

Occurrence and knowledge of thyroid disorder in Jhansi District

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ABSTRACT

Lifestyle of human beings have changed drastically due to the industrial age, increasing work, living speed, longer work schedules, and various psychological pressures, which have led to an increased incidences of obesity, various types of cancers and hormonal imbalance viz diabetes, thyroid disorders, infertility etc. Among one of them is Thyroid disorder. Thyroid hormones are essential for normal development and growth of many tissues, including the brain, the skeleton and mental ability. An underactive thyroid produces too little thyroid hormone, ie Thyroxine (T_3/T_4) resulting in hypothyroidism. The thyroid gland can become enlarged than normal and can be felt under the skin at the front of the neck, known as Goiter which is common in Sub-Himalayan region. Graves's disease, an autoimmune disease is the most common cause of hyperthyroidism. The condition makes a person's immune system produce abnormal antibodies, makes the thyroid gland to produce more thyroid hormones. This causes heavy weight loss and loss of appetite.

With recent advances in medical and nutritional sciences, natural products and health-promoting received extensive attention in the public. To achieve better quality of life. People started eating more vegetables, fruits, dietary supplements, nutraceuticals, phytotherapeutical substances and other plant food. The demand for nutraceuticals and phytonutrients has increased over the past few years and they are being used by people for various therapeutic outcomes. Present study deals with the effect of knowledge and occurrence of thyroid disorders in various sexes in rural & urban areas in Jhansi city.

Key Words: Thyroxine, Hypothyroidism, rural, urban, Thyroxine.

Introduction

The thyroid gland is butterfly-shaped organ located at the front of the neck, and is normally controlled by a gland in the brain known as the pituitary gland. The pituitary communicates to

maintain T_3 and T_4 balance by the virtue of TSH. Though the thyroid is small, it's a major gland in the endocrine system and affects nearly every organ the body. It regulates fat and carbohydrate metabolism, respiration, body temperature, brain development, cholesterol levels, the heart and nervous system, blood calcium levels, menstrual cycles, skin integrity, and more.

The most common thyroid condition is hypothyroidism, or underactive thyroid. In the United States, hypothyroidism usually is caused by an autoimmune response known as Hashimoto's disease or autoimmune thyroiditis. As with all autoimmune diseases, the body mistakenly identifies its own tissues as an invader and attacks them until the organ is destroyed. This chronic attack eventually prevents the thyroid from releasing adequate levels of the hormones T_3 and T_4 , which are necessary to keep the body functioning properly. The lack of these hormones can slow down metabolism and cause weight gain, fatigue, dry skin and hair, and difficulty concentrating. Hashimoto's affects approximately 5% of the US population, is seven times more prevalent in women than men, and generally occurs during middle age.

Hyperthyroidism, or overactive thyroid gland, is another common thyroid condition. The most prevalent form is Graves' disease in which the body's autoimmune response causes the thyroid gland to produce too much T_3 and T_4 . Symptoms of hyperthyroidism can include weight loss, high blood pressure, diarrhea, and a rapid heartbeat. Graves' disease also disproportionately affects women and typically presents before the age of 40.

The hypothalamus produces TSH releasing Hormone (TRH) that signals the pituitary to tell the thyroid gland to produce more or less of T_3 and T_4 by either increasing or decreasing the release of a hormone called thyroid stimulating hormones (TSH). When the pituitary release thyroid stimulating hormone (TSH), the thyroid secretes two kinds of hormones Triiodothyronine (T_3) and thyroxin (T_4) in to the blood stream. When T_3 and T_4 levels are low in the blood, the pituitary gland releases more TSH to tell the thyroid gland to produce more thyroid hormones. If T_3 and T_4 levels are high, the pituitary gland releases less TSH to the thyroid gland to slow down the production of these.

