A Study on prevalence of poly cystic ovary syndrome among college going girls-A Common, Major and Insensible Threat to Women's Fertility of Future Society

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Abstract

Background:

According to the NFHS-5 data, India's total fertility rate declines from 2.2 to 2.0. This Headline has become the recent sensation of our country. In spite of being an indicator of the significant progress of population control rate of our country, we can't still be pleasant with the truth. It raises the question of whether the fertility rate of the younger generation has declined significantly. The bitter answer is "yes". While there are many reasons behind the infertility of females, PCOS is witnessing to be the major reason which tops the list.

Objectives: To ascertain the frequency of polycystic ovary syndrome among teenage girls in Ramanathapuram District and also to assess the effect of healthy diet based lifestyle program on adolescent PCOS.

Materials and Procedures: cross sectional study was carried out among 100 college going Adolescent girls of age between 17-21 from various native background. Data were gathered through interviews with study participants using a self-designed, semi-structured questionnaire. Height, weight and waist circumference were taken as a part of survey. The samples provided the ultra sound scan of their lower abdomen for the study. Participants were neither compensated nor given any kind of gift in exchange for taking part in this study. Conclusion: Polycystic ovary syndrome was found in 24 of 100 samples. Despite the fact that Polycystic Ovary Syndrome (PCOS) is a prominent endocrine condition, only 47% of the samples were aware of it.

Key Word: Fertility Rate; Polycystic Ovary Syndrome; Adolescent girls; Endocrine disorder

Introduction:

Women are a diverse group of people attempting to preserve their health in the midst of a complex environment of cultural, psychological, social, and biological forces. (Marlene B. Goldman 1999).Currently India is home to 80 million adolescent girls. Women's reproductive health affects not just the women themselves, but also the health and development of future generations. It is necessary to address the health of adolescents if they are to make a healthy transition to adulthood. Nowadays, reproductive health is the major concern in the Southern part of Tamil Nadu.

“Polycystic ovary syndrome” (PCOS) is a condition which is also termed as “Hyper androgenic anovulation” characterized with frequent endocrine ailment in females of 12 to 45 years of age. PCOS is always associated with Hormonal imbalance due to the elevated secretion of Androgen [free testosterone and androstenedione] that results in a series of symptoms like Oligomenorrhea [infrequent menstrual periods], Hirsutism [excessive growth of facial or body hair in women], Alopecia [thinning hair on the head], acne and enlarged polycystic ovaries (PCO). It is still not clear what exactly causes PCOS. But it is proven that genetic factors play a vital in developing the condition and also prevalence of PCOS is high in women with ‘Insulin Resistance’. Unbalanced hormones and Unpredictable menstrual cycles makes the pregnancy complicate. Though there is no complete cure for PCOS, we can manage the symptoms and can keep its effect under control with available treatments and making some lifestyle and healthy eating changes. This Study will discuss about the Dietary changes that helps minimize the effect and creating awareness among young girls. Polycystic Ovary Syndrome (PCOS) is the most common cause of infertility. (Wood et al., 2007; Dumont et al., 2015). PCOS is a chronic condition linked to metabolic morbidities with early onset as well as reproductive complications. However, the higher frequency of metabolic abnormalities linked to PCOS may have long-term health effects. (Eilertsen et al., 2012). Women with this disease do not ovulate normally, which is when eggs are released from the ovaries. As follicles mature the AMH production starts to decline. This degradation appears to be a necessary step in the selection of the dominant follicle and progression to ovulation (Pellatt, Rice, & Mason, 2010). However, even though the time to conceive is frequently extended, 60% of women with PCOS are fertile. (Brassard et al., 2008). Polycystic ovarian syndrome has a negative impact on these women's perinatal outcomes. There is evidence that women with PCOS are more likely to experience early pregnancy loss and miscarriage. (Wang et al., 2013), which could possibly be caused by pre-pregnancy hyperandrogenemia, obesity and hyperinsulinemia (Kazerooni et al., 2013). Miscarriage occurs in thirty percent to fifty percent of PCOS women compared with ten percent to fifteen percent of normal women (Ghazeeri et al., 2012).Additionally, there is evidence to support the notion that women with PCOS have a higher risk of miscarriages, gestational diabetes, preeclampsia, and preterm labor. (Boomsma et al., 2006).

