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Problems and factors influencing PCOS among women-A case-control study

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Original Article

Problems and factors influencing PCOS among women-A case-control study

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Abstract

Polycystic ovarian syndrome (PCOS) is one of the common problems found in women. The study aimed to assess the common problems experienced and factors influencing PCOS among women. The case-control study design was used, and a purposive sampling technique was used to select 30 cases of women with PCOS and 90 controls who did not have PCOS. A structured questionnaire was used to collect the data in the age group of 15 to 22 years with PCOS, and the data was analyzed using descriptive and inferential statistics. The findings revealed that the majority of cases 14 (46.7%) and controls 42 (46.7%) were between the age of 21-22 years. Twenty (66.7%) cases and 8 (8.9%) controls were having the family history of PCOS, 11 (36.7%) cases and 33 (36.7%) controls were underweight and overweight respectively, 6 (20%) cases and 8 (20%) controls were obese, 19 (63.3%) cases and 41 (45.6%) controls had acne, 10(33.3%) cases and 7 (7.8%) controls had hirsutism, 16 (53.3%) cases and 38 (42.2%) controls had thinning of hair, 2 (6.7%) cases and 3 (3.3%) controls had bald spots, 9 (30%) cases and 9 (10%) controls had dark patches, 15 (50%) cases and 55 (61.1%) controls had anxiety/depression and 12(40%) cases and 30(33.3%) controls had pelvic pain. There was a statistically significant association on comparison of case and control variables such as eating habits, family history of PCOS, presence of acne, hirsutism, thinning of hair, bald spots, dark patches, and menstrual cycle disorder at 0.05 level of significance.

Keywords: Hirsutism, Poly Cystic Ovarian Syndrome (PCOS), Obesity, Menstrual disorders.

Introduction

The polycystic ovarian syndrome is one of the most commonly growing problems among women, but its cause remains unknown. It affects the normal balance of hormones in the body. Women with PCOS may experience acne, facial hair, balding, irregular periods, and infertility among other symptoms. The treatment includes losing weight, lifestyle changes, maintaining of body's hormones using different types of birth control pills etc.

The review states that the prevalence of polycystic ovaries is higher among women aged less than 35 years. The prevalence of PCOS has been reported between 2.2% to 26% in India, 9.13% of South Indian adolescent girls are estimated to suffer from PCOS in 2018 (Azziz et al., 2005). The youth population, especially women, undergo much stress in their day to day life in order to achieve their educational, career objectives, and their dietary pattern has undergone a profound change. The quality of the diet they consume is a big question, and the lack of physical exercise adds to the problem. The trend is the same among a rural and urban population where young women have difficulty in maintaining their ideal body weight. Moreover, the associated problems of PCOS frustrate them, which further aggravates their stress. This study aimed at assessing the problems experienced and factors influencing PCOS among women residing in the selected community.

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Objectives

- To assess the problems experienced and factors influencing PCOS among women.

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- To estimate the risk of problems among cases and controls.

Methodology

An exploratory survey was conducted. Thirty cases of doctor-diagnosed PCOS and 90 controls, in the age group of 15 to 22 years residing at Kannakinagar and Neelankaraikuppam community area in Chennai were selected as samples using purposive sampling technique and a structured questionnaire was used to collect data. The tool consisted of demographic variables of samples and questions related to age at menarche, family history of PCOS, eating habits, activity level, weight, presence of acne, bald spots, thinning hair, hirsutism, menstrual disorders, and dark patches. Validity and reliability of the tool: Informed consent was obtained from the parents. Institutional ethical committee approval was obtained. Anonymity was maintained.

Results

Table 1:

Frequency and percentage of cases and controls concerning demographic variables

N=30+90

Variables	Cases		Controls	
	f	%	f	%
Age in Years				
15-17	9	30.0	27	30.0
18-20	7	23.3	21	23.3
21-22	14	46.7	42	46.7
Religion				
Hindu	16	53.3	74	82.2
Christian	11	36.7	15	16.7
Muslim	3	10.0	1	1.1
Eating habits				
Vegetarian	4	13.3	4	4.4
Non vegetarian	26	86.7	86	95.6
Family history of PCOS				
Yes	20	66.7	8	8.9
No	10	33.3	82	91.1
Activity level				
Active	9	30.0	52	57.8
Moderate	14	46.7	30	33.3
Sedentary	7	23.3	8	8.9
Education				
Illiterate	6	20.0	3	3.3
School education	11	36.7	48	53.3
Under graduate	13	43.3	39	43.3
Occupation				
Student	24	80.0	71	78.9
Working	2	6.7	19	21.1
Not working	4	13.3	00	00

The data presented in Table 1 show that majority of cases 14 (46.7%) and controls 42 (46.7%) were in the age group of 21-22 years sixteen (53.3%) cases and 74 (82.2%) controls were Hindu, majority of cases 26 (86.7%) and controls 86 (95.6%) were non-vegetarians, the maximum number of cases 20 (66.7%) and controls 8 (8.9%)

were having the family history of PCOS and majority of cases 9 (30%) and controls 52 (57.8%) had an active level of activity. Thirteen (43.3%) cases and 39 controls (43.3%) had school education, and the majority of cases 24 (80%) and controls 71(78.9%) were students.