In recent years, a new diet health paradigm is evolving which place more emphasis on the positive aspect of diet. The new lifestyle adopted by people today has changed the basic food habits of the latter. Consumption of the junk food has increased manifold leading to a number of diseases caused due to improper nutrition. Obesity is now recognized as a global issue. Heart

disease continues to be a primary cause of death in most of the developing countries worldwide, followed by cancer, osteoporosis, arthritis and many others. In the same way excess consumption of Goitrogenic food, bad lifestyle and unawareness lead to disorders and people are not aware of it.

Material & Methods: The study was done in rural & urban areas of Jhansi city. The data about of 300 females and males were collected from various Thyrocare labs and was analyzed statistically using F-test for.

Result and Discussion:

Table No:1 table showing the sample size of the three variables: Area of residence, gender and the presence of thyroid disorder (hyperthyroidism/hypothyroidism)

Between-Subject Factors

Variable		N
Area	Urban	205
	Rural	95
Gender	Male	150
	Female	150
Thyroid disorder	hyperthyroidism	147
	hypothyroidism	153

Table No:2 table showing the measures of descriptive statistics (Mean and Standard deviation) of knowledge scores of patient belonging to different groups: Area of residence, Gender and presence of thyroid disorder (hyperthyroidism/hypothyroidism)

Description Statistics

Area	Gender	Thyroiddisorder	mean	St.deviation	N
Urban	male	hyperthyroidism	3.0000	1.43223	40
		Hypothyroidism	6.5000	1.69332	50
		Total	4.9444	2.35291	90
	female	hyperthyroidism	2.9512	1.44830	41

		Hypothyroidism	6.5000	1.69811	74
		Total	5.2348	2.34457	115
	Total	hyperthyroidism	2.9753	1.43157	81
		Hypothyroidism	6.5000	1.68928	124
		Total	5.1073	2.34692	205
Rural	male	hyperthyroidism	2.7442	1.48152	43
		Hypothyroidism	2.8824	1.45269	17
		Total	2.7833	1.46243	60
	female	hyperthyroidism	3.1304	1.42396	23
		Hypothyroidism	5.0000	1.65145	12
		Total	3.7714	1.73351	35
	Total	hyperthyroidism	2.8788	1.46251	66
		Hypothyroidism	3.7586	1.84498	29
		Total	3.1474	1.63061	95
Total	male	hyperthyroidism	2.8675	1.45477	83
		Hypothyroidism	5.5821	2.27069	67
		Total	4.0800	2.29829	150
	female	hyperthyroidism	3.0156	1.43086	64
		Hypothyroidism	6.2907	1.76146	86
		Total	4.8933	2.29720	150
	total	hyperthyroidism	2.9320	1.44136	147
		Hypothyroidism	5.9804	2.02443	153
		Total	4.4887	2.32979	300

Table No:3 Summary of @2X2X2 factorial ANOVA of final scores of knowledge about the disease of patients belonging to different groups: Area of residence, Gender and the presence of thyroid disorder (hyperthyroidism/hypothyroidism)

Test of Between-Subject effects

Source	Type III sum of Squares	df	Mean Square	F	Significance
Area		1	92.463	37.737	.000
Gender		1	20.657	8.431	.004
Thyroiddisorder		1	281.089	114.720	.000
Area *gender		1	22.331	9.114	.003
Area*thyroiddisorder		1	87.089	35.544	.000
Gender*thyroiddisorder		1	10.861	4.432	.036
Area*gender*Thyroiddisorder		1	9.703	3.960	.048
Error		292	2.450		
Total		300			
Corrected Total		299			

In the present study 300 data was collected from urban and rural areas. Out of which 205 from urban and 95 from rural, out of which total male and female were 150 each. The disorder studied was thyroid disorder in which 147 people were reported to be suffering from hyperthyroidism and 153 were suffering from hypothyroidism. The data was further analyzed statically in table no.1.

