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RESEARCH ARTICLE

A STUDY TO ASSESS THE KNOWLEDGE REGARDING HYPOTHYROIDISM AND ITS EFFECTS AMONG ADOLESCENT GIRLS IN SELECTED AREAS OF PAKALA

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ABSTRACT

Introduction: Thyroid disorders are amongst the most prevalent of medical conditions and these are common worldwide. In India too, there is a significant burden of thyroid diseases. They are five common thyroid diseases in India 1) Hypothyroidism 2) Hyperthyroidism 3) Goiter and iodine deficiency disorders 4) Hashimoto's thyroiditis and 5) Thyroid cancer. The prevalence of hypothyroidism is the most common type of thyroid dysfunction. . It consists of two lateral lobes connected by an isthmus. The gland is about 5cms long and 3 cms wide and weighs about 30g. The blood flow to the thyroid is very high about 5ml/min per gram of thyroid tissue. The thyroid gland produces three hormones: Thyroxine (T4), Triiodothyronine (T3) and Calcitonin. Adolescence is the period of transition between childhood and adulthood. Children who are entering adolescence are going through many changes (physical, intellectual, personality and social developmental). Adolescence begins at puberty, which now occurs earlier, on average, than in the past. Hypothyroidism results from suboptimal levels of thyroid hormone. Thyroid deficiency can affect all body functions and can range from mild, sub-clinical forms to myxedema an advanced form. The most common cause of this in adults is auto immune thyroiditis (Hashimoto's disease), in which the immune system attacks the thyroid gland. **Methodology:** Non- Experimental approach was adopted to achieve the objectives of the study, which was felt to be most appropriate for its practicability in real life situation. It has the advantages of practicability, feasibility and to a certain extent for generalization. Research design was descriptive research design. The study was conducted in selected areas of Pakala.Population includes adolescent girls in selected areas of Pakala. Sample size consists of 100 adolescent girls under inclusion criteria. Non probability convenient sampling technique was adopted for the present study based on inclusion criteria. **Results:** With regard to the level of knowledge regarding hypothyroidism and its effects out of 100 adolescent girls, majority of samples 55 (55%) had moderate knowledge, 24(24%) of samples had inadequate knowledge, 21(21%) of samples had adequate knowledge. The mean knowledge score was 31.65 and the standard deviation was 7.019.There was significant association between the level of knowledge and selected socio demographic variables like Educational status of mother, father, Occupational status of father and Residence, significant at $p < 0.01$ level and some of socio demographic variables such as Age in years, Occupational status of mother, Type of family, Monthly family income significant at $p<0.05$. Hence Ho1 hypothesis was rejected. There was no significant association between level of knowledge and demographic variables like religion and standard of study. **Conclusion:** In this study most of the adolescent girls had moderate and inadequate knowledge regarding hypothyroidism. The information booklet has enhanced the knowledge levels of adolescent girls regarding hypothyroidism and its effects. The demographic variables such as Age, Gender, Educational status of mother and father, occupational status of mother and father, monthly family income, residence and source of information were associated with their knowledge regarding hypothyroidism and its effects.

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INTRODUCTION

Hypothyroidism results from suboptimal levels of thyroid hormone. Thyroid deficiency can affect all body functions and can range from mild, sub-clinical forms to myxedema an advanced form. The most common cause of this in adults is auto immune thyroiditis (Hashimoto's disease), in which the immune system attacks the thyroid gland. More than 95% of patients with hypothyroidism have primary or thyroidal hypothyroidism, which refers to dysfunction of the thyroid gland itself. If the cause of the thyroid dysfunction, is failure of the pituitary gland, the hypothalamus or both, the hypothyroidism is known as central hypothyroidism. If the cause is entirely a pituitary disorder, it may be referred to as pituitary or secondary hypothyroidism. If the cause is a disorder of the hypothalamus resulting in inadequate secretion of TSH, due to decreased stimulation of TRH, it is referred to as hypothalamic or tertiary hypothyroidism. If thyroid deficiency is present at birth, it is referred to as cretinism. Hashimoto's autoimmune thyroiditis is the most common of hypothyroidism in adolescence. This occurs in an estimated 1% to 2% of teenagers with a 4:1 female predominance; and in approximately 50% of cases there is a family history of this condition. The mild hypothyroidism is the most common form and may be asymptomatic or may experience cold, lethargy, dry skin, forgetfulness. Simple goiter is confirmed by history collection and physical examination, laboratory tests include TRH, TSH, serum T4, serum T3.

