

Assessment of Knowledge, Attitude and Practices regarding Thyroid Disorders among Patients attending Diabetes, Thyroid and Endocrinology Care Centre, Pokhara

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ABSTRACT

Introduction: Thyroid disorders are amongst the most prevalent medical conditions & the leading causes of morbidity worldwide. Thyroid disorders are believed to be a common health issue in Nepal. Patient's knowledge and awareness about the disease and its treatment is very important for good long-term outcome and compliance in any chronic disease. The general objective of this study is to assess knowledge, attitude and practices among thyroid disorders patients attending Diabetes, Thyroid and Endocrinology Care Centre, Pokhara.

Materials and Methods: A descriptive cross-sectional study design was used to conduct the study using non probability purposive sampling technique. Data was collected by using Structured Interview Schedule and collected data was coded and entered in Statistical Package for the Social Sciences version 16. Descriptive (frequencies and percentages) and inferential statistics (Chi square) was used for data analysis.

Results: The study revealed that majority (62.8%) of the respondents had adequate knowledge. Age, educational status and duration of illness was statistically associated with level of knowledge ($p=0.04, 0.01, 0.01$). Majority (55.5%) of the respondents had negative attitude regarding thyroid disorders. Correlation analysis showed that knowledge of respondents on thyroid disorders was positively correlated with their attitude ($r=0.173, p$ value 0.001).

Conclusion: It was observed that more than half of the respondents had adequate knowledge but had negative attitude regarding thyroid disorders. So, further health awareness programs, educational campaigns should be run to increase the knowledge and create awareness that plays a vital role in care of the patients and treatment adherence.

Keywords: Attitude, Knowledge, Practices, Thyroid disorders

INTRODUCTION

Thyroid dysfunction is a common endocrine disorder affecting about 300 million people worldwide and over half are presumed to be unaware of their condition. Thyroid disorders are amongst the most

prevalent of medical conditions & the leading causes of morbidity worldwide. It is defined as the altered serum thyroid stimulating hormone (TSH)



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level with normal or altered thyroid hormones (free tri-iodothyronine- fT3 and free thyroxine- fT4)¹. Clinical features vary considerably from area to area and are determined principally by the availability of iodine in the diet. Hypothyroidism, the most common cause of pathological hormone deficiency, results due to the insufficient functioning of the thyroid gland to produce thyroid hormone^{2,3}.

Hypothyroidism can be primary (abnormality in thyroid gland itself) or secondary/central (as a result of hypothalamic or pituitary disease). Primary hypothyroidism is associated with the majority of cases (99%) of hypothyroidism. The term sub clinical hypothyroidism is used to define that grade of primary hypothyroidism, in which there is an elevated thyroid-stimulating hormone concentration in the presence of normal serum free thyroxine and triiodothyronine concentrations⁴. Hyperthyroidism is characterized by hyper metabolism and elevated serum levels of free thyroid hormones. Fatigue, lethargy, cold intolerance, constipation are the common features of hypothyroidism whereas enlargement of the thyroid gland and exophthalmos (bulging eyes) are the features of hyperthyroidism. "Globally, prevalence of hypothyroidism is 1-10%" and is one of the common disorders seen in women older than 60 years⁵. In the developed world, the prevalence of hypothyroidism is 4-5%⁶. Forty-two million people in India suffer from thyroid diseases with prevalence ranging from 3.9-5.4%⁷. Thyroid dysfunction is seen as one of the major health problem in Nepal with prevalence of 30% in eastern Nepal, 29% in central Nepal and is 10 times more common in females^{8,9,10,11}.

Thyroid disorders are leading causes of morbidity worldwide which have an impact on health and well-being of an individual, current societal and future health of the nation¹². Globally, thyroid disorders continue to be common yet one of the most under-diagnosed and neglected chronic health conditions¹³.

Many of the studies have shown that respondents

have many misconceptions regarding thyroid disorders. It includes discontinuation of thyroid medicine after one normal test, thyroid medicines cannot be taken during pregnancy, alternative medicines can cure thyroid disorders, iodized salt can cure thyroid disorders^{14,15,16}.

Patient's knowledge and awareness about the disease and its treatment is very important for good long-term outcome and compliance in any chronic disease. Studies have shown the importance of improving patient's knowledge through education to improve therapeutic outcomes and compliance¹⁷. So better knowledge and understanding of thyroid disorder will encourage patients to be more compliant with medications, follow up regularly and spread correct facts to their relatives and friends. Hence management of thyroid disorders should focus not only medications and dose adjustment but also on patient's education.

