

Assessment of Interventions by Pharmacist in Improving Knowledge, Attitude and Practice towards Hypothyroidism among the Patients Attending at an Endocrine Clinic in Nepal

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ABSTRACT

Background: The diverse role of pharmacist for management of chronic disease carries significant effects. Hypothyroidism, common chronic endocrine disorders can affect multiple organs. So, educating patient can bring fluorescent in management of chronic disease like hypothyroidism. This study assessed the pharmacist provided intervention in hypothyroid patients in terms of knowledge, attitude and practice outcomes. **Method:** A prospective, case controlled, interventional based study with total 118 patients diagnosed with hypothyroid condition as the inclusion criteria. Knowledge, attitude and practice regarding hypothyroidism were assessed and recorded by using appropriately designed and validated standard questionnaire. Test group patients were counseled regarding hypothyroidism and provided with informative leaflet to them in local (Nepali) language. While in control group patients, no intervention was provided by pharmacist. After one month interval, knowledge, attitude and practice score were measured in both groups (test and control) by using same knowledge, attitude and Practice questionnaire. Effectiveness of counseling was evaluated in the test group by comparing mean scores of knowledge, attitude and practice before and after intervention using sampled paired t-test. **Results:** Mean knowledge, attitude and practice score of test group patients before intervention were 5.290 ± 3.043 , 14.709 ± 1.540 and 2.677 ± 0.471 respectively and after intervention the score were 7.935 ± 2.231 , 15 ± 1.201 and 2.935 ± 0.247 respectively (p value < 0.05). **Conclusion:** Positive impact on patient's knowledge, attitude and practice towards disease management after intervention by pharmacist was observed.

Key words: Attitude, Hypothyroidism, Knowledge, Practice score.

INTRODUCTION

Globally the patient with hypothyroidism is 1-10% and is one of the common disorders seen in women older than 60 years.¹ about 300 million of population are affected with thyroid dysfunction where as more than half are unaware about their condition. In Nepal, thyroid dysfunction is one of the major problems prevalent about 30% in eastern region. Hypothyroidism is common thyroid dysfunction and its prevalence and pattern depends on socio-demographic, geographic and environmental factors.² It is a common chronic disorder and defined as the thyroid gland cannot produce enough thyroid hormone, keep the body running

normally.³ It has different etiologies and clinical manifestations. Appropriate treatment requires an accurate diagnosis and is influenced by co-morbidities. Hence, Fifty-two evidence-based recommendations were found to aid in the care of patients with hypothyroidism. The standard treatment is levothyroxine replacement therapy.⁴ Though hormone replacement therapy is not so expensive, under and over treatment is common among them and profound effects on various organs such as cardiovascular system, endocrine system, nervous system and brain is seen. So, education regarding hypothyroidism is a crucial step and requires a

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health care team to provide the patient with the best care in which the pharmacist can play a key role.

Pharmacist's role is changed significantly above the past 30 years. Traditionally, the role of pharmacists is dispensing and compounding medication. The concept of pharmacy practice is changed gradually till now from a product oriented activity to a patient-oriented one. Pharmacists' job is extended from dispensing to monitoring drug therapy in clinical settings.⁵

Better pharmacotherapeutic outcomes can be achieved through better understanding of hypothyroidism and thyroxine replacement therapy via counseling. Improved outcomes can be measured in terms of knowledge, attitude and practice scores. A cross-sectional study conducted in medical college, Meerut revealed that total of 200 patients with thyroid disorder had poor knowledge and misconception regarding this. Patient education can play vital role for evaluation of knowledge, attitude and practice level among them.⁶ S Kannan *et al.* revealed management of hypothyroidism covered appropriate use of medication, dose adjustment as well as patient education to obtain better outcome.⁷ Similarly, another study carried out at Manipal Teaching hospital in 2006 with total 182 patients, suggested low level of knowledge, attitude and practice can be improved by launching awareness program for the patient.⁸ A study conducted by Anurodh Ghimirey *et al.* concluded that the patients' knowledge, attitude and practice level towards disease management was improved by pharmacist provided counseling.⁹ Subish Palaian *et al.* assessed the impact of pharmacist provided intervention in hospitalized patients where pharmacist can educate the patients with chronic disease making strategies to improve patients' knowledge, attitude and practice level.⁵

In Nepal, paucity of awareness programs regarding hypothyroidism like diabetes exists. People are unaware of hypothyroidism because of lack of knowledge about the disorder and medication. Misleading sign and symptoms and ignorant in monitoring thyroid level on regular basis are some common problems observed in hypothyroid patients. Associated trouble with this disorder is delay progression of other medical conditions and worsen the patient's health as well as increases expenses. Patient education play significant role in reduction of their burden.