The most often documented pregnancy problem in women with PCOS is gestational diabetes (GDM). The onset or initial identification and diagnosis of glucose intolerance during pregnancy is known as gestational diabetes mellitus. Gestational diabetes mellitus complicates forty percent to fifty percent of PCOS pregnancies (Veltman-Veshulst et al., 2010). Due to PCOS-related pregnancy problems such pregnancy-induced elevated vital signs, pregnant women diagnosed with PCOS are more likely to undergo caesarean sections. (Morin-Papunen et al., 2012). As an independent factor, the rampancy of hypertension in PCOS women increased. (Barcellous et al., 2007). Many studies' findings are debatable; in some, both systolic and diastolic blood pressure are normal, but in others, mean arterial pressure and ambulatory systolic pressure are higher in PCOS-positive women than in non-PCOS-positive controls.

Methodology and Materials

Selection of the area:

The study was conducted in Thassim Beevi Abdul Kader College for women located at kilakarai town, where most of the students around Ramanathapuram are enrolled. Nearly all community girls of Ramanathapuram district study in this college. Because of varying cultures around Ramanathapuram district, the investigator is interested to know the prevalence of Polycystic Ovary Syndrome among college going adolescent girls belonging to all communities of Ramanathapuram.

Selection of the sample:

200 adolescent girls were selected using random sampling method. Among the 200 adolescent girls, 100 adolescent girls purposively selected by purposive sampling for the study. Purposive sampling is also called as" Quota Sampling" and "Judgment Sampling" where the organizes of the injury purposively choose the particular units of the universe (Kothari, 2004).The samples selected were found to be regular college going girls and willing to cooperate in the study. The socio economic status, dietary habits and anthropometric assessment of all the 70 samples were assessed.

Collection of data:

Participants were given the choice on the consent form between completing the survey and agreeing to spend 30 minutes with me performing in-depth participant observation of their daily life. All the participants filled out the questionnaire on site at the time it was given to them. Height, weight and waist circumference were taken as a part of survey. The samples provide the ultra sound scan of their lower abdomen for the study. No compensation or gifts of any kind were provided to participants in exchange for their participation in this study. An interview schedule was specially designed to collect the information on socio economic status and dietary pattern.

Assessment of pcos:

Anthropometric information, a dietary questionnaire, and laboratory tests are all part of the PCOS examinations. Each of these approaches entails gathering data in various ways and analyzing each finding in light of the others to produce an overall picture. (Whitney. 1999).

Results and discussions:

The result of the study on prevalence of PCOS among college going adolescent girls in selected areas of Ramanathapuram district is discussed under the following headings.

1. Socio economic profile of the selected adolescent girls.
2. Anthropometric measurements of the selected adolescent girls.
3. Dietary assessment and eating habits of the selected adolescent girls.
4. Health profile of the selected adolescent girls.

I. Socio economic status of the samples

Majority (37%) of the samples were 19 years old, 26% of samples were in 20 years of age, 17% of samples were in 18 years of age, 13% of samples were 20 years old and the least (7%) were 17 years old. From the above data, about 60% of the samples were Muslim, 39% of the samples were Hindu and 1% is Christian. Table I indicates represents majority (74%) of the samples were living as Nuclear Family and 26 % of the samples were living as joint family. And about 68% of the samples had 4-7 persons in their family, while 13% of the samples had more than 7 persons in their family followed by 19% of 1-3 persons in their family. Table I reveals that 14% of the families of the sample were found to be Low income group. Majority of the samples family income were moderate and the high income group were about 30%.