Prevalence of thyroid dysfunction has been studied in Nepal, but there is a lack of data on the knowledge, attitude and practices among the patients of thyroid disorders. So the research is directed in assessing knowledge, attitude and practices regarding thyroid disorders.

MATERIALS AND METHODS

Descriptive cross sectional study design was adopted to assess knowledge, attitude and practices regarding thyroid disorders among patients. All patient aged 18-70 years, diagnosed with thyroid disorders attending Diabetes, Thyroid and Endocrinology Care Centre, Pokhara and receiving treatment for at least 3 months were included in the study. A total of 400 patients with thyroid disorders were selected from the centre by using non probability purposive sampling technique.

Sample size was calculated using formula $4pq/l^2$ ¹⁸ Taking 50% as prevalence, at 95% confidence interval

$$p=50\%=0.5$$

$$q=1-0.5=0.5$$

$I=5\%=0.05$ (allowable error)

Sample size (n) = $4pq/I^2$
=400

A structured interview schedule was used for data collection which consisted of 29 questionnaires including knowledge, attitude and practices. The questionnaires were prepared by the researcher herself by modifying the questionnaires used in previous studies^{13,15,16,17,20}. The questionnaires were prepared in two languages: English and Nepali. First the questionnaires were prepared in English and further translated to Nepali language with the help of Nepali language expert. Again translated Nepali language questionnaires were retranslated to English language and the retranslated version was compared with the original. All patients enrolled in the study were asked questions in Nepali language.

There were total four parts in the questionnaire. Part I was related to sociodemographic characteristics. Part II related to knowledge regarding the study topic. Knowledge related questions were total 18 including multiple responses. Cut off point was mean score. Score equal to mean or above mean was categorized as adequate knowledge and score below mean was categorized as inadequate knowledge. Part III was related to attitude regarding thyroid disorders. There were all together 6 questions. Attitude questions were scored on a five point Likert scale and the patient's level of agreement towards the given statement checked¹⁵. Level of attitude was also analyzed by mean score. Score equal to mean or above mean was categorized as positive attitude and score below mean was categorized as negative attitude. Part IV was practice related six questions stated in a descriptive form only.

The content validity of the instrument was ascertained by adopting and modifying the previous tools, consultation with peers, advisors and subject matter experts and expert endocrinologist. Pretesting of the instrument was conducted on 10% of the patients in same clinic who met the sample criteria to identify clarity, consistency of the research

tool and those respondents were not included in the study. Exit interview technique was adopted. Interview was conducted in a separate room nearby the doctor's room. After interview was finished, counseling regarding care of patients with thyroid disorders was done. Data was collected at morning and evening OPD time.

Prior to data collection, ethical approval was obtained from Institutional Review Board of Tribhuvan University, Institute of Medicine, Maharajagunj, Kathmandu. Concerned Diabetes, Thyroid and Endocrinology Care Centre were briefed about the objectives of the study and formal permission was taken for the data collection. Informed verbal and written consent were taken from the respondents too. Confidentiality of the information was maintained by keeping code number in each questionnaire.

After collection of data, it was checked for completeness and adequacy of information provided by respondent. Collected data was edited, coded, organized and entered into Statistical Package for Social Science (SPSS) version 16 for analysis. The data was analyzed by using descriptive (frequencies, percentages; mean and standard deviation) and inferential statistics (Chi square test and correlation test) were used to determine the association of sociodemographic variables and level of knowledge, level of attitude respectively, the statistical significance was set at 0.05 levels.

RESULTS

The results are summarized and represented in tables.

Mean age was 44.47(SD±11.88). Most (90.0%) of the respondents were females. Most of the respondents (70.8%) were from municipality and follow Hinduism (67.2%). More than half (61.2%) of the respondents were homemaker. More than (93%) of the respondents were literate. 100% of the respondents were using iodized salt. More than 85% of the patients were non vegetarian and 70% of patients were following treatment for more than one year. (Table 1)

Table: 1 Distribution of the Respondents according to Background Characteristics n=400

