

Endocrine Disruptors and Impact of Nutritional Intervention on Hypothyroid Women - A Study in Kolkata

Swapan Banerjee

Department of Nutrition, Seacom Skills University, District - Birbhum, West Bengal, Pincode: 731236

Introduction

- As per recent study, altogether 22% persons in Kolkata were diagnosed with Hypothyroidism and among them majority were women. (*IJEM -2013*).
- In the city, due to imbalanced diet & sedentary lifestyles middle-aged working women are very much prone to obesity which often linked with so many diseases including hypothyroidism. In fact, now a days almost every female member of a family suffering from HT.
- So far there is scanty research & insufficient data on specific foods & chemicals as thyroid disruptors mainly responsible for hypothyroidism (subclinical, mild to moderate, overt stages). Hence the crucial time has come to start thinking about preventive measures considering 'food as medicine'-a dietary approach.

Objective

- To identify the various thyroid disruptors available in daily foods & relationship with sedentary lifestyles & obesity in women living in metro city.
- To find out the impact of basic awareness to patients on thyroid associated with obesity & common endocrine disruptors responsible for Hypothyroidism.

Methods

Study Design : A qualitative study with purposive sampling method was conducted based on all the subjects visited first time for Diet counselling & 2nd time for awareness camps with the common complaint obesity along with HT.

Study Duration: From May 2018 to October 2018 – total six months.

Study Setting : Considered 20 municipalities areas located in North Kolkata.

Subjects : Total 140 obese, hypothyroid female who attended the Paid Diet Consultation & 'Free Diet Camps' located in north Kolkata for the Thyroid Awareness, were enrolled.

Inclusion Criteria :

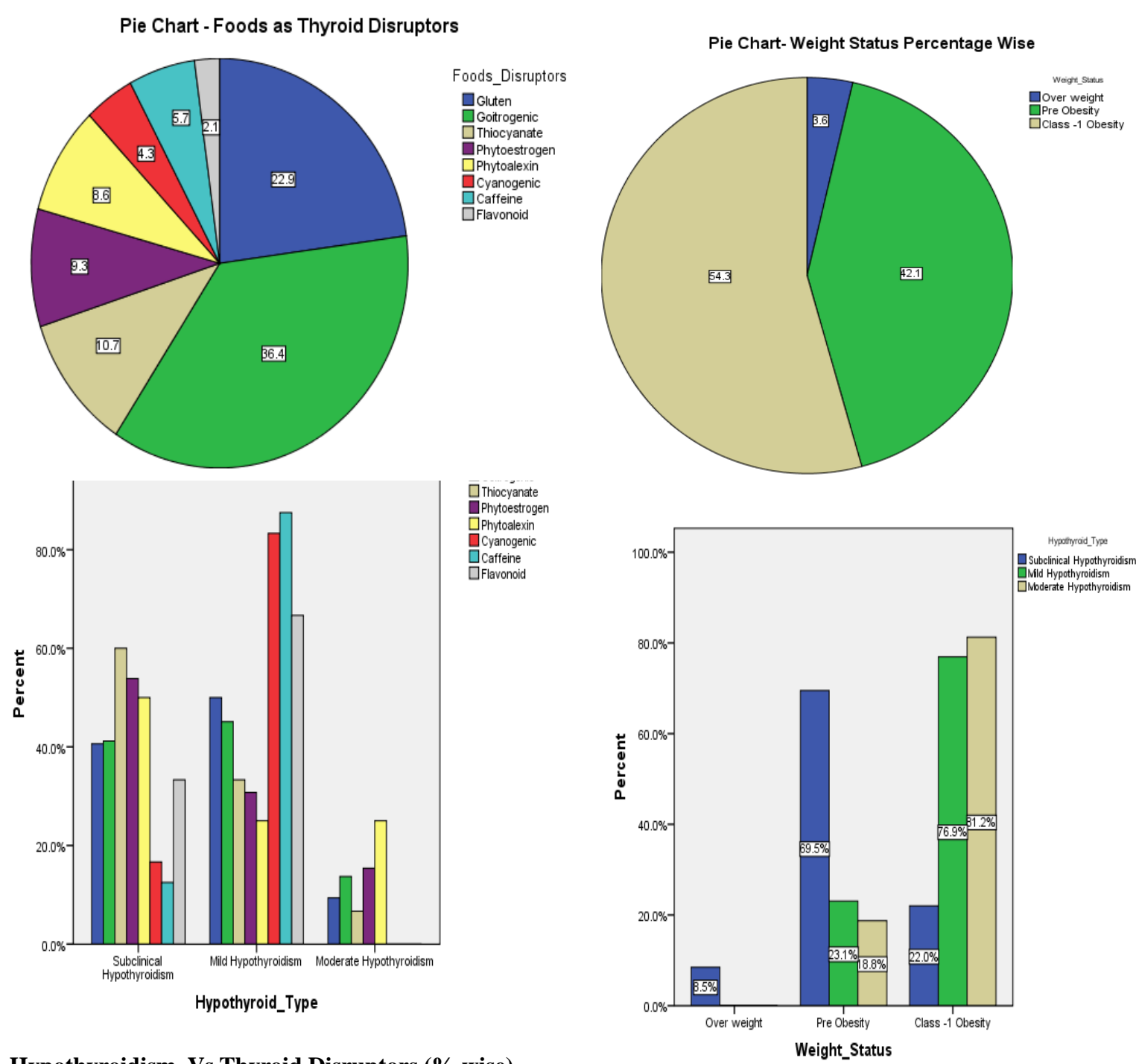
All overweight/ Obese based on BMI (Asian values) & Hypothyroidism.