Table I : Socio economic status of the samples

Variables	Number of Girls[%]
Age Group	
1. 17	07 [7]
2. 18	17 [17]
3. 19	37 [37]
4. 20	26 [26]
5. 21	13 [13]
Type and size of family of the samples	
1. Joint	26 [26]
2. Nuclear	74 [74]
Size of the Family	
1. Small (1-3) 19	[19]
2. Medium (4-7)	68 [68]
3. Large (above 7) 13	[13]
Monthly income of the family of the Samples:	
1. Low Income 14	[14]
2. Moderate Income 56	[56]
3. High Income 30	[30]

II. Anthropometric assessment of the samples:

The above table shows that 28% of the samples ranged from the height of 151-155cm, 27% of the samples height range was between 161 and 170cm, 23% of the samples ranged from 156-160cm. about 12% were between 145 and150 cm and the least (10%) ranges above 165cm. The table represents the weight range of the selected adolescent girls.Most of the samples weight ranged from 51-60 kg (29%). The least percent of the samples were ranged below 40kg (2%). About 23% of the samples weight were between 40 and 50 kg, followed by 61-70 kg (22%). And 5% of the samples weight was above 80kg. About 19% of the samples ranged between 70 and 80 kg. Table indicates that majority (47%) of the samples had the BMI range of 18-24.5. 8% of the samples were under the category of Underweight (below 18). About 34% of the samples were Overweight (ranged between 25 and 29.9). The grade – I Obese (30- 34.9) samples was about 8% followed by grade –II (ranged above 35) obesity of 3%.

Table II: Anthropometric assessment of the samples

Variables	Number of Girls[%]
Height range of the samples:	
1. 145-150	12 [12]
2. 151-155	28 [28]
3. 156-160	23 [23]
4. 161-165	27 [27]
5. Above 165	10 [10]
Weight Range of the samples:	
1. Below 40	02 [2]
2. 40-50	23 [23]
3. 51-60	29 [29]
4. 61-70	22 [22]
5. 70-80	19 [19]
6. Above 80	05 [5]
BMI of the samples	
1. Underweight	8 [8]
2. Normal	47 [47]
3. Overweight	34 [34]
4. Obese (grade 1)	08 [8]
5. Obese (grade 2)	03 [3]

III. Dietary assessment and eating habit of samples

Table indicates Dietary pattern of adolescent girls in Ramanathapuram District.

Clearly majority of the samples were non- vegetarian which was about 97% with only 1% of Vegetarian and 2% of the samples were Ovo - Vegetarian. The table shows the number of meals taken by the samples. About 46% of the samples had meals 3 times a day, 2% of the samples had only 2 times a day and 15% of the samples had 4 times a day.

Table III. Dietary assessment and eating habit of samples

Variables	Number of Girls[%]
Type of food consumed by the samples:	
1. Vegetarian 01 [1]	
2. Non vegetarian 97 [97]	
3. Ovo vegetarian 02 [2]	
Number of meals taken by the samples:	
1. Two 39 [39]	
2. Three 46 [46]	
3. Four 15 [15]	

Packed Food Consumption Pattern of the samples:

The table indicates that 16% of the samples took sweets such as chocolates, ice creams, jalebi, laddoo, etc. on daily basis, 24% of the samples consume sweets once a week, 10% of the samples consume sweets twice a week and 50% of samples had it occasionally.About 19% of the samples had taken fried foods such as muruku, bajji, bonda, etc. on daily basis, 41% of the samples had taken once a week, 14% of the samples had fried foods weekly twice and occasionally 26% of the samples had eaten fried foods.Nearly 32% of the samples had taken baked foods such as biscuits, cakes, etc. occasionally. 25% of the sample had taken baked foods daily. 22% of the samples had the habit of taking baked foods twice a week and about 20 % of the samples had it once a week. And 1 % of the samples don‟t have the habit of eating baked foods. Fast foods such as pizza, burger, shawarma, chips, etc. Consumption was collected. About 3% of the samples had taken fast foods daily. 6% of samples never consumed fast foods. 14% of the samples took it once a week and 9% of the samples had weekly twice. Occasionally 32% samples were consumed fast foods. Soft drinks, tea, coffee were considered as non-alcoholic beverages. 3% of the sample never consumed nonalcoholic beverages. Most (75%) of the samples had taken regularly on daily basis. About4%ofthesampleshadnonalcoholicbeveragesonce aweekand also4%hadtwiceaweek. And 14%ofthe samples hadit occasionally.