Characteristics	Frequency	Percentage
Age		
≤44 years	214	53.5
>44 years	186	46.5
Mean age ± SD= 44.7±11.8		
Gender		
Female	360	90.0
Male	40	10.0
Residence		
Municipality	283	70.8
VDC	117	29.2
Religion		
Hindu	269	67.2
Buddhist	117	29.2
Muslim	9	2.2
Christian	5	1.2
Marital Status		
Married	377	94.2
Unmarried	16	4.0
Divorced	4	1.0
Widowed	3	0.8
Occupational Status		
Homemaker	245	61.2
Service	91	22.8
Business	33	8.2
Student	15	3.8
Retired	9	2.2
Agriculture	7	1.8
Educational Status		
Literate	375	93.8
Illiterate	25	6.2
Type of salt used		
Iodized	400	100.0
Food Habits		
Non- Vegetarian	342	85.5
Vegetarian	58	14.5
Duration of the diagnosis		
More than one year	280	70.0
7-12 months	68	17.0
3-6months	52	13.0

Table 2 shows that majority (89.2%) and (95.5%) of the respondents knew about hypothyroidism and hyperthyroidism respectively. Majority (76.8%) of the respondents told that hypothyroidism leads to weight gain. Most of the respondents (76.8%) have knowledge on not stopping thyroid drug

during pregnancy. (68.0%) of the respondents have knowledge on continuation of the medicine once test is normal. Majority (65.0%) of the respondents told that thyroid disorder cannot be treated by iodized salt and (62.5%) of the respondents were aware of taking drug on empty stomach with 1 hour of interval of tea/coffee. Majority (71.8%) have knowledge on that female can conceive under thyroid medication. Cent percent were aware of the drug used on hypothyroidism. Besides this, majority (86.2%) of the respondents don't believe that alternatives medicine can cure thyroid disorders.

Table 2: Details of responses of patients on knowledge domain n=400

Questions on knowledge domain	Yes (%)	No (%)
Hypothyroidism is the decreased secretion of the hormones from thyroid gland	357(89.2)	43(10.8)
Hyperthyroidism is the increased secretion of thyroid gland	382(95.5)	18(4.5)
Hypothyroidism leads to weight gain	307(76.8)	93(23.2)
Thyroid medication should be stopped during pregnancy	93(23.2)	307(76.8)
Thyroid medication can be stopped once test normal	128(32.0)	272(68.0)
Thyroid deficiency is treated by iodized salt	140(35.0)	260(65.0)
Thyroid medication should be taken in empty stomach and an interval of at least one hour before taking tea or coffee	250(62.5)	150(37.5)
Female can conceive while she is in under medication	287(71.8)	113(28.2)
Synthetic hormone levothyroxine medicine is used to treat hypothyroidism	400(100)	0(0.00)
Alternative medicines can cure thyroid disorders	55(13.8)	345(86.2)

Most (62.8%) of the respondents were found to have adequate knowledge and (37.2%) of the respondents have inadequate knowledge regarding thyroid disorders. (Table 3)

Table 3: Distribution of the respondents according to level of knowledge

Level of Knowledge	Frequency	Percent
Adequate	251	62.8
Inadequate	149	37.2
Mean Score \pm SD =31.91 \pm 4.18		

Table 4 illustrates the association of socio demographic variables with knowledge regarding thyroid disorders. Age, educational status and duration of illness was found to be significantly associated with level of knowledge on thyroid disorders. Besides this, there was no significant association between gender and residence of the respondents with level of knowledge.

Table:4 Association of different background characteristics with level of knowledge regarding thyroid disorders

n=400

Variables	Level of knowledge		Total %	χ^2	P-value
Age	Adequate (%)	Inadequate (%)			
≤ 44 years	144(67.3)	70(32.7)	214(53.5)	.044	.049*
> 44 years	107(57.5)	79(42.5)	186(46.5)		
Gender					
Female	225(62.5)	135(37.5)	360(90.0)	0.75	0.86
Male	26(65.0)	14(35.0)	40(10.0)		
Residence					
Municipality	176(62.2)	107(37.8)	283(70.8)	0.71	0.73
VDC	75(64.1)	42(35.9)	117(29.2)		
Educational Status					
Literate	241(64.3)	134(35.7)	375(93.8)	0.015	0.019*
Illiterate	10(40.0)	15(60.0)	25 (6.2)		
Duration of diagnosis					
≤ 1 year	86(71.7)	34(28.3)	120(30.0)	0.016	0.018*
> 1 year	165(58.9)	115(41.1)	280(70.0)		

(*) Statistically significant at $p < 0.05$

Level of attitude was not found significantly associated with any of the socio demographic variables. (Table 5)

Table:5 Association of different background characteristics with level of attitude regarding thyroid disorders