All undergone TSH, T4 tests compulsorily but not T3 (not mandatory) by ECLIA method.

Exclusion Criteria :

Pregnant & diabetic women, Transferable Jobs not included.

Results – 1st Phase



Hypothyroidism Vs Thyroid Disruptors (% wise)

Hypothyroidism States Vs Weight Status (% wise)

Weight States	Frequency	Percent	Valid Percent	Cumulative Percent
Over weight	5	3.6	3.6	3.6
Pre Obesity	59	42.1	42.1	45.7
Class -1 Obesity	76	54.3	54.3	100.0
Total	140	100.0	100.0	

Hypothyroidism States	Frequency	Percent	Valid Percent	Cumulative Percent
Subclinical Hypothyroidism	59	42.1	42.1	42.1
Mild Hypothyroidism	65	46.4	46.4	88.6
Moderate Hypothyroidism	16	11.4	11.4	100.0
Total	140	100.0	100.0	

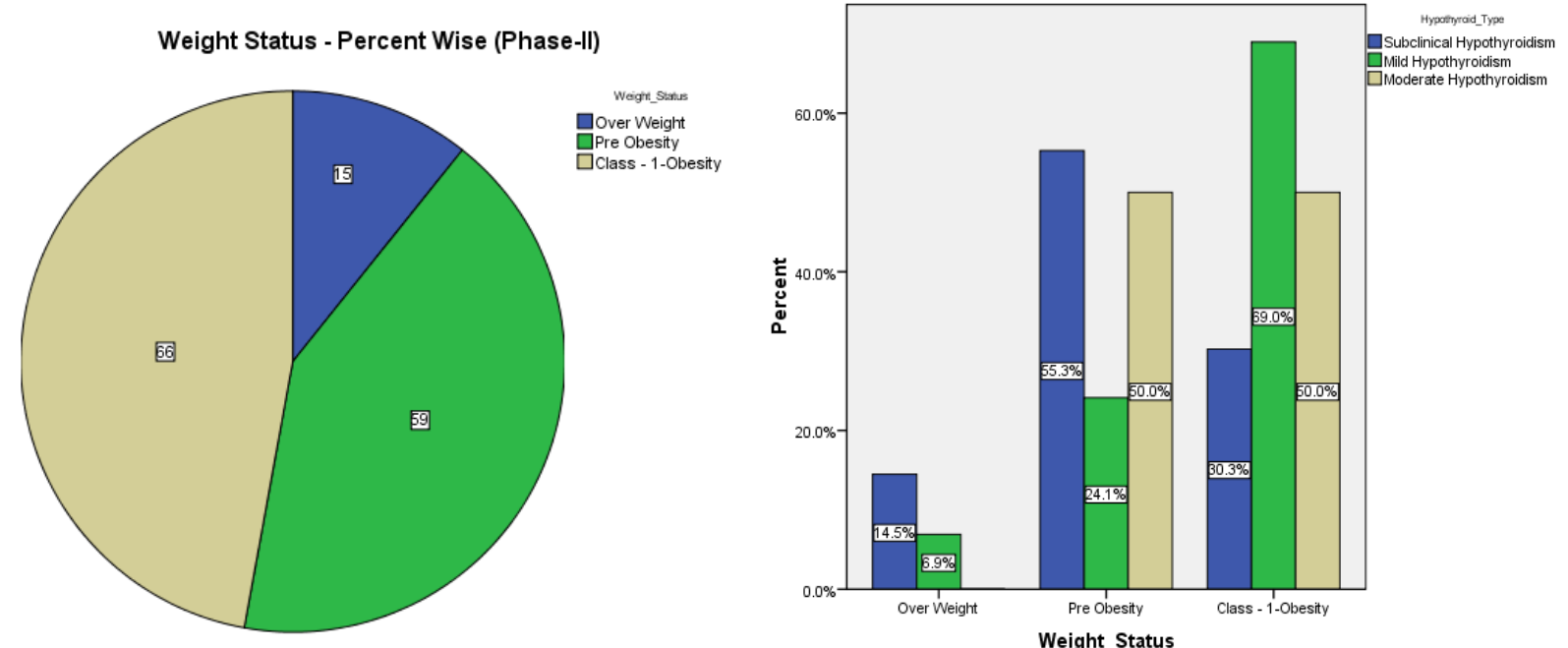
Disruptors	Frequency	Percent	Valid Percent	Cumulative Percent
Gluten	32	22.9	22.9	22.9
Goitrogenic	51	36.4	36.4	59.3
Thiocyanate	15	10.7	10.7	70.0
Phytoestrogen	13	9.3	9.3	79.3
Phytoalexin	12	8.6	8.6	87.9
Cyanogenic	6	4.3	4.3	92.1
Caffeine	8	5.7	5.7	97.9
Flavonoid	3	2.1	2.1	100.0
Total	140	100.0	100.0	

General & Patients Awareness Camps on Hypothyroidism & ED



Results – 2nd Phase

Hypothyroidism Vs Weight (% wise ; N=140)



Weight States	Frequency	Percent	Valid Percent	Cumulative Percent
Over Weight	15	10.7	10.7	10.7
Pre Obesity	59	42.1	42.1	52.9
Class -1-Obesity	66	47.1	47.1	100.0
Total	140	100.0	100.0	

Hypothyroid States	Frequency	Percent	Valid Percent	Cumulative Percent
Subclinical Hypothyroidism	76	54.3	54.3	54.3