Table IV: Packed Food Consumption Pattern of the samples

S.No	FoodItems	)aily(%)	WeeklyOnce(%)	WeeklyTwice(%)	asionally(%)	Never(%)
1.	SweetsFriedFoods	16	24	10	50	0
2.	BakedFoodsFastFoods	19	41	14	26	0
3.	Non AlcoholicBeverages	25	22	20	32	1
4.		3	14	9	69	6
5.		75	4	4	14	3

Food Consumption Pattern of the samples:

Table provides the food consumption pattern of the samples. As Rice is the staple food of south Indians, 100% of the sample takes rice as the important part of food. Other cereals such as wheat, bajra, ragi, the samples had 32% of wheat and 4% of ragi on daily basis and many of the students didn‟t hear about Bajra at all and the consumption of bajra on daily basis is 0 %.except these, the samples had 4% of other cereals. 16% of samples had the habit of consuming wheat on once a week,20% of the samples had ragi weekly once, only 6% of the samples had eaten bajra once a week.

About 5% of the samples other cereals once a week. While taking consuming twice a week, 40% of the Samples had wheat and 14% of the samples had Ragi and no one had bajra.8% of the samples had other cereals twice a week. Occasionally 42% of the samples took bajra and 28 % had ragi.52% of the samples never had bajra and 25 % of samples never had ragi on their diet.

Regarding pulses consumption, 32% of the samples had Black gram dhal on daily basis such as dosa and idly. Nobody had taken green gram dhal on their daily diet.12% of Bengal gram dhal and 12% of red gram dhal was taken on their daily diet. Other pulses were taken 10% on their daily diet. 16 % of the samples Had the habit of consuming green gram dhal once a week, 40% of samples had red gram dhal, 20% of the samples had Bengal gram and 16% of samples had black gram dhal on once a week.

About 38 % of other pulses were taken weekly once. 64% of samples had green gram dhal twice a week and 24% of samples had red gram dhal. About 48% of the samples had taken Bengal gram dhal and 28% of samples took black gram dhal twice a week.

Occasionally 16 % of samples had green gram dhal and red gram dhal, 20% of samples had Bengal gram and other pulses and 24% of samples had taken black gram dhal. 4% of the samples never had taken green gram dhal and 9% of the sample didn‟t take other pulses.

Table also provides vegetable consumption, 40% of the samples had roots and tubers and 20% of the samples had green leafy vegetables and 36% took other vegetables in their daily diet. About 16% of the samples had taken roots & tubers and green leafy vegetables and 20% of the samples had taken other vegetables once a week. About 20% of the samples had taken other vegetables, 28% of the samples had green leafy vegetable and roots and tubers. Occasionally 16 % of the samples had roots and tubers, 32% of the samples had green leafy vegetables and 12% of the samples had other vegetables. 4% of the samples never had green leafy vegetables and 12% of the samples never taken other vegetables.

Regarding the consumption of fruits, only 32% of the samples had fruits on their daily diet and 32% on weekly twice. About 12% of the samples had fruits once a week and 20% of samples had fruits occasionally. 4% of the samples didn‟t have the habit of eating fruit.
About 75% of the samples had taken milk on their daily diet. 4% of the samples had milk weekly once, 13% of the samples had milk weekly twice and 3% of the samples had milk occasionally. 2% of the sample didn‟t take milk at all.