Available thyroid medications include sodium levothyroxine, liothyronine sodium and desiccated thyroid, converted in the body to both T4 and T3. Sodium levothyroxine is the principal form of replacement therapy. Complications include enlarged thyroid or goiter which may cause problems with swallowing and breathing, high cholesterol and associated heart diseases, Nerve damage causing tingling numbness and pain in the legs and arms. infertility birth defects, miscarriage or premature birth, myxedema.

NEED FOR THE STUDY: Hypothyroidism is common throughout the world and is particularly common in the UK. The prevalence of overt hypothyroidism in the general population ranges from between 0.2% and 5.3% in Europe and 0.3% and 3.7% in the USA, depending on the definition used and population studied. Longitudinal studies from large UK cohorts report on the incidence rate of spontaneous hypothyroidism of 3.5- 5.0 per 1000 and 0.6-1.0 per 1000 in women and men respectively. A 2010 study from Australia reported the 5-year incidence of hypothyroidism in individual aged > 55 years was 0.5% and 5.0% respectively. The longest follow up study is from the UK whickham cohort, where the mean annual incidence of spontaneous hypothyroidism during a 20 year follow up period was 35 cases per 10,000 surviving women and 6 cases per 10,000 surviving men. Over the past decade in China, the prevalence of subclinical hypothyroidism has increased (16.7% versus 3.22%, along with the proportion of the thyroid peroxidase antibody positive population (11.5% versus 9.81%) reflecting the transition to iodine sufficiency. Among all cities, Kolkata recorded the highest prevalence of hypothyroidism (21.67%), while others showed comparable rates ranging from 8.88% (Hyderabad) to 11.07% (Delhi). Cities located in the in-land regions of India (Delhi, Ahmedabad, Kolkata, Bangalore and Hyderabad) reported a significantly higher prevalence of hypothyroidism (11.73%) than those (Mumbai, Chennai and Goa) in the coastal areas (9.45%), Logistic Regression Analysis demonstrated a statistically significant interaction of patient age and gender with the prevalence of hypothyroidism. The highest prevalence of hypothyroidism (13.1%) is noted in people aged 46-54 years, with people aged 18-35 years being less affected (7.5%). In this population-based study done in cochin on 971 subjects, the prevalence of hypothyroidism was 3.9%. Among the 70 female participants screened for thyroid disorders, a single participant was found to have subclinical hypothyroidism. This participant had a BMI of 23.6 kg/m^2. Her T4 values were normal (89 ng/mL), but TSH values are found to be elevated (8.1 mlU/L). The participant who was detected with subclinical hypothyroidism hails from Vizianagaram but is residing in the college hostel for 2 years. In another study from South India, abnormal TSH levels were reported in 12.5% of young females, suggesting that a significant proportion of population may remain undetected as these subjects do not show any clinical symptoms. If untreated the subclinical hypothyroidism may progress to overt hypothyroidism, which affects the work performance and quality of life.

MATERIALS AND METHODS

RESEARCH APPROACH: The research approach adopted was non- experimental approach. This approach was considered most appropriate as the study was focused to assess the knowledge regarding hypothyroidism and its effects among adolescent girls in selected areas of pakala.

RESEARCH DESIGN: The research design is concerned with the overall framework for conducting the study. It helps the investigator in the selection of subjects, manipulation of dependable variables, observation to be made. Descriptive survey design was selected to accomplish the objectives.

