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Research Article

A Cross-Sectional Study to Assess the Awareness Regarding Thyroid Disorders among the General Population in the Northern State of India

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Abstract: ***Background:*** Numerous endocrine conditions affect the thyroid. Most of the time, these ailments are not correctly diagnosed. Patients may generally go untreated because of a lack of knowledge and understanding of the impacts of thyroid disorders. This study intends to determine the general public's degree of knowledge of thyroid disease signs, risk factors, and preventive measures. ***Material & Methods:*** This cross-sectional survey of residents of Punjab was carried out between March 2022 and April 2022 using Google forms. Until 400 replies were gathered, the questionnaire was distributed among state citizens in rural and urban areas via email and social media sites such as WhatsApp groups, Facebook, Instagram, and LinkedIn. We collected data on their socio-demographic traits and awareness about Thyroid Disorders. Epi info v7 software was used to evaluate the data using the necessary statistical tests. ***Results:*** A total of 400 respondents participated in the study, with 237 (59.25%) coming from rural areas and 163 (40.75%) from urban areas. The majority's participants included 387 (96.75 percent) Hindus, 269 (67.25 percent) males, 173 (43.25 percent) people in their 18 to 30s, 155 (38.75 percent) graduates, 266 (66.5 percent) working people, 238 (59.5 percent) married people. In the current study, 76 (19.0 percent) of the participants had perfect awareness about Thyroid Disorders (32-40 marks), 169 (42.25 percent) had good awareness and perception (24-31 marks), 132 (33.0 percent) had fair awareness and perception (16-23 effects), and 23 (5.7 percent) had a poor understanding (<16 marks). ***Conclusion:*** The survey results showed that the general public's understanding of the thyroid gland, its functions, risk factors, causes of thyroid disease, clinical symptoms, and prevention of thyroid disorders were either insufficient or unsatisfactory. The current study supports public education initiatives and awareness efforts on thyroid problems.

Keywords: Assessment, Awareness, Thyroid Disorders, General Population, Punjab.

INTRODUCTION

The largest endocrine gland in the human body is believed to be the thyroid gland, which is located in the front of the neck. It creates and releases thyroid hormones, significantly impacting protein synthesis and basal metabolic rate (BMR). Additionally, these hormones are crucial for maintaining adults' healthy physiological functioning as well as children's and teenagers' developing neurocognitive abilities.1-3

Thyroid problems include thyroid gland hypertrophy and thyroid hormone over- or under-secretion. Thyroid disorders can be either primary (having a direct connection to the gland) or secondary (thyroid dysfunction due to other factors). These infections have been reported in more than 110 countries, putting 1.6 billion people at risk.4,5

Thyroid dysfunction is one of the most common medical conditions in the globe. If thyroid disorders are not treated, they may negatively affect a patient's quality of life. The condition's nature significantly impacts the clinical signs and symptoms of a thyroid issue, which can influence numerous physiological systems. Furthermore, because the bulk of the symptoms is not specific, thyroid disorders can be easily neglected or confused with other medical conditions.6,7

Being one of the most under-diagnosed and neglected medical problems, thyroid diseases, the lack of general information among patients may be of significant concern. The problem can be understood by many people who have thyroid dysfunction but are unaware of it. Most patients will likely go undiagnosed if the thyroid gland and the patient's symptoms are not understood.8-10

In Punjab, there aren't many studies that look at people's general knowledge about thyroid issues. As a result, this study aims to determine how knowledgeable the people of Punjab are about the signs, danger signs, and safety precautions related to thyroid issues.

Objectives of the Study

To evaluate the awareness regarding Thyroid Disorders, their symptoms, risk factors, and preventive measures among the General Population of Punjab.