Variables	Level of attitude		Total %	χ^2	P-value
Age	Positive (%)	Negative (%)			
≤ 44 years	95(44.4)	119(55.6)	214(53.5)	.963	1.00
> 44 years	83(44.6)	103(55.4)	186(46.5)		
Gender					
Female	158(43.9)	202(56.1)	360(90.0)	0.46	0.50
Male	20(50.0)	20(50.0)	40(10.0)		
Residence					
Municipality	125(44.2)	158(55.8)	283(70.8)	0.83	0.91
VDC	53(45.3)	64(54.7)	117(29.2)		
Educational Status					
Literate	170(45.3)	205(54.7)	375(93.8)	0.19	0.21
Illiterate	8(32.0)	17(68.0)	25 (6.2)		
Duration of diagnosis					
≤ 1 year	58(48.3)	62(51.7)	20(30.0)	0.31	0.32
> 1 year	120(42.9)	160(57.1)	280(70.0)		

(*) Statistically significant at $p < 0.05$

DISCUSSION

The present study showed that 53.5% of the respondents were of ≤ 44 years of age. Mean age was 44.7 years which is similar with the findings of the study conducted in India which showed the mean age 43.0 years¹⁵. Majority of the respondents were females. This result is consistent with the study conducted in Delhi by Kumar et al., which showed the female respondents were 85.6%¹⁹.

This study showed 91.0% and 9.0% of the respondents were hypothyroidism and hyperthyroidism respectively which is similar to the findings of the study conducted in tertiary care hospital Chennai which showed 90.0% were hypothyroid patients and 10.0% hyperthyroid patients²⁰. This study revealed that 89.2% and 95.5% of the respondents knew the meaning of hypothyroidism and hyperthyroidism respectively. In this study, 76.8% of the respondents told that hypothyroidism leads to weight gain which is supported by the findings of the study conducted in Meerut which showed 79.5% of the respondents agreed that hypothyroidism leads to weight gain¹³. This study showed that 76.8% of the respondents knew that thyroid medicines should not be stopped in pregnancy. The study conducted in Kashmir also showed that 63.0% of the respondents told that

the thyroid medicines should not be stopped in pregnancy¹⁶. The present study found that 68.0% of the respondents were aware of continuing medicines once test is normal which is similar to the findings of previous study which showed 70.0% of the respondents told the drug should not be stopped once test is normal¹³. This study showed that 65.0% of the respondents told that thyroid deficiency is not treated by iodized salt which is relatively consistent with the findings of the study conducted in Bengaluru, India and the another study conducted in Delhi.^{17,19}

The present study showed that 62.5% of the respondents take thyroid medicine in an empty stomach with one hour of interval of tea, coffee. This finding is inconsistent with the finding of the previous study conducted by Goel et al., which showed 33.0% of the respondents took the medicine in an empty stomach with one hour of interval of tea and coffee¹⁷. This inconsistency may be due to proper guidance by the pharmacist in this study. The present study showed that 86.2% of the respondents told that thyroid disorders are not cured by alternative medicines which is similar to the findings of the study conducted by Singh et al., that showed the 79.6% of the respondents agree that the alternative medicine is not useful in curing thyroid disorders¹³. This consistency may be due to more proportion of literate respondents in the present study. In this study, majority 92.2% of the respondents told thyroiditis leads to hypothyroidism and 85.8% of the respondents told tumor of thyroid gland leads to hyperthyroidism. When asked about the symptoms patients provided variable features; weight gain in 96.0%, constipation in 95.0%, skin problems in 94.0%; published literature presented similar findings.^{5,16} This study revealed that 99.0% of the respondents avoided cauliflower, cabbage, broccoli in their diet as stated by other authors.¹⁶ The present study revealed that 62.8% of the respondents had adequate knowledge on thyroid disorders. This result was found to be similar

with the result showed by the previous study that 57.32% of the respondents had adequate knowledge regarding thyroid disorders²¹. In present study, significant association was found among age ($p=0.49$), education ($p=0.01$) and duration of illness ($p=0.01$) with level of knowledge.

The present study showed that 44.5% of the respondents had positive attitude which is similar with the findings of the previous study which showed 46.6% of the respondents had positive attitude regarding thyroid disorders¹⁷. In this study, correlation analysis showed that knowledge of respondents on thyroid disorders is positively correlated with their attitude ($r=0.173$, $p=0.001$). All the respondents consume iodized salt and 90.0% of the respondents do regular follow up visit to doctors.

Conclusion

The study concluded that more than half of the respondents had adequate knowledge regarding thyroid disorders and almost half of the respondents had negative attitude regarding thyroid disorders. Awareness program should be conducted regarding thyroid disorders to improve therapeutic outcomes, compliance and awareness among thyroid disorder patients.

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