.0)	139 (88.5)	
Educational status	[499]	[197]	[150]	[152]	
Below secondary	119 (23.8)	42 (21.3)	33 (22.0)	44 (28.9)	
Secondary to higher secondary	228 (45.7)	87 (44.2)	77 (51.3)	64 (42.1)	0.210
Above higher secondary	152 (30.5)	68 (34.5)	40 (26.7)	44 (28.9)	
Disease duration (years)	[527]				
<1	168 (31.9)	78 (37.9)	47 (28.7)	43 (27.4)	
1 – 5	278 (52.8)	103 (50.0)	95 (57.9)	80 (51.0)	**0.028**
>5	81 (15.4)	25 (12.1)	22 (13.4)	34 (21.7)	
Dose category (µg/day)	[515]	[200]	[161]	[154]	
Up to 50	298 (57.9)	113 (56.5)	100 (62.1)	85 (55.2)	
>50 – 100	154 (29.9)	62 (31.0)	43 (26.7)	49 (31.8)	0.772
>100	63 (12.2)	25 (12.5)	18 (11.2)	20 (13.0)	
Levothyroxine replacement status	[490]	[188]	[148]	[154]	
Over replacement	54 (11.0)	20 (10.6)	15 (10.1)	19 (12.3)	
Adequate replacement	269 (54.9)	110 (58.5)	75 (50.7)	84 (54.5)	0.549
Under replacement	167 (34.1)	58 (30.9)	58 (39.2)	51 (33.1)	

[Available number], within parentheses are percentages over the column total
Pearson's chi-squared test was done

Table-III: Attitudes towards hypothyroidism among the study participants (n=527)

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. Women should be tested for thyroid abnormality more than men	121 (23.0)	291 (55.2)	98 (18.6)	13 (2.5)	4 (0.8)
2. Blood-related relatives of patients with hypothyroidism should be tested for thyroid abnormality	82 (15.6)	304 (57.7)	113 (21.4)	26 (4.9)	2 (0.4)
3. Appropriate treatment facilitates marriage and child-bearing in a patient with hypothyroidism	114 (21.6)	272 (51.6)	120 (22.8)	16 (3.0)	5 (0.9)
4. The thyroid pill can improve your different physical and mental symptoms	120 (22.8)	301 (57.1)	87 (16.5)	16 (3.0)	3 (0.6)
5. Patients with hypothyroidism should know this disease well	187 (35.5)	288 (54.6)	43 (8.2)	5 (0.9)	4 (0.8)
Total	**23.7%**	**55.2%**	**17.5%**	**2.9%**	**0.7%**

Data were expressed in frequency (%)

Table-IV: Association between attitude categories and the baseline characteristics of the study participants (n= 527)

Variables		Negative	Neutral	Positive	p
Number		206	164	157	
Age groups (years)	[527]				
<30		79 (43.6)	58 (37.2)	51 (26.8)	
30 – 50		94 (51.9)	86 (55.1)	111 (58.4)	**0.001**
>50		8 (4.4)	12 (7.7)	28 (14.7)	
Sex	[527]				
Male		24 (13.3)	21 (13.5)	32 (16.8)	0.552
Female		157 (86.7)	135 (86.5)	158 (83.2)	
Educational status	[499]	[175]	[149]	[175]	
Below secondary		23 (13.1)	27 (18.1)	69 (39.4)	
Secondary to higher secondary		86 (49.1)	76 (51.0)	66 (37.7)	**<0.001**
Above higher secondary		66 (37.7)	46 (30.9)	22.9 (175)	
Disease duration (years)	[527]				
<1		54 (29.8)	54 (34.6)	60 (31.6)	
1 – 5		100 (55.2)	81 (51.9)	97 (51.1)	0.766
>5		27 (14.9)	21 (13.5)	33 (17.4)	
Dose category (µg/day)	[515]	[175]	[154]	[186]	
Up to 50		102 (58.3)	88 (57.1)	108 (58.1)	
>50 – 100		53 (30.3)	52 (33.8)	49 (26.3)	0.327
>100		20 (11.4)	14 (9.1)	29 (15.6)	
Levothyroxine replacement status	[490]	[170]	[147]	[173]	
Over replacement		17 (10.0)	14 (9.5)	23 (13.3)	
Adequate replacement		91 (53.5)	85 (57.8)	93 (53.8)	0.729
Under replacement		62 (36.5)	48 (32.7)	57 (32.9)	

[Available number], within parentheses are percentages over the column total
Pearson's chi-squared test was done

Among baseline characteristics, only the duration of hypothyroidism had a significant association with the knowledge domain. However, none of the cells' ASRs differed significantly (Table-II).

Most participants agreed or strongly agreed (~79%) with all five statements of the attitude domain. Less than 4% disagreed with all statements. More than 20% of the study participants were neutral to the requirement of thyroid tests among relatives and had an everyday marital life with adequate treatment (Table-III).

