



INCIDENCE OF PHYSIOLOGICAL GOITRE AMONG STUDENTS AGED 17-25 YEARS A QUESTIONNAIRE BASED STUDY

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ABSTRACT

Aim : To identify whether young adults aged 17-25 years have signs of physiological goitre.

Objective : To identify the incidences of goitre and its effects among the young adults. Background: Physiological goitre presents as a uniform, smooth, painless swelling of the thyroid gland, mainly in girls and women between 17 and 25 especially during menstruation and pregnancy. It appears to be about equally common everywhere

Reasons : Physiological goitre is harmless but it can lead to thyroid dysfunction later in life. Hence awareness and knowledge about the same is necessary. Therefore the survey helps to assess the issue.

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INTRODUCTION

A simple goitre can occur without a known reason. It can occur when the thyroid gland is not able to make enough thyroid hormone to meet the body's needs. This can be due to, for example, a lack of iodine in a person's diet. To make up for the shortage of thyroid hormone, the thyroid gland grows larger. All forms of thyroid disorders like nontoxic goitre, Graves' disease, Hashimoto's thyroiditis and thyroid neoplasm are more common in females than males¹. Puberty is a crucial period of hormonal interactions and tissue growth in the human life cycle². Marked changes in thyroid function occur during puberty as an adaptation to body and sexual development. Thyroid disorders can adversely affect somatic and sexual growth and development during puberty³. This could be the reason why disorders affecting the thyroid gland are common in adolescents⁴. It usually regresses, but occasionally it may persist, enlarge and become nodular depending on many factors like sex, family history, iodine intake and thyroid autoimmunity.

Thyroid disorders in adolescents may present as goitre, a nodule or a general cluster of abnormal symptoms and physical findings. The etiology and clinical presentation of thyroid disorders in adolescents substantially differ from that in adults⁵. Female adolescents need special care as thyroid hormones play their role in the cellular metabolism, growth

and development. Thyroid nodules, although common in general population (5-7%)⁶, but less so in children or adolescents^{7,8}. Iodine deficiency (ID) has multiple adverse effects on the growth and development in animals and humans. They result from inadequate thyroid hormone production, due to lack of sufficient iodine intake⁹. If physiological iodine requirements are not met, abnormalities of thyroid development and function may occur. Following studies,^{10,11} it was hypothesised that iodine deficiency may be increasing and causing goitre in urban populations^{12,13}.

METHODS AND MATERIALS

Females aged 18-25 years were selected for the study. An online survey was conducted and 100 young adults who had thyroid issues as well as those who did not have any such issues took part in it. Each person's history was also noted for reference purposes.

Table 1 Questionnaire

- ✓ Age:
- ✓ At what age did you attain puberty?
- ✓ Are you married?
- ✓ Have you noticed any swelling in your neck that is could be an enlarged thyroid gland?
- ✓ If yes, at what age did you notice?
- ✓ Is the swelling related to menstruation?
- ✓ If you had been pregnant, was the swelling related to it?
- ✓ Does the swelling move with swallowing?
- ✓ Have you noticed any changes in your body weight?

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- ✓ If yes, has your weight increased or decreased?
- ✓ What is the time interval between your periods?
- ✓ Did u notice any changes in the menstrual pattern?
- ✓ How long does bleeding occur?
- ✓ Is it heavy bleeding or less?

- ✓ Are you having hair loss?
- ✓ Do you have altered bowel movement?
- ✓ If yes, is the frequency increased or decreased?
- ✓ Do you have palpitations?
- ✓ Do you include iodised salt in your food?
- ✓ Does anyone in your family have thyroid disorders?

RESULTS AND DISCUSSION

Have you noticed any swelling in your neck that is could be an enlarged thyroid gland?

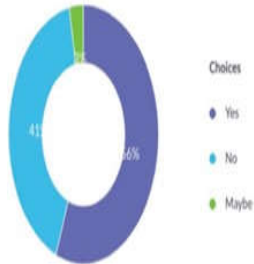


Fig 1

Does the swelling move with swallowing?

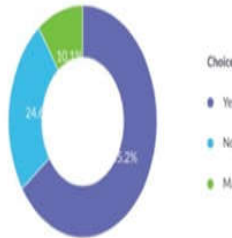


Fig 2

Have you noticed any changes in your Body weight?

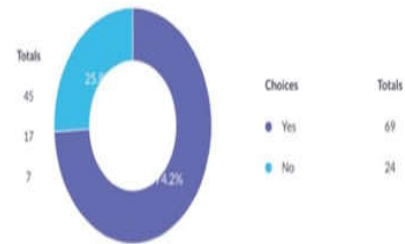


Fig 3

If yes, has your weight increased or decreased?

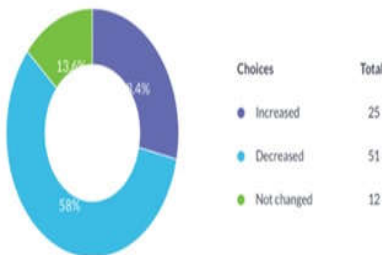


Fig 4

Have u noticed altered bowel movement?