From the table no: 3, it is evident that the f value for Area being **37.737** is significant with $df = 1/292$. It indicates that the mean scores of *knowledge regarding the disease* of the subjects belonging to urban and rural areas of residence differ significantly. Thus the null hypothesis, stated, “There will be no significant difference in the mean scores of *knowledge regarding the disease* of the subjects belonging to urban and rural areas of residence” is rejected. It is concluded that the patients living in urban areas of locality had more disease knowledge compared to those in rural areas. This supports the fact that the rural areas have to be accomplished with many health awareness programme and also health educating campaigns

From the table no: 3, it is evident that the f value for Gender being **8.431** is significant with $df = 1/292$. It indicates that the mean scores of *knowledge regarding the disease* of the male and female patients differ significantly. Thus the null hypothesis, stated, “There will be no significant difference in the mean scores of *knowledge regarding the disease* betweenmale and

female patients” is rejected. It is therefore concluded that the female patients had more disease knowledge compared to those of male patients as in general the women in India are more fitness oriented and well informed basically because of their interests.

From the table no: 3, it is evident that the f value for thyroid disorder being **114.72** is significant with $df = 1/292$. It indicates that the mean scores of *knowledge regarding the disease* of (hyper and hypo thyroid) patients differ significantly. Thus the null hypothesis, stated, “There will be no significant difference in the mean scores of *knowledge regarding the disease* of hypothyroidism and hyperthyroidism patients” is rejected. It is therefore concluded that the hypothyroidism patients had more disease knowledge compared to those of hyperthyroidism patients. This is majorly because of the prevalence of hypothyroidism in society more and hence people are more aware of the disease than the hyperthyroidism.

From the table no: 3, it is evident that the f value for the interaction between AREA and GENDER being **9.114** is significant with $df = 1/292$. It indicates that the mean scores of *knowledge about disease* of the male and female subjects belonging to rural and urban area and of any interaction between the both differ significantly. Thus the null hypothesis, stated, “There will be no significant effect of AREA and GENDER and their interaction upon the mean scores of knowledge about the disease of subjects” is rejected. Therefore it may be concluded that the knowledge was found to be dependent of the interaction between AREA and GENDER of the subjects

From the table no: 3, it is evident that the f value for the interaction between AREA and DISORDER being **35.544** is significant with $df = 1/292$. It indicates that the mean scores of *knowledge about disease* of the subjects who are basically hypothyroidism and hyperthyroidism patients belonging to rural and urban area and of any interaction between the both differ significantly. Thus the null hypothesis, stated, “There will be no significant effect of AREA and DISORDER and their interaction upon the mean scores of knowledge about the disease of subjects” is rejected. Therefore it may be concluded that the knowledge was found to be dependent of the interaction between AREA and DISORDER of the subjects

From the table no: 3, it is evident that the f value for the interaction between GENDER and DISORDER being **4.432** is significant with $df = 1/292$. It indicates that the mean scores of

knowledge about disease of the subjects who are basically male and female hypothyroidism and hyperthyroidism patients and of any interaction between the both differ significantly. Thus the null hypothesis, stated, “There will be no significant effect of GENDER and DISORDER and their interaction upon the mean scores of knowledge about the disease of subjects” is rejected. Therefore it may be concluded that the knowledge was found to be dependent of the interaction between GENDER and DISORDER of the subjects

From the table no: 3, it is evident that the f value for the interaction among AREA GENDER and DISORDER being **3.960** is significant with $df = 1/292$. It indicates that the mean scores of *knowledge about disease* of the subjects who are basically male and female hypothyroidism and hyperthyroidism patients belonging to urban and rural areas and of any interaction among the three differ significantly. Thus the null hypothesis, stated, “There will be no significant effect of AREA GENDER and DISORDER and their interaction upon the mean scores of knowledge about the disease of subjects” is rejected. Therefore it may be concluded that the knowledge was found to be dependent of the interaction among AREA GENDER and DISORDER of the subjects

Conclusion

This study shows that patients with thyroid disorders lack knowledge. Education should take place at all levels and should include doctors, decision makers, health workers and citizen groups. Furthermore, messages regarding thyroid and its disorders should be included in the curriculum of primary schools, secondary schools, high schools, colleges, and universities to make people aware about thyroid disorder.

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