

Effectiveness of Structured Teaching Programme on Knowledge of Adolescents Regarding Prevention and Early Detection of Thyroid Disorders

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ABSTRACT

Background: A pre-experimental study was conducted to assess the effectiveness of structured teaching programme on knowledge of adolescents regarding prevention and early detection of thyroid disorders at selected pre-university colleges, Bengaluru. A total sample of 60, adolescents were selected using non-probability convenient sampling. The objectives of the study were to assess the pre-test level of knowledge of adolescents regarding prevention and early detection of thyroid disorders and to find the effectiveness of structured teaching program on knowledge of adolescents regarding prevention and early detection of thyroid disorders. The final objective was to find out the association between pre-test score of adolescents with socio-demographic variables.

Materials and Methods: A one-group pre-test post-test design was used to conduct the study. A sample comprising of 60 adolescents were enrolled using non-probability sampling technique. The conceptual framework of the study was based on Imogene King's goal attainment model. Tools used for data collection were demographic Performa and structured knowledge questionnaire.

Results: Data analysis was done using descriptive and inferential statistics. Findings of the study revealed that the mean post-test knowledge score 26.15 ± 3.66 was significantly higher than the mean pre-test knowledge score 11.58 ± 4.17 ($p < 0.05$). Paired t value computed at 39.58 was statistically significant at $p < 0.05$, which revealed that, there is significant increase in the mean post-test knowledge score. There was no significant association was observed at

0.05 found between pre-test level knowledge scores and selected demographic variables.

Conclusion: The findings of the study clearly showed that the structured teaching programme was significantly effective in improving the knowledge of adolescents regarding prevention and early detection of thyroid disorders.

Key Word: Effectiveness, structured teaching programme, knowledge of adolescents, prevention of diseases, hypothyroidism, hyperthyroidism.

I. INTRODUCTION

Thyroid disorders are amongst the most common endocrine disorders in India. The prevalence and pattern of thyroid disorders depends on sex, age, ethnic, and geographical factors and especially on iodine intake.¹ Thyroid disorders are more common in women than in men. One in every eight women during their life time has risk for thyroid disorder. The exact reason is not known. The higher prevalence in females may be associated with estrogen and progesterone.² Globally, thyroid disorders continue to be common yet one of the most under-diagnosed and neglected chronic health conditions. 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 and associated benefits of improving compliance with healthcare appointments and

medications for patients with thyroid disorders.³Worldwide about one billion people are estimated to be iodine deficient; however, it is unknown how often this result in hypothyroidism. In the United States, hypothyroidism occurs in 0.3-0.4% of people. Subclinical hypothyroidism, a milder form of hypothyroidism characterized by normal thyroxin levels and an elevated TSH level, is thought to occur in 4.3-8.5% of people in the United States. Hypothyroidism is more common in women than men. People over the age of 60 are more commonly affected.⁴

A cross sectional study was conducted on the epidemiology of thyroid disease at Europe, the USA and Japan. The survey method is used to select 1000 women's and data collected through questionnaire. The study result revealed that the range between 0.6 and 12 per 1000 women and between 1.3 and 4.0 per 1000 in men of hypothyroidism, and the prevalence of hyperthyroidism in women is between 0.5 and 2% and is 10 times more common in women than in men in iodine deficiency. The study concludes that thyroid screening should be done to rule out the causative factors.⁵

Objectives of the study

1. To assess the pre-test level of knowledge of adolescents regarding prevention and early detection of thyroid disorders.
2. To find the effectiveness of structured teaching program on knowledge of adolescents regarding prevention and early detection of thyroid disorders.
3. To find out the association between the pre-test score of adolescents with socio-demographic variables.

Hypotheses

- H₁- There may be a significant difference between the pre-test and post-test knowledge score of adolescents regarding prevention and early detection of thyroid disorders.

- H₂- There may be a significant association between pre-test knowledge scores and selected socio-demographic variable.

II. MATERIAL AND METHODS

Research Approach: Pre- experimental approach.

Research Design: One group pre-test – post-test design.

Population: Adolescents

Settings: Selected pre-university colleges at Bengaluru.

Sampling Technique: Convenient sampling technique.

Sample size: 60 Adolescents.

Tools and Technique

I) A Demographic Performa was used to collect socio demographic data such as age in years, gender, religion, educational status of the mother & father, occupational status of the father & mother, monthly family income, type of family, previous source of information.

II) A Structured knowledge questionnaire was used to assess the knowledge of adolescents regarding prevention and early detection of thyroid disorders which consisted of 35 items divided into 5 components (General information, causes and clinical manifestation, diagnostic evaluation, dietary management and complications)

Method of Data collection: Data was collected for a period of one month [9th March 2020 to 8th April 2020].

After explaining the purpose and obtaining an informed consent, the pre-test was administered for the samples followed by a structured knowledge questionnaire. After a period of 07 days a post test was carried out for the samples.

Inclusion criteria:

Adolescents who are in the age group of 16-18 years.