Fig 5

If yes, is the frequency increased Or decreased?

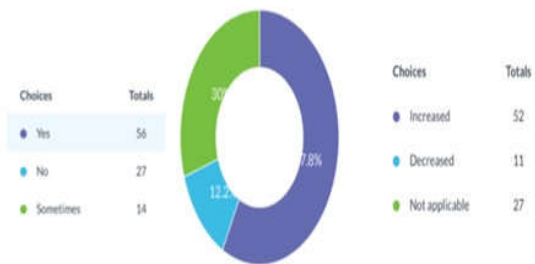


Fig 6

Is the swelling related to Menstruation?

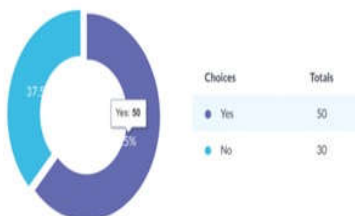


Fig 7

Did u notice any changes in the menstrual pattern?

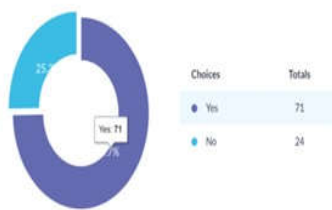


Fig 8

Does anyone in your family or friends have thyroid disorders

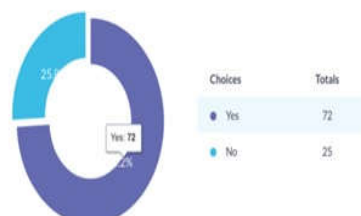


Fig 9

100 students of the age group 17-25 years participated in the survey. 56% of young adults noticed a swelling in the neck and 41% of them did not have swelling whereas 3% were doubtful about the swelling (fig 1). People with thyroid disorders usually present with an enlargement of the thyroid gland (goitre), with or without symptoms of thyroid hormone deficiency or excess. In a clinic-based study from Mumbai, In women, the prevalence of goitre was higher, at 11.4%, when compared with men, in whom the prevalence was 6.2%¹⁴. When compared with the survey done online, there is a difference in the percentages as the individual attempting the survey does not have proper guidance with the diagnosis regarding goitre. 45% young adults of the 56% noticed the swelling moves with swallowing and 17% did not notice movement (fig 2).

In another study, goitre was present in 55.2% of students aged 10-21 years in the Kalkajee area of New Delhi and in 54.7% of students from the Chandni Chowk area of the old walled city. Goitre was more common and larger in girls¹⁵. In a study done in Belgaum district of Karnataka State, it was found that the prevalence of goitre is 24% among (20-29) years age group. Females have a higher likelihood of goiter¹⁶. Shanker *et al.* conducted a house to house survey in Sikkim to determine the prevalence of goiter and found out that overall goiter prevalence was 54%. In Goiter prevalence in males was 48.6% and in females was 59.6% and this difference was statistically significant¹⁷. 69% young adults noticed weight changes and 24% did not notice weight changes (fig 3). 51% young adults noticed that the weight has decreased which might be a sign of hyperthyroidism (fig 4). The prevalence of hyperthyroidism has been studied in several studies. In an epidemiological study from Cochin, subclinical and overt hyperthyroidism were present in 1.6% and 1.3% of subjects participating in a community survey¹⁸. Here also there is a vast difference in the percentages calculated, this suggests that the individual has not done proper clinical diagnosis. 56% young adults noticed altered bowel movement (fig 5) and 52% noticed an increase in bowel movement which could also be a sign of hyperthyroidism while 11% students notice decreased bowel movement (fig 6). Epidemiological studies have shown that pattern of thyroid dysfunction in a community is largely determined by iodine intake level¹⁹. But in the present age, in India, every individual consumes iodised salt, hence low iodine intake level as a reason for goitre is less prevalent. 50% females noticed that the swelling was related to menstruation (fig 7) and almost 71% females noticed some changes during the menstrual period (fig 8).

A total of 178 women between the age of 13 and 46 years, and who were referred to the Thyroid clinic of the KEM Hospital between January to April 1991, were included in a study that was conducted in Mumbai. All types of menstrual abnormalities were common among the female. In more than 45% of cases in the study groups (euthyroid, hypothyroid, hyperthyroid) the menstrual abnormality occurred before the onset of disease. In the remaining it started along with the disease or later. In the study they have observed that all types of menstrual abnormalities were significantly more frequent in women with hypo- or hyperthyroidism. Another striking feature was that in more than 45% of cases with hypo/hyperthyroidism the menstrual abnormality preceded the appearance of goitre or clinical symptoms and signs, sometimes by a period of several years²⁰.

CONCLUSION

The study finds that Goitre is more common among women especially in the age category of 17-25 years and thus the young adults must not be ignorant towards it. The study gives us a broad information and knowledge regarding the topic. By comparing the survey conducted for these young adults with the various other studies done on the topic, it is understood that the prevalence of goitre has increased over the years. The proper diagnosis of goitre can only be done through a clinical examination by a doctor, as an online survey cannot be completely valid. A large number of people are unaware of goitre and its related symptoms. Physiological goitre is not harmful, but knowledge regarding the same is necessary.

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