VARIABLES OF THE STUDY

Independent Variable: Adolescent girls' socio demographic variables like age, standard of study, religion, education of the mother, father, occupation of the mother, father ,type of family, family income, residence, and source of information.

Dependent variable: Adolescent girls' level of knowledge regarding hypothyroidism and its effects.

SETTING OF THE STUDY: According to polit and hunger, selection of an appropriate setting is important because it can influence the subjects and variables. The present study was conducted in pakala. The selected areas were Bazaar Street, park street, new colony, market road, satyamma street.

POPULATION: Population refers to total category of persons that meets the criteria for study by the researcher having observable characteristics in common. In the present study, the target population consists of adolescent girls residing in Pakala and accessible population includes adolescent girls in selected areas of Pakala.

SAMPLE AND SAMPLESIZE: Sample is a smaller part of the population selected in such a way that the individual in the sample represents the characteristics of population. The

sample of the present study included 100 adolescent girls who fulfill the criteria.

SAMPLING TECHNIQUE: Sampling is a process of selecting a sample from target population. Sampling technique adopted for present study was non probability convenient sampling technique based on inclusive criteria.

CRITERIA FOR SAMPLE SELECTION:

Inclusive criteria:

Adolescents those who

- Can read and write English
- Are willing to participate in the study
- Are accessible during data collection
- Are in the age group of 14-15 years
- Are studying in selected areas.

Exclusive criteria:

Adolescents those who are

- In the age group level below 14 years and above 15 years.
- Studying other than the selected areas.

DEVELOPMENT AND DESCRIPTION OF TOOL

The tool was developed with the help of related literature from journals, websites, discussion and guidance from the experts in the field of nursing and medicine.

The tool consists of two sections:

Section – 1: consist of socio-demographic data.
Section - II: Self-administered questionnaire which consists of 26 questions to assess the level of knowledge regarding hypothyroidism and its effects among adolescent girls. Each question has 3 options, one right and two wrong except the 11^{th} , 13^{th} ,15^{th} , 17^{th} ,19^{th}, and 26^{th} which contains 7 options. Each right answer carries "1" mark and each wrong answer carries "0". The maximum score was "50" and the minimum score was "0".

Score interpretation:

- Inadequate: 0-50%
- Moderate: 51-75%
- Adequate: 76-100%

CONTENT VALIDITY: Content validity refers to the degree to which the items in an instrument adequately represent the universe of the Content for the content of being measured. The tool and informational booklet were submitted to 10 experts 6 in the field of community Medicine, 2 in the field of OBG, 2 in the field of community health nursing.

RELIABILITY OF THE TOOL: To establish the reliability of the tool, cronbach's alpha method was used. Tool was administered to 10 members who were not included in the pilot study. The reliability score was r = 0.8440, which indicates that tool was highly reliable.

PILOT STUDY: The pilot study is a small-scale version or trial runs, done in preparation for major study. Pilot study was conducted on 29-06-2020 and 30-06-2020. Ten adolescent girls who fulfill the inclusion criteria were selected, obtain written consent from them by establishing good rapport and the samples selected for pilot study was based on the non probability convenient sampling. Investigator administered the questionnaire to assess the level of knowledge regarding hypothyroidism and its effects among adolescent girls and instructions were given to them to answer the questions frankly. After the questionnaire was answered the booklet which contains the information on hypothyroidism was given to the participants for future reference. Statistical analysis was done by using descriptive and inferential statistics.

PROCEDURE FOR DATA COLLECTION: The data was collected from adolescent girls of government schools of Pakala i.e. who fulfill the inclusive criteria. Consent was taken from participants by explaining the purpose of the study. The self-administered questionnaire was used to assess knowledge on hypothyroidism and its effects among adolescent girls. The data was collected on 02-07-2020 between 10 to 4 pm from 20 samples, and on 03-07-2020 between 10-4 pm from 20 samples and 04-07-2020 between 10-4 pm from 20 samples, and 06-07-2020 between 10-4 pm from 20 samples and 07-07-2020 between 10-4pm from 20 samples. Total duration of data collection was five days.