MATERIAL AND METHODS

This is prospective, interviewed based, interventional case control study conducted from April 2014 to September 2014, at Diabetes, Thyroid and Endocrinology Care Centre, Kupondole, Lalitpur, Nepal. This institute is a private endocrine clinic providing health services to public with endocrine problems like diabetes, thyroid dysfunction. A total of 118 patients were enrolled in

the study, 59 patients diagnosed with hypothyroidism in each group (test and control) as inclusion criteria.

Patient inclusion criteria

Hypothyroid patients of age range 16-75 years visiting the endocrine clinic as OPD patients were included in the study.

Patient exclusion criteria

Pregnant women, psychiatric and hospitalized patient with thyroid dysfunction were excluded from the study.

Measurement tools, data collection, data analysis

The knowledge, attitude, and practice (KAP) questionnaire (in Nepali language) was designed and validated. Validation was done by pretesting among 10 members of a group, collected the responses, analyzed and then rearranged it. Finally self administered questions were provided and data was collected from test and control group. The answers were analyzed by using following scoring system. Regarding knowledge questions, each correct answer was scored as one (1) and for an incorrect answer was scored as zero (0). Likewise practice questions, adhering to the guidelines for disease management or instructions from the patient's health care provider was merited a score of one (1) while non-adherence was scored as zero (0). Attitude questions were measured by using 5 point Likert scale where the patient level of agreement towards the given statement was checked. Each question was scored as five (5) for the greatest level of agreement (strongly agree), zero (0) for the lowest level of agreement (strongly disagree) and others in between 1 and 5. The total score of the question for each knowledge, attitude and practice was calculated by summing the score obtained from each question and obtained data were analyzed.

The collected data was reviewed and statistically analyzed using Statistical Packaging (SPSS) version 18.0 and Microsoft Excel 2007. The effectiveness of counseling in terms of knowledge, attitude and practice outcomes was measured by comparing the mean KAP scores before and after pharmacist provided intervention using Sampled paired t-test. A p-value of <0.05 was considered significant throughout the study.

RESULT

The study enrolled a total 118 patients of mean age group 41.22 ± 11.33 years and age ranging 35 to 45 years and 87.3% were females and 12.7% were male as illustrated in Table 1. 21.2% had history of hypothyroidism in their family members. Occupation data showed that half of them were housewives (56%) and few of them were involved in business (5%). The research

Table 1: Patients demographic attributes

Age	Frequency	Percent
15-25	11/	9.3
25-35	24	20.3
35-45	42	35.6
45-55	27	22.9
>55	14	11.9
Gender		
Male	15	12.7
Female	103	87.3

Table 2: Comparison of KAP scores of test and control group

Test group			
Category	Mean score before intervention	Mean score after intervention (one month interval)	P-value
Knowledge score	5.2903 ± 3.04279	7.9355 ± 2.23145	0.000
Attitude score	14.7097 ± 1.54057	15.3548 ± 1.11762	0.001
Practice score	2.5484 ± 0.61876	2.7742 ± 0.42153	0.018
Control group			
Category	Mean score at baseline	Mean score after one month follow up	P-value
Knowledge score	2.7500 ± 2.34521	2.7679 ± 2.32763	0.812
Attitude score	13.2857 ± 0.9480	13.3393 ± 0.9587	0.606
Practice score	2.5536 ± 0.68542	2.3571 ± 0.74903	0.200

revealed 36.4% were hypothyroid patient with other medical problems like diabetes, hypertension, high cholesterol and migraine. Among them 47.5% were already diagnosed as hypothyroid patients and 6.8% were newly diagnosed patients. The clinical manifestation of study subjects were sore throat (41.60%), fatigue (36.40%), voice change (36.40%), neck pain (22.10%), constipation (19.50%), weight gain (20.80%), sleepiness (15.60%), cold intolerance (10.40%), joint pain (10.40%), depression (9.10%), hair fall (9.10%), irregular menstruation (6.50%), difficulty in swallow (7.80%), difficulty in breath (3.90%) and skin problem (1.30%) shown in Figure 1.

The mean baseline knowledge, attitude and practice score of test group were 5.29 ± 3.042 , 14.70 ± 1.54 and 2.67 ± 0.47 respectively. After intervention, knowledge score was 7.93 ± 2.23 , which was significantly higher (p value < 0.05) with improved knowledge and the attitude of patients towards hypothyroidism was changed after counseling (p value < 0.05). Similarly, mean practice score was 2.774 ± 0.421 after intervention (p value < 0.05) significantly improved the practice of hypothyroid patients, while the mean knowledge, attitude and practice scores of control group were in significant after one month follow up (P -value > 0.05) shown in Table 2.