Adolescents who are willing to participate in the study.

Exclusion criteria:

Adolescents who are previously attended any teaching session related to prevention and early detection of thyroid disorders.
 Adolescents who are diagnosed with hyperthyroidism/ hypothyroidism.
 Adolescents who are sick during data collection.

distribution and percentage were used to describe the socio demographic data and Inferential statistics such as student t test was used to find out the effectiveness of STP by comparing the mean knowledge scores, paired *t*-test was used to determine the difference between mean knowledge scores before and after the intervention. Chi-square was performed find out the association between knowledge and selected demographic variables. The level $P < 0.05$ was considered as the minimum accepted level of significance.

STATISTICAL ANALYSIS

Both Descriptive and Inferential statistics were used to analyse the data [using SPSS version 20 (SPSS Inc., Chicago, IL)]. Descriptive statistics such as Frequency

III. RESULTS

Table 01: Frequency distribution and percentage of sample characteristics (N=60)

Demographic variables		Frequency	Percentage
Age	16-17	35	58.3
	17-18	25	41.7
Religion	Hindu	37	61.7
	Muslim	22	36.7
	Christian	01	1.6
Educational Status of the father	No formal education	02	3.3
	Primary education	23	38.3
	High school	19	31.7
	PUC and above	16	26.7
Educational Status of the mother	No formal education	1	1.7
	Primary education	33	55.0
	High school	18	30.0
	PUC and above	8	13.3
Type of family	Nuclear family	41	68.3
	Joint family	19	31.7
Occupational status of the father	Daily wages	24	40
	Home maker	2	3.3
	Private employed	28	46.7
	Govt employed	6	10
Occupational status of the mother	Daily wages	19	31.7
	Home maker	28	46.7
	Private employed	10	16.6
	Govt employed	3	5.0
Family Income	≤ 10000/-	27	45
	10001-20000/-	27	45
	20001-30000/-	06	10
Previous source of information	Mass media	32	53.3
	Magazine	19	31.7
	Class mates	8	13.3
	Class room teaching	1	1.7

Table 02: Frequency distribution and percentage of pre-test and post-test knowledge level regarding prevention and early detection of thyroid disorders among adolescents (N=60)

Levels	Pre-test		Post-test		
	Frequency	Percent	Frequency	Percent	
Knowledge	Adequate	0	0	47	78.3
	Moderate	24	40	13	21.7
	Inadequate	36	60	0	0
	Total	60	100	60	100

Figure 01: Bar Diagram showing frequency distribution and percentage of pre-test and post-test knowledge level regarding prevention and early detection of thyroid disorders among adolescents.

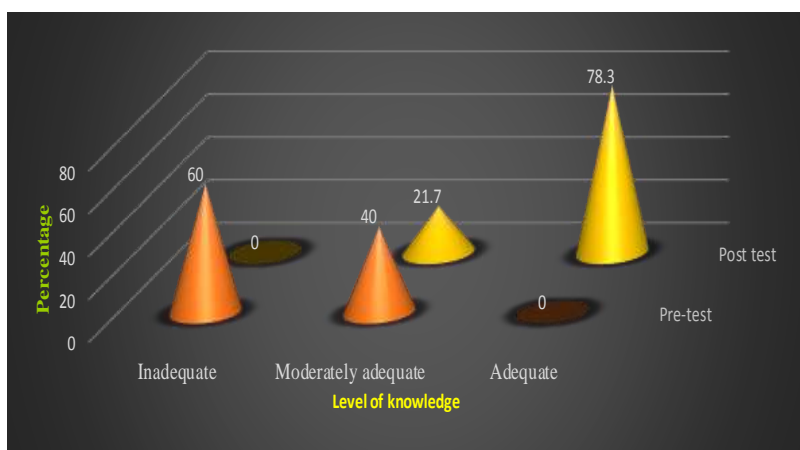


Table 03: Mean, Standard deviation and paired 't' value of knowledge level among adolescents before and after STP. (N=60)

Stage	Mean	SD	Mean Difference	df	Paired t	p
Pre-test	11.58	4.17	14.50	59	39.58*	0.001 (S)
Post-test	26.15	3.66				

* Significant at 0.05 level

Table 03 shows that mean knowledge score before the structured teaching programme was 11.58±4.17 and after the intervention (structured teaching programme), the mean knowledge score increased to 26.15 ±3.66. Increase in knowledge score after structured

teaching programme was statistically significant (p<0.05). Change in knowledge score at post-test was statistically significant. Hence research hypothesis (H₁) was accepted.

Table-04: - Area wise Mean, SD, Mean Difference and 'Paired t value' of level of knowledge among adolescents before and after the intervention.