RESULTS

- With regard to the level of knowledge regarding hypothyroidism and its effects out of 100 adolescent girls, majority of samples 55 (55%) had moderate knowledge, 24(24%) of samples had inadequate knowledge, 21(21%) of samples had adequate knowledge. The mean knowledge score was 31.65 and the standard deviation was 7.019.
- There was significant association between the level of knowledge and selected socio demographic variables like Educational status of mother, father, Occupational status of father and Residence, significant at $p < 0.01$ level and some of socio demographic variables such as Age in years, Occupational status of mother, Type of family, Monthly family income significant at $p<0.05$. Hence Ho1 hypothesis was rejected.

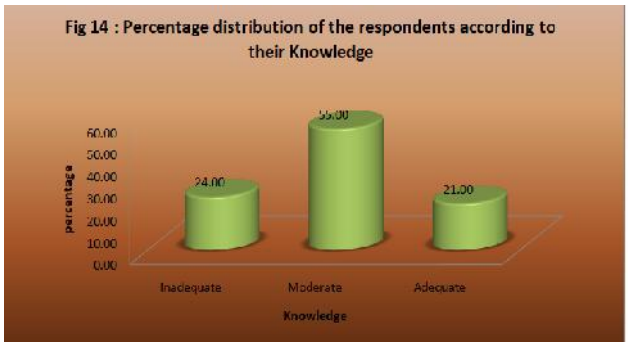
DISCUSSION

The discussion of the present study is based on the findings obtained from the descriptive statistical analysis of the collected data.

The first objective of the study was to assess the level of knowledge regarding hypothyroidism and its effects among adolescent girls: Out of 100 adolescent girls, majority of samples 55% had moderate knowledge, followed by 24% of samples had inadequate knowledge and only 21% of samples had adequate knowledge. The Findings were supported by a study conducted by P.Meena (2018). A total of 50 samples were received during the study to assess the knowledge regarding hypothyroidism and its effects among

Table 1. The schedule adopted for data Collection procedure.

Date	Time	Number of Samples per Day	Duration of Data collection
02-07-2020	10-4 pm	20	5 hours
03-07-2020	10-4 pm	20	5 hours
04-07-2020	10-4 pm	20	5 hours
06-07-2020	10-4 pm	20	5 hours
07-07-2020	10-4 pm	20	5 hours



adolescent girls in OPD at SMCH Chennai .majority of adolescent girls possessed regarding hypothyroidism 38(76%) members had inadequate knowledge, 12(24%) members had moderate level of knowledge. Finally the study revealed that majority of adolescent girls attending medicine OPD has inadequate knowledge on hypothyroidism.

The second objective of the study was to determine an association between the level of knowledge regarding hypothyroidism and its effects among adolescent girls with their selected socio-demographic variables: There was significant association between the level of knowledge and selected socio demographic variables like Educational status of mother, father, Occupational status of father and Residence, significant at $p < 0.01$ level and some of socio demographic variables such as Age in years, Occupational status of mother, Type of family, Monthly family income significant at $p<0.05$. There was no significant association between level of knowledge and demographic variables like religion and standard of study. Hence Ho1 was rejected.

The third objective of the study was to develop and distribute information booklet for adolescent girls regarding hypothyroidism and its effects: Accordingly, after collecting the information from adolescent girls the information booklet was distributed and sample were satisfied.

CONCLUSION

- In this study most of the adolescent girls had moderate and inadequate knowledge regarding hypothyroidism.
- There was a significant association between the level of knowledge and selected socio demographic variables like Educational status of mother, father, Occupational status of father and Residence, significant at $p < 0.01$ level and some of socio demographic variables such as Age in years, Occupational status of mother, Type of family, Monthly family income significant at $p<0.05$ level.
- These findings suggested extensive health education programs were needed to improve the knowledge regarding causes, risk factors, signs and symptoms and management of hypothyroidism and its effects among adolescent girls to bring out healthy community.

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