Age groups and educational status had significant associations with the attitude domain. Those with negative attitudes had a lower frequency of individuals under 30 years old (ASR = -3.2) and a higher frequency of those over 50 years old (ASR = +3.4). For those with education below the secondary level, the frequency of negative attitudes (ASR= +6.0) was higher, and the frequency of positive attitudes (ASR= -4.1) was lower (Table-IV).

Around 46% of the participants regularly followed good practices in their disease management. Thirty-eight percent of people did not follow the timing of levothyroxine with meals regularly. Nearly 40% of the participants simultaneously took drugs that interfere with levothyroxine absorption. About 8.3%, 3.6%, and 14.6% stopped levothyroxine once, twice, thrice, or more, assuming its permanent efficacy. Alternative treatments, including homeopathy, ayurveda, kabiraji, and others, were tried by 2.5%, 1.1%, 0.4%, and 0.8% of the participants, respectively. More than 3 out of 4 participants regularly visited their doctors for their hypothyroidism (Table-V).

Table-V: Practices towards hypothyroidism among the study participants (n= 527)

Questions	Always/Yes	Sometimes/Irregular	Never/No	No response
1. Do you check the expiry date before buying your thyroid pill?	315 (59.8)	107 (20.3)	103 (19.5)	2 (0.4)
2. Are you consistently storing your thyroid pill in a cool, dry, dark place?	442 (83.9)	7 (1.3)	72 (13.7)	6 (1.1)
3. Do you take the thyroid pill 30-60 minutes before breakfast or 3 hours after the last meal of the day?	315 (59.8)	12 (2.3)	200 (38.0)	0 (0.0)
4. Do you take calcium, iron, or antacids simultaneously with your thyroid medication?	159 (30.2)	72 (13.7)	292 (55.4)	4 (0.8)
5. If you skip a thyroid pill, do you take it later?	171 (32.4)	172 (32.6)	179 (34.0)	5 (0.9)
6. Have you ever thought your thyroid problem was fixed and stopped taking your medicine?	(≥2) 96 (18.2)	(Once) 44 (8.3)	381 (72.3)	6 (1.1)
7. Have you ever tried any alternative medicine other than the prescribed thyroid pill?	25 (4.8)		497 (93.3)	5 (0.9)
8. Do you attend your doctor's appointments on the schedule as recommended?	404 (76.7)	63 (12.0)	53 (10.1)	7 (1.3)
Total	**45.7%**	**11.3%**	**42.2%**	**0.8%**

Data were expressed in frequency (%)

Table-VI: Association between practice categories and the baseline characteristics of the study participants (n= 527)

Variables		Good	Average	Poor	p
Number		169	202	156	
Age groups (years)	[527]				
<30		46 (27.2)	77 (38.1)	65 (41.7)	
30 – 50		99 (58.6)	105 (52.0)	87 (55.8)	**0.001**
>50		24 (14.2)	20 (9.9)	4 (2.6)	
Sex					
Male		26 (15.4)	30 (14.9)	21 (13.5)	0.880
Female		143 (84.6)	172 (85.1)	135 (86.5)	
Educational status	[499]	[153]	[196]	[150]	
Below secondary		62 (40.5)	40 (20.4)	17 (11.3)	
Secondary to higher secondary		56 (36.6)	92 (46.9)	80 (53.3)	**<0.001**
Above higher secondary		35 (22.9)	64 (32.7)	53 (35.3)	
Disease duration (years)	[527]				
<1		41 (24.3)	62 (30.7)	65 (41.7)	
1 – 5		99 (58.6)	104 (51.5)	75 (48.1)	**0.009**
>5		29 (17.2)	36 (17.8)	16 (10.3)	
Dose category (µg/day)	[515]	[162]	[200]	[153]	
Up to 50		105 (64.8)	108 (54.0)	85 (55.6)	
>50 – 100		32 (19.8)	69 (34.5)	53 (34.6)	**0.015**
>100		25 (15.4)	23 (11.5)	15 (9.8)	
Levothyroxine replacement status	[490]	[148]	[194]	[148]	
Over replacement		17 (11.5)	17 (8.8)	20 (13.5)	
Adequate replacement		79 (53.4)	111 (57.2)	79 (53.4)	0.705
Under replacement		52 (35.1)	66 (34.0)	49 (33.1)	

[Available number], within parentheses are percentages over the column total
Pearson's chi-squared test was done

Age group, educational status, duration of hypothyroidism, and dose of levothyroxine were significantly associated with the practice of the patients. The frequency of older people (>50 years, ASR = -3.4) and those with lower education (below secondary, ASR = -4.3) was lower, but the disease duration was shorter (<1 year, ASR = +3.1) among those with good practice. Among those with poor practice, the frequency of participants taking a daily dose of levothyroxine between 51 and 100 µg was lower (ASR= -3.4) (Table-VI).