RESEARCH METHODOLOGY

- Research Approach -Descriptive
- Research Design- Cross-sectional survey design
- Study area: Whole state of Punjab
- Study duration- between March 2022 and April 2022
- Study population: All adults above 18 years old who stayed in Punjab for 12 months or more.
- Sample size- 400 Adults assuming 50% have adequate knowledge regarding Thyroid Disorders, 5% absolute error, 95% confidence level, and 5% non-response rate.
- Sampling Technique- convenience & snowball Sampling technique
- Study tool: A google form questionnaire consisting of questions regarding socio-demography, Awareness regarding Thyroid Disorders, their symptoms, risk factors, and preventive measures were created. The questionnaire was initially pre-tested on a small number of people to identify any difficulty in understanding by the respondents.
- **Description of Tool-**
  a) Demographic data survey instrument: The demographic form elicited information on participants' backgrounds: age, gender, marital status, religion, employment, education, and many more.
  b) Questionnaire: The questionnaire contains 30 structured questions regarding Awareness of Thyroid Disorders, their symptoms, risk factors, and preventive measures having three options, i.e., Yes, No & Don't Know. The participants have to choose the right one. One mark was given for each correct answer and zeroed for the incorrect answer. The maximum score was 30, and the minimum score was zero. Scoring was done on the basis of marks as >80%(24-30)=very good,60-79%(18-23) =Good,41-59% (12-17)=Fair,<40% (< 12)=poor
- Validity of tool - by the experts in this field
- Inclusive Criteria- who were willing to participate in the study.
- Exclusion Criteria: who were not willing to participate in the study
- Data collection- Data was collected under the guidance of supervisors. The google form questionnaire was circulated via online modes like email and social media platforms like WhatsApp groups, Facebook, Instagram, and LinkedIn in both rural and urban areas of Punjab till the 400 responses were collected. Responses were then recorded in a Google Excel spreadsheet.
- Data analysis was collected and entered in a Microsoft Excel spreadsheet, cleaned for errors, and analyzed with Epi Info V7 Software with an appropriate statistical test for frequencies and percentages.
- Ethical Considerations- Participants' confidentiality and anonymity were maintained.

RESULTS

The present study was a cross-sectional descriptive study to evaluate the awareness of Thyroid Disorders, their symptoms, risk factors, and preventive measures among the general population of Punjab.

A total of 400 respondents participated in the study, with 237 (59.25%) coming from rural areas and 163 (40.75%) from urban areas. The majority's participants included 387 (96.75 percent) Hindus, 269 (67.25 percent) males, 173 (43.25 percent) people in their 18 to 30s, 155 (38.75 percent) graduates, 266 (66.5 percent) working people, 238 (59.5 percent) married people.

Table-1: Socio-Demographic Characteristics of Study Participants

Socio-demographic Variables		Frequency	Percent
Area	Urban	163	40.75
	Rural	237	59.25
Gender	Males	269	67.25
	Females	131	32.75
Age	18-30	173	43.25
	31-40	132	33
	41-50	55	13.75
	51-60	33	8.25
	61-70	7	1.75
Education	Graduate	155	38.75
	Intermediate	121	30.25
	Matriculate	62	15.5
	Middle	26	6.5

	Post Graduate	36	9
Occupation	Employed	266	66.5
	Unemployed	134	33.5
Marital status	Married	238	59.5
	Unmarried/ Divorce	162	40.5
Religion	Hindu	387	96.75
	Muslim	3	0.75
	Sikh	4	1
	Others	6	1.5
Total		400	100

Table-2: Awareness about Thyroid Disorders, its symptoms, risk factors and preventive measures among participants