DISCUSSION

The goal of study was to assess the knowledge, attitude and practice scores of hypothyroid patients following pharmacist provided intervention. Patient education is core key to achieve correct therapeutic outcome and bring vivid change in treatment.¹⁰ Pharmacist is a foremost person who improves knowledge level of the patients regarding the drugs through group education and patient counseling.⁸ Improved knowledge shows positive effect on patients' attitude level along with this patient will get better practice. In 2010, Thomas et al. suggested clinical pharmacist improves treatment outcome in term of knowledge, attitude and practice scores of the patients after counseling.¹¹ Another study conducted by Sharma et al. concluded improves of knowledge, attitude and practice after providing information regarding disease and medication.¹²

The mean age group of the patients was 41.22 ± 11.33 years and age ranged from 35 to 45 years in this study. The result is supported by a case control study that was carried out at the Gandaki Medical College Teaching Hospital (GMCTH) Pokhara, Nepal and the mean age of hypothyroid patients was 42 ± 13.4 years.¹¹ However, many studies suggested the prevalence of hypothyroidism is higher in elderly in the community. Moreover, another study revealed the hypothyroidism is

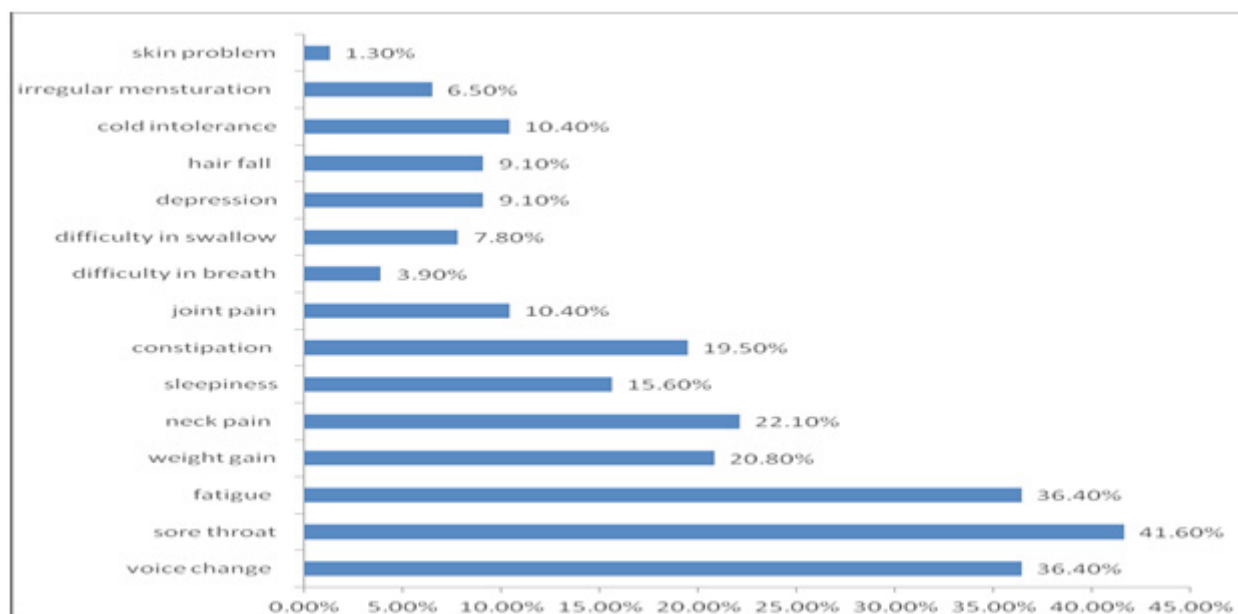


Figure 1: Sign and Symptoms of hypothyroidism

of 5 times greater risk in persons aged ≥ 80 years compared with those aged 12 to 49 years.¹³ Similarly, a study done in Leiden, Netherlands, overt hypothyroidism was found in 7% of 558 subjects aged between 85 and 89 year.¹⁴ Hypothyroidism was commonly seen in female population than in male population mainly because of effect of female hormonal imbalance. Birth control pills, pregnancy, and postmenopausal estrogen supplementation are used by women, increasing the levels of Thyroxine-binding globulin (TBG) and decreasing the free thyroxine in circulation. While, the male hormone testosterone has no effect on Thyroxine-binding globulin (TBG) and actually stimulates the conversion of the inactive thyroid hormone, T₄, to the active thyroid hormone, T₃, within the cells.¹⁵ About half of enrolled subjects were homemaker (56%) followed by job holder (31%), students (8%) and businessman (5%). Concerning comorbidities, 36.4% hypothyroid patients with other medical problems like diabetes, hypertension, high cholesterol and migraine. The clinical manifestations are varied due to involvement of different organs as shown in Figure 1.

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CONCLUSION

Patient education improved the understanding level of patients towards hypothyroidism. Pharmacist can play a main role in improving patient care by counseling. Hence this study suggested advantages of intervention by pharmacist in improving knowledge attitude and practice of patients towards management of disease.

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CONFLICT OF INTEREST

We wish to confirm that there are no known conflicts of interest associated with this publication.

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