Discussion

This KAP study among Bangladeshi adults with hypothyroidism revealed that while four-fifths held positive attitudes about the condition, only one-third possessed adequate knowledge, and half consistently practiced effective management. Older age (over 50 years) and lower educational levels (below secondary) were associated with negative attitudes; however, these were less common among individuals who employed good management practices. Individuals with shorter disease durations (<1 year) and moderate levothyroxine dosages (51–100 µg/day) exhibited better self-management. Sex and levothyroxine-replacement status had no significant association with KAP.

The finding that only one-third of participants demonstrated good knowledge about hypothyroidism is concerning. This highlights a significant gap in understanding the condition's causes, symptoms, complications, and management. A similar finding was observed in studies conducted in countries like the UK, India, Iraq, Saudi Arabia, etc.[10-13] This knowledge deficit could lead to poor adherence to treatment and increased risk of complications.[14] Public health initiatives focused on raising awareness and improving education about hypothyroidism are urgently needed.

The overwhelmingly positive attitude towards hypothyroidism, with four-fifths of participants expressing positive sentiments, is an encouraging finding. Others also reported such positive attitudes towards hypothyroidism.[11-13] This suggests a willingness to treat and manage the condition. However, positive attitudes alone are insufficient without adequate knowledge and practice, as shown during COVID-19 in Bangladesh.[15]

A crucial finding is the association between older age and lower education levels with negative attitudes. This suggests that targeted interventions should be developed to address the specific needs of these vulnerable groups. Older individuals may face challenges in accessing and understanding health information, while lower education levels can limit comprehension of complex medical concepts.[16] Conversely, the inverse association of these factors with good practice indicates that older and less educated individuals, when properly informed, can adhere to treatment regimens. A study conducted in Saudi Arabia found that individuals aged 45 years and above had poor knowledge, extreme levels of concern, and moderate levels of practice. In contrast, an Indian study showed higher knowledge and practice among the younger age group (31–40 years).[11] Furthermore, a higher level of education was associated with higher levels of KAP towards hypothyroidism.[11,12]

The observation that half of the participants demonstrated good practices related to hypothyroidism management is not sufficiently encouraging. This also implies that a significant portion of the population struggles with proper self-care. Many of our patients could not identify the symptoms of hypothyroidism, which might be related to poor adherence.[10] Although we have not studied, previous studies showed a lack of interest in knowing hypothyroidism management and the presence of depression as contributing factors to poor treatment adherence.1[1,12]

The association between shorter disease duration (<1 year) and adherence to good practices suggests that newly diagnosed individuals may be more receptive to medical advice and more diligent in following treatment plans.[17] This highlights the importance of providing comprehensive education and support during the initial stages of diagnosis. However, the literature has shown conflicting findings regarding disease duration and adherence rates.[17-19]

The inverse association between levothyroxine doses of 51-100 µg/day and poor thyroid practice is noteworthy. This could indicate that individuals in this dosage range may have received more thorough medical guidance or have a better understanding of their treatment regimen. However, we could not find any article that directly compares our findings. Further investigation is needed to explore the underlying mechanisms.

One limitation of this study is the limited number of participants from across the country, which limits the generalizability of the findings. We did not include the histories of physician factors, drug affordability, work schedules, lifestyles, assisted medication taking, receipt of thyroid-specific knowledge, etc. Besides, some data were missing.

Conclusions

Despite widespread positive attitudes, significant gaps exist in the knowledge and management practices of Bangladeshi adults with hypothyroidism. Older and less educated individuals are particularly vulnerable to negative attitudes and poor management, emphasizing the need for targeted interventions. Conversely, shorter disease duration and moderate levothyroxine dosages are associated with good management, which warrants further exploration. Addressing these issues through comprehensive interventions and improved healthcare communication is essential for enhancing the management of hypothyroidism and improving the quality of life for affected individuals in Bangladesh.

Conflict of interest

The authors have no conflicts of interest to disclose.

Financial Disclosure

This study did not receive any fund.

Data Availability

Any queries regarding this study should be directed to the corresponding author, and supporting data are available from the corresponding author upon reasonable request.

Ethical Approval and Consent to Participate

All procedures performed in this study involving human participants were following the ethical standards and with the 1964 Helsinki Declaration. Informed written consent was obtained from each of the participants included in the study.