Regarding meats and poultry, only egg is taken daily, as the consumption of egg is 28%. About 20% of the samples took egg weekly once, 32% had taken weekly twice. Occasionally 12 % of the samples had egg on their diet and about 8% of the samples never took eggs on their diet.24% of the samples had eaten mutton once a week, 40% were consuming mutton weekly twice and 28% of the samples had it occasionally. About 8% of the samples never consume mutton. Chicken is consumed by 28% of samples on weekly basis, 36% of the samples consume chicken twice a week and 24% of the samples consume occasionally. About 12% of samples never consume chicken. Sea foods such as fish, crabs are taken by 12% of the sample on weekly basis, 20% of the samples had consumed weekly twice and occasionally 42% of the samples were taken and 16% of the samples never consume sea foods. Except these, other meats and poultry, about 24% of the samples consume once & twice a week.16% of the samples had occasionally and 36 % of the samples never had other meats and poultry.

Table V : Food Consumption Pattern of the samples :

S.No	FoodItems	Daily No	%	Onceaweek		Twiceaweek		Occasionally		Never	
1.	**Cereals**										
a.	Rice	100	100	-	0	-	0	-	0	-	0
b.	Wheat	32	32	16	16	40	40	12	12	-	0
c.	Bajra	-	0	06	6	-	0	42	42	52	52
d.	Ragi	04	4	20	20	23	23	28	28	25	25
e.	Others	04	4	10	10	05	5	08	8	-	0
2.	**Pulses**										
a.	Greengramdhal	-	0	16	16	64	64	16	16	04	4
b.	Redgramdhal	20	20	40	40	24	24	16	16	-	0
c.	Bengalgramdhal	12	12	20	20	48	48	20	20	-	0
d.	Blackgramdhal	32	32	16	16	28	28	24	24	-	0
e.	Others	10	10	38	38	23	23	20	20	09	9

Nutrient intake of the samples as per RDA

Majority of study subjects had calorie consumption more than 100% of RDA; one fourth of the subjects consumed less than 90% of RDA. Subjects with protein intake less than 60% and between 60.1 and 90% of RDA were 24% and 37% respectively; corresponding value for more than 100% of intake was 22%. Fat intake of 0%, 69% and 31% study subjects was less than 60%, between 60-100 % and more than 100% of the RDA. About 87 % of the adolescent girls iron intake was less than 80% of RDA. Study subjects with more than 100% of untake intake is 0% and 3% of the samples had 90.1-100% of RDA.

Adolescent girls with calcium intake less than 59%, 50.1-80% and more than 100% of RDA were 52%, 58% and 0% respectively.

Majority (59%) of study subjects had vitamin A intake less than 50%, subjects with more than 80% of RDA were 4%. No one had mre than 100% of Vit C intake, 38% of the samples had less than 50% of RDA and 11% of the samples had between 80-100% of RDA.

Table : VI Nutrient intake of the samples as per RDA

S.No	%RDA	NERGYN(%)	PROTEINN(%)	FATN(%)	IRONN(%)	CALCIUMN(%)	VIT-AN(%)	VIT-CN(%)
1.	Lessthan/=	0 (0%)	6 (6%)	0 (0%)	40(40%)	52 (52%)	59(59%)	38 (38%)
2.	50.1-60	0 (0%)	18 (18%)	0 (0%)	20(20%)	31 (31%)	15 (15%)	23(23%)
3.	60.1-70	2 (2%)	11 (11%)	4 (4%)	8 (8%)	10 (10%)	10(10%)	19(19%)
4.	70.1-80	6 (6%)	18 (18%)	12(12%)	19(19%)	13 (13%)	12 (12%)	9 (9%)
5.	80.1-90	21 (21%)	8 (8%)	10(10%)	10(10%)	4 (4%)	4 (4%)	8 (8%)
6.	90.1-100	28 (28%)	17 (17%)	43(43%)	3% (0%)	0 (0%)	0 (0%)	3 (3%)
7.	Above 100	43 (43%)	22 (22%)	31(31%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Average nutrient intake of study samples:

The table shows the intake of all nutrients of the samples. Mean consumption of energy was 2513.2 kcal per day which was 122% of total RDA. Recommended allowance of protein is 62.5g/day in which study samples had 109.2% of protein. Fat consumption of the samples was 38.5g/day that exceeds RDA value by 75%. Regarding iron consumption of the samples, intake of iron was less (73%) than RDA. Calcium intake was found to be 81% compared to recommended allowance. Vitamin A intake was 349.8ug/day while the RDA value is 600ug/day. Mean consumption of vitamin C was 62.4% of RDA.