Mild Hypothyroidism	58	41.4	41.4	95.7
Moderate Hypothyroidism	06	4.3	4.3	100.0
Total	140	100.0	100.0	

Weight Status	Pearson Correlation	Weight Status	Hypothyroid Type
		1	.305**
	Sig. (2-tailed)		.000
Hypothyroid Type	Pearson Correlation	.305**	1
	Sig. (2-tailed)	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Key Results

- Obesity class –I reduced from 76 to 66 (10 nos.) & significant progress on hypothyroidism like mild HT patients from 65 to 58 nos. & 16- 06 nos.in case of moderate HT. There was a positive correlation between weight (BMI parameter) and Hypothyroidism (at all states). $r = .305$; $p=.000$, ($p < .001$ or $P=0.000$ means $p < 0.0005$).
- Awareness camps conducted in general as well as patients & as a output got better results cum response on HT patients because of diet devoid of all thyroid disruptors (ED) duly followed by participants of the study as per observations since 1st phase till end of the 2nd phase.

Conclusions

- Endocrine disruptors substances which are thyroid disruptors available by & large in our daily foods identified in this study are some how responsible for the hypothyroidism in general. Further, obesity is one of the major issue and reason of HT.
- Awareness or basic education on Endocrine Disruptors and obesity to patients are very much useful & that can only help primarily to reduce the risks of hypothyroidism at subclinical to moderate stages in addition to medications.

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