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References

1. Taylor PN, Medici MM, Hubalewska-Dydejczyk A, Boelaert K. Hypothyroidism. Lancet 2024;404(10460):1347-64. DOI: 10.1016/S0140-6736(24)01614-3.
2. Kamrul-Hasan ABM, Mustari M, Hannan MA, Hoque MA, Chowdhury EUR, Kabir ML, et al. Demographic and clinical characteristics of patients with primary hypothyroidism and adequacy of levothyroxine replacement therapy in them: A nationwide study in Bangladesh. Bangladesh J Endocrinol Metab 2024;3(3):86-92. DOI: 10.4103/bjem.bjem_17_24.
3. Selim S, Mustari M, Khan TA, Kamrul-Hasan A. Approach to management of hypo and hyperthyroidism in Bangladesh: A nationwide physicians' perspective survey. Front Endocrinol (Lausanne) 2024;14:1322335. DOI: 10.3389/fendo.2023.1322335.
4. Paul AK, Miah SR, Mamun AA, Islam S. Thyroid disorders in Khulna district: A community based study. Bangladesh Med Res Counc Bull 2006;32(3):66-71. PMID: 17867270.
5. Rani TA, Zaman MO, Islam MT. Knowledge, attitude, and practices towards thyroid risk of women: A study in Barishal. IOSR J Humanit Soc Sci 2020;25(7):5-14. DOI: 10.9790/0837-2507060514.
6. Morshed MS, Hossain MF, Mallick S, Kabir ML, Abedin M, Kabir MA, et al. Knowledge, attitude, and practice of reproductive aged Bangladeshi adult females with hypothyroidism. J Rangpur Med Coll 2023;8(1):11-19. DOI: 10.3329/jrpmc.v8i1.65032.
7. Maharjan S, Chhetri HP. Assessment of interventions by pharmacist in improving knowledge, attitude and practice towards hypothyroidism among the patients attending at an endocrine clinic in Nepal. Indian J Pharm Pract 2015;8(2):67-71. DOI: 10.5530/ijopp.8.2.4.
8. Du Monde M. The KAP survey model (knowledge, attitudes, & practices). USAID: Washington, DC, USA. 2011. Available at: https://www.medecinsdumonde.org/app/uploads/2022/04/47-the-kap-survey-model-knowledge-attitude-practices.pdf.
9. Goutille F, Crini V, Jullien P. Knowledge, attitudes and practices for risk education [Multimédia multisupport]: How to implement KAP surveys: Guideline for KAP survey manager. Available at: https://www.hi-us.org/sn_uploads/document/Landmines_How_to_implement_KAP_Surveys.pdf.
10. Dew R, King K, Okosieme OE, Pearce S, Donovan G, Taylor P, et al. Patients' attitudes and perceptions towards treatment of hypothyroidism in general practice: an in-depth qualitative interview study. BJGP Open 2017;1(2):bjgpopen17X100977. DOI: 10.3399/bjgpopen17X100977.
11. Sethi B, Khandelwal B, Vyas U. A cross-sectional survey to assess knowledge, attitude, and practices in patients with hypothyroidism in India. Thyroid Res Pract 2018;15(1):15-22. DOI: 10.4103/trp.trp_25_17.
12. Ali ZH, Abdulridha MK, Alzajaji QB. Screening factors affecting proper levothyroxine therapy among patients with primary hypothyroidism: A cross-sectional study. J Med Life 2024;17(2):177-87. DOI: 10.25122/jml-2023-0387.
13. 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):660–667. DOI: 10.24911/IJMDC.51-1575930154.
14. Dewalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP. Literacy and health outcomes: A systematic review of the literature. J Gen Intern Med. 2004;19(12):1228-39. DOI: 10.1111/j.1525-1497.2004.40153.x.
15. Razu SR, Nishu NA, Rabbi MF, Talukder A, Ward PR. Knowledge, attitudes, and practices concerning COVID-19 in Bangladesh: A qualitative study of patients with chronic illnesses. Front Public Health 2021;9:628623. DOI: 10.3389/fpubh.2021.628623.
16. Coughlin SS, Vernon M, Hatzigeorgiou C, George V. Health literacy, social determinants of health, and disease prevention and control. J Environ Health Sci. 2020;6(1):3061. PMID: 33604453.

17. Shakya Shrestha S , Risal K , Shrestha R , Bhatta RD. Medication adherence to levothyroxine therapy among hypothyroid patients and their clinical outcomes with special reference to thyroid function parameters. Kathmandu Univ Med J (KUMJ) 2018;16(62):129-137. PMID: 30636753.
18. Al Kindi RM, Al Riyami RA, Juma SY, Al Kiyumi MI. Adherence to levothyroxine treatment among patients with hypothyroidism in Oman: A national cross-sectional study. Curr Med Res Opin 2023;39(10):1313-1319. DOI: 10.1080/03007995.2023.2250256.
19. Kumar R, Shaukat F. Adherence to levothyroxine tablet in patients with hypothyroidism. Cureus 2019;11(5):e4624. DOI: 10.7759/cureus.4624.