SL No	Area	Stage	Mean ± SD	Mean Difference	df	Paired t value	P value
01	General information of thyroid disorder	Pre-test	3.47±0.91	4.93	59	35.15 *	0.001(S)
		Post-test	8.40 ±0.84				
02	Causes and clinical manifestation of thyroid disorder	Pre-test	2.08±0.72	2.43	59	19.93 *	0.001(S)
		Post-test	4.52±0.70				
03	Diagnostic evaluation of thyroid disorder	Pre-test	1.72±0.88	1.98	59	16.21*	0.001(S)
		Post-test	3.7±0.67				
04	Dietary management & Preventive measures of thyroid disorder	Pre-test	3.03±1.14	4.61	59	27.17*	0.001(S)
		Post-test	7.65±0.89				
05	Complications of thyroid disorder	Pre-test	1.28±0.52	.58	59	6.08*	0.001(S)
		Post-test	1.87±0.56				

Table 05: Association between the knowledge among eligible couples with the selected demographic variables.

Demographic variable	Knowledge level				Chi-square test (□2)	Df P value
	Inadequat		Moderat			
	N	%	N	%		
Age						
16-17	14	58.3	21	58.3	0.001	df=1
17-18	10	41.7	15	41.7		p=0.64(NS)
Religion						
Hindu	14	58.3	23	63.9	1.01	df=2
Muslim	10	41.7	12	33.3		p=0.60(NS)
Christian	0	0	0	2.8		
Educational Status of the father						
No formal education	2	8.3	0	0	4.00	df=3
Primary education	7	29.2	16	44.4		p=0.26NS

High school	8	33.3	11	30.6		
PUC and above	7	29.2	9	25.0		
Educational Status of the mother						
No formal education	0	0	1	2.8	3.74	df=3
Primary education	15	62.5	18	50		p=0.29(NS)
High school	8	33.3	10	26.9		
PUC and above	1	4.2	7	19.4		
Type of family						
Nuclear family	19	79.2	22	61.1	1.12	df=3
Joint family	5	20.8	14	38.9		p=0.77(NS)
Occupational status of the father						
Daily wages	8	33.3	16	44.4	3.46	df=3
Home maker	1	4.2	1	2.8		p=0.32(NS)
Private employed	13	54.2	15	41.7		
Govt employed	2	8.3	4	11.1		
Occupational status of the mother						
Daily wages	6	25	13	36.1	1.59	df=2
Home maker	13	54.2	15	41.7		p=0.45(NS)
Private employed	5	20.8	5	13.9		
Govt employed	0	0	3	8.3		
Monthly family Income						
≤ 10000/-	11	45.8	16	44.4	2.16	df=1
10001-20000/-	12	50	15	41.7		p=0.11(NS)
20001-30000/-	1	4.2	5	13.9		
Previous source of information						
Mass media	12	50.0	20	55.6	1.11	df=3
Magazine	8	33.3	11	30.6		p=0.77(NS)
Class mates	4	16.7	4	11.1		
Class room teaching	0	0	1	2.8		

(p<0.05 significant level) NS-Non-Significant

The Chi-square and fisher's exact were performed to find out the association between knowledge with selected demographic variables. In the present study, it is found that there is no significant association with knowledge regarding the prevention and early detection of thyroid with selected demographic variables. Hence the research hypothesis H₃ is not accepted

IV. DISCUSSION

The findings in the present study revealed that the mean post-test knowledge score 26.15±3.66 was significantly higher than the mean pre-test knowledge score 11.58±4.17 (p<0.05). Paired t value computed at 39.58* was statistically significant at p<0.05. The paired t value [39.58*] computed by comparison of the mean pre-test and post-test knowledge scores was statistically significant at P<0.05 level. Therefore, it is interpreted that structured teaching programme was significant in improving the knowledge regarding prevention and early detection of thyroid among adolescents.

This result is supported by various studies. In contrast to present study findings a cross-sectional study was conducted to assess

knowledge, attitude, and practices in patients with hypothyroidism in Hyderabad. The study result revealed that most patients had low levels of knowledge (66.6%), were quite concerned (46.6%) and practiced a moderate level of precaution (77.8%). Around 18.4%, 26.2%, 27.8%, and 37.6% of patients had incorrect/no knowledge that weight gain, fatigue, muscle ache and dry skin were effects of hypothyroidism, respectively.⁶

V. CONCLUSION

The study was conducted to assess the effectiveness of structured teaching programme on knowledge of adolescents regarding prevention and early detection of thyroid disorders. The results of the study undoubtedly confirm that the post-test knowledge score is significantly higher than the pre-test knowledge score. Therefore, it is concluded that STP was effective in enhancing the knowledge of adolescents regarding prevention and early detection of thyroid disorders.

Limitations

- The study is limited to students of selected Pre-university colleges, Bengaluru.
- The study assessed only knowledge component of Pre-university college students regarding prevention and early detection of thyroid disorders.
- Small number of respondents (60) limits the generalization of the study.
- The study did not use any control group.

Recommendations

- A similar study may be conducted on a larger sample for generalization of the study findings.
- A similar study can be conducted among other age groups and public.
- A similar study may be conducted in other backward districts, taluks, villages etc.

Declaration by Authors

Ethical Approval: Approved

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Conflict of Interest: The authors declare no conflict of interest.

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