Table VII : Average nutrient intake of study samples

NUTRIENT	RDA	MEAN/DAY CONSUMPTION N=100	% OF RDA
Energy(Kcal)	2060	2513.2	122%
Protein(g)	62.5	68.25	109.2%
Fat(g)	22	38	175%
Iron(mg)	28	20.4	73%
Calcium(mg)	600	486	81%
Vitamin-A(ug)	600	349.8	58.3%
Vitamin-C(mg)	40	24.96	62.4%

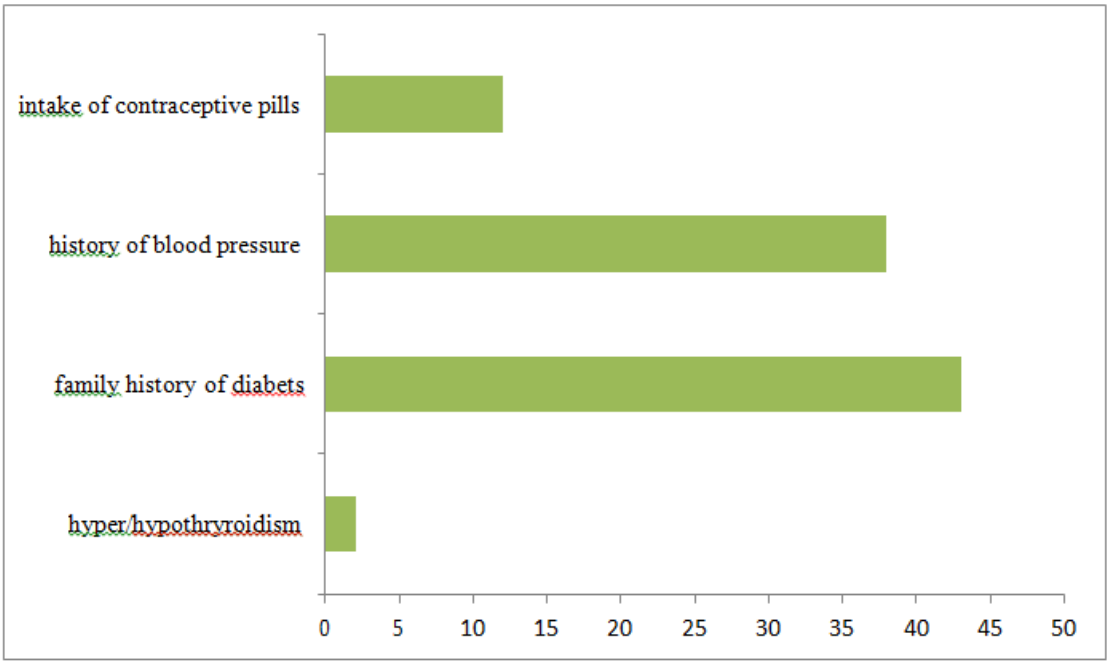
IV. Health profile of samples

The table shows the presence of symptoms accompanied with Polycystic Ovary Syndrome. Irregular menstrual period is the most important symptoms of PCOS, about 41% of the sample were having irregular menstrual period. Acne, a skin problem is encountered by 41% of the samples. About 20 % of the samples suffered from Premenstrual Syndrome, shortly known as PMS. 43 % of the samples had continuous weight gain and 51% of the samples had difficulty in losing weight. Cravings such as carbohydrate and sugar cravings were found as 30%. Hirsuitism, a condition in which a person suffers from unusual hair on face and body is a common condition of PCOS. About17 % of the samples have excess facial hair in which 33% of the samples have excessive hair on upper lips, 11% of the samples have unusual amount of breast hair and 33% of the samples have excessive hair growth on abdomen and around the navel. And 14% of the samples had observed changes in voice i.e., deepening of
voice.