S.No.	Awareness about Thyroid Disorder	Correct Response	Percent
	Knowledge about the thyroid gland, its functions, Risk factor & causes of thyroid disease		
1.	The thyroid gland is an endocrine gland	293	73.25
2.	Thyroid dysfunction affects brain development	267	66.75
3.	Thyroid dysfunction affects the blood cholesterol level	43	10.75
4.	Thyroid dysfunction results in cardiac diseases	80	20
5.	Exercise and Sports affect thyroid dysfunction	128	32
6.	Thyroid dysfunction is genetic	81	20.25
7.	Smoking is a risk factor for thyroid diseases	190	47.5
8.	Radiation exposure is a risk factor for thyroid diseases	206	51.5
9.	Insufficient or excess iodine intake is a risk factor for thyroid diseases	270	67.5
10	Females are more at risk of having thyroid diseases	293	73.25
11	Pregnancy and the postpartum period are risk factors for thyroid diseases	219	54.75
12	Medication like Amiodarone is a risk factor for thyroid diseases	86	21.5
13	Lithium intake is a risk factor for thyroid diseases	110	27.5
	Knowledge about the clinical picture of thyroid disorders		
14	The sudden increase in weight is a symptom of hypothyroidism	292	73
15	Fatigability and sleepiness are manifestations of hypothyroidism	260	65
16	Skin and hair dryness are symptoms of hypothyroidism	118	29.5
17	Feeling cold in hot weather is a symptom of hypothyroidism	144	36
18	Loss of weight despite good appetite is a symptom of hyperthyroidism	194	48.5
19	Insomnia and lack of sleep are symptoms of hyperthyroidism Respondents	191	47.75
20	Increased heart rate is a symptom of hyperthyroidism	211	52.75
21	Inability to stand hot weather and wearing light clothes in cold weather are symptoms of hyperthyroidism	137	34.25
22	Oligomenorrhea and amenorrhea are symptoms of hyperthyroidism	161	40.25
23	Neck lump can be a sign of thyroid diseases	220	55
24	Fatigue can be a symptom of thyroid diseases	172	43
25	Diarrhea, constipation, or stomachache can be symptoms of thyroid diseases	109	27.25
26	Skin and nail changes or hair loss can be signs of thyroid diseases	86	21.5
27	Bulging eyes can be a sign of thyroid diseases	111	27.75
	Knowledge about the prevention of thyroid disorders		
28	Away from Soya and Goitrogenic foods is one of the preventive ways from thyroid diseases	191	47.75
29	Early thyroid function tests can prevent the complication of thyroid disease	210	52.5
30	Well-balanced diet is essential to prevent thyroid diseases	200	50

Table 3: Awareness about Thyroid Disorders among study participants

Category (Marks)	Awareness about Thyroid Disorders (n=400)	Percent
V. Good (32-40)	76	19
Good (24-31)	169	42.25
Fair (16-23)	132	33
Poor (<16)	23	5.75
Total	400	100

In the present study 76 (19.0%) study participants had very good (32-40 marks) awareness about Thyroid Disorders, 169 (42.25%) had good (24-31 marks), 132 (33.0%) had fair (16-23 marks) and 23(5.75%) had poor (<16 marks) awareness about Thyroid Disorders.

DISCUSSION

The lack of general patient understanding may be of great concern as thyroid disorders are one of the most underdiagnosed and ignored medical conditions. Many people with thyroid disease who are ignorant of their condition can benefit from awareness.1,9

This cross-sectional community-based study was conducted to evaluate the awareness of the thyroid gland, its function, its disorders, and the risk factors affecting thyroid disorders among the general population of Punjab.

In the present study 76 (19.0%) study participants had very good (32-40 marks) awareness about Thyroid Disorders, 169 (42.25%) had good (24-31 marks), 132 (33.0%) had fair (16-23 marks) and 23(5.75%) had poor (<16 marks) awareness about Thyroid Disorders

Similarly in the study done by Abdulwahab Alyahya *et al.*,[1], the overall mean knowledge score regarding thyroid disease manifestations and its risk factors was 8.67 (SD 3.69) with 44.7%, 41.2%, and 14.2% were classified into low, average, and high knowledge, respectively. Another study by Assem Saleh Ali Almuzain *et al.*,[11] showed that 57.32% of respondents had good knowledge, whereas 42.68% had poor knowledge of thyroid disorder diseases.

Patients would be more drug-compliant, follow up more frequently, and provide the correct information to their family and friends if they were more informed about their thyroid disease.

Limitations

The sample size and duration of the study are restricted to 400 respondents and two months in time; thus, the scope and extent of the conducted research might be minimized. This survey was conducted only in one state of India; hence, these findings cannot be generalized all over India.

CONCLUSION

The survey results showed that the general public's understanding of the thyroid gland, its functions, risk factors, causes of thyroid disease, clinical symptoms, and prevention of thyroid disorders were either insufficient or unsatisfactory. The current study supports public education initiatives and awareness efforts on thyroid problems. The health authorities should arrange more effective health education events to increase the general public's and their caregivers' understanding of the numerous features of thyroid problems and the need for early detection and sufficient control.

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