Table VIII: Symptoms of polycystic ovary syndrome present in the samples:

S.No	SYMPTOMSOFPCOS	NUMBER	PERCENTAGE
1.	Irregular menstrual periodAcne PremenstrualSyndrome	41	41
2.	Hair loss / thinning of hair in front/ baldnessContinuousweight gain	41	41
3.	Difficulty in losing weightCarbohydratesandsugarcravingsExcessivef acial hair	47	47
4.	Hairgrowthonupperlips	60	60
5.	UnusualamountofhairgrowthonbreastsDeepening ofvoice	43	43
6.	PresenceofHyper\HypothyroidismFamilyhistoryo f diabetes	51	51
7.	FamilyhistoryofbloodpressurePresenceof PCOS Intakeof contraceptivepills	30	30
8.		17	17
9.		33	33
10.		11	11
11.		14	14
12.		02	02
13.		43	43
14.		38	38
15.		19	19
16.		06	06

The presence of hyper thyroidism and hypothyroidism were found in 2 % of the samples. About 43% of the samples had the family history of Diabetes Mellitus and 38% of the samples had the history of high blood pressure. And 6% of the samples were taking oral contraceptive pills.



Presence of polycysticovarysyndrome:

In a sample of 100, 24 samples had diagnosed polycystic ovary syndrome. Although Polycystic Ovary Syndrome is a major endocrine disorder, only 47% of the samples heard about PCOS**.**

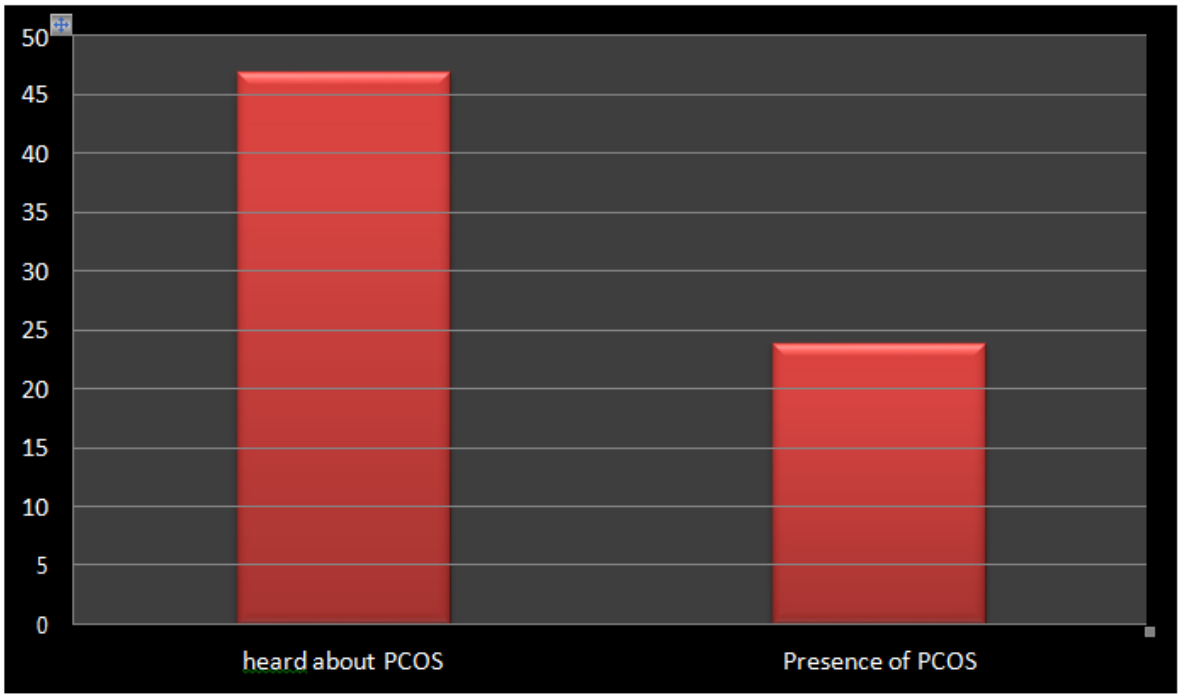


Figure II: Presence of PCOS

Conclusion:

The present study on prevalence of Polycystic Ovary Syndrome among adolescent girls in Ramanathapuram is summarized as follows.

A total of one hundred adolescent girls were selected for the study. The samples were selected from Thassim Beevi Abdul Kader College for women in Kilakarai, where majority of the adolescent girls from Ramanathapuram are pursuing their degree. The socio economic status and food consumption pattern were collected using interview schedule. The anthropometric measurements were taken using respective tools. The collected data were analyzed and the results of the investigation reveal the following.

Majority of the samples were in 19 years of age. 26% of the samples were 20 years of age followed by 17% of 18 years old, 7% of 17 years old and 4% of 22 years old samples.

60% of the samples belong to the religion of Islam, 39% of samples from Hinduism and 1% from Christianity.

About 74% of the samples were in the Nuclear family, whereas 26% of the samples were living as joint family. While describing the size of the family, most of samples family size were medium (68%) i.e., 4 to 7 persons in a family.

Majority (56%) of the samples were found to be middle income group. About 14% of the samples were found to be low income group and 30% of the samples were high income group.

Regarding the height of samples, 28% of the samples height ranged from 151- 155cm, followed by 27% of 161-165cm, 23% of 156-160cm and 12% of samples below 150cm.The least of 10% of samples ranged above 165cm.Majority (29%) of the samples weighed between 51 and 60kg. there were 2% of the samples, they ranged below 40 and 5% of the samples, whose weight ranged above 80kg. 23% of the samples weight were from 40 -50kg, 19% of the samples from 70-80 kg and 22% of the samples from 61-70kg. The mean height is 161.5 cm and the mean weight is 62 kg among the samples.

According to the Body Mass Index(BMI), majority (47%) of the samples were normal. 34% of the samples were overweight. 8% of the samples were underweight, 8% of the samples were in grade 1 obesity and 3% of the samples were in grade 2 obesity.

Dietary pattern of the selected samples reveals that majority of the samples were non vegetarian. Only 2% of the samples were vegetarian and 1% of ovo vegetarian.

Regarding the reproductive health of the samples, about 41% of the samples had irregular menstrual period and 47% of samples had suffered from Premenstrual Syndrome. The samples also had other symptoms of PCOS, such as acne(41%), hair loss/ hair thinning, balding (60%), continuous weight gain(43%) and difficulty in losing weight(51%). 30% of the samples had carbohydrate and sugar cravings. Hirsuitism is a condition of unusual hair growth on face and body, that is experienced by the samples in which excessive facial hair is experienced by 17% of the samples and 11% of the samples had unusual amount of growth on their breasts and 23% of the samples had abnormal hair growth on their abdomen region. 14% of the samples noticed their changes in voice i.e., deepening of voice. And 2% of the samples had imbalanced hormonal condition called thyroidism. The major inherited disease, diabetes mellitus was founded to be 43% on family history of the samples with 38% of high blood pressure. 23% of the samples mother/sister suffered from the above symptoms.

The oral contraceptive pills were used by 11% of the samples.
It is saddening that many of the girls were lack of knowledge about PCOS, which just only 47% of the samples heard about PCOS, which affects 3 in 1 women. And finally, 24% of the samples had diagnosed PCOS.From the above study, it is concluded that the PCOS diagnosed students had poor lifestyle patterns and dietary habits which resulted in endocrine disorder. The diagnosis was taken into consideration by assessing the ultrasound scan of 24 samples which clearly shows the presence of PCOS. The diagnosis may be considered but not confirmed among 15 samples that have more than 4 symptoms. They are unaware of the symptoms, hence awareness should be created in order to provide knowledge about reproductive health of women, especially adolescent girls, which will help them to know about their health and will diagnose further if the symptoms were present. The importance of healthy dietary practice along with physical exercise was explained to them in order to eradicate PCOS. Nutritional awareness programme need to be imparted along with college going adolescent girls, in order to make healthy mothers of future.

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