Table 2 depicts that majority of cases 13 (43.3%) and controls 39 (43.3%) had attained menarche at 11-12 years of age, the maximum number of cases 13 (43.3%) and control 50 (55.6%) had the duration of the menstrual cycle for 4-5days, majority of cases15 (50%) and control 77 (85.6%) had 10-12 menstrual cycle in a year.

Fig. 1 shows that majority of cases 11 (36.7%) and controls 33 (36.7%) were underweight and overweight respectively, 6 (20%) cases and 18 (20%) controls were obese, 19 (63.3%) cases and 41 (45.6%) controls had acne, 10 (33.3%) cases and 7 (7.8%) controls had hirsutism, 16 (53.3%) cases and 38 (42.2%) controls

Table 2:
Frequency and percentage distribution of cases and controls concerning menstruation-related variables

N=120

Variables	Cases		Controls	
	f	%	f	%
Age(in years)**at Menarche**				
11-12	13	43.3	39	43.3
13-14	11	36.7	33	36.7
15-16	5	16.7	15	16.7
17 and above	1	3.3	3	3.3
Duration of the menstrual cycle (days)				
2-3	2	6.7	27	30.0
4-5	13	43.3	50	55.6
6-8	12	40.0	10	11.1
9 & above	3	10.0	3	3.3
Number of the menstrual cycle in a year				
6 and less	6	20.0	2	2.2
7-9	9	30.0	11	12.2
10-12	15	50.0	77	85.6

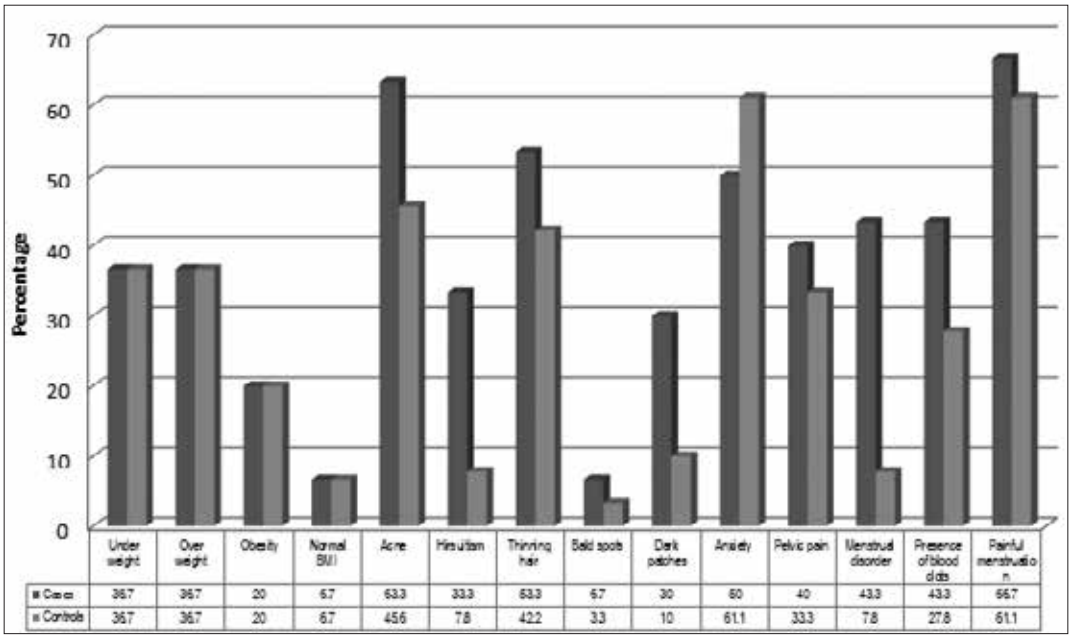

Figure 1: Bar diagram showing the percentage distribution of cases and controls concerning PCOS related variables

had thinning of hair, 2 (6.7%) cases and 3(3.3%) controls had bald spots, 9 (30%) cases and 9 (10%) controls had dark patches, 15 (50%) cases and 55(61.1%) controls had anxiety/depression and 12 (40%) cases and 30(33.3%) controls had pelvic pain.

Table 3:

Exposure rates, odds ratio and relative risk of cases and controls

Variables	Case (30)		Control (90)		Exposure rate		Odds ratio	Relative Risk
	F	%	F	%	Case	Control		
Eating habits								
Veg	4	13.3	4	4.4	13	4	3.31	3.0
Non-Veg	26	86.7	86	95.6				0.91
Family history of PCOS								
Yes	20	66.7	8	8.9	66	8	20.5	7.5
No	10	33.3	82	91.1				0.37
Presence of Acne								
Yes	19	63.3	41	45.6	63	46	2.06	1.4
No	11	36.7	49	54.4				0.67
Hirsutism								
Yes	10	33.3	7	7.8	33	7	5.92	4.2
No	20	66.7	83	92.2				0.72
Thinning of hair								
Yes	16	53.3	38	42.2	53	42	1.56	1.27
No	14	46.7	52	57.8				0.80
Bald spots								
Yes	2	6.7	3	3.3	6	3	2.07	2.000
No	28	93.3	87	96.7				0.97
Dark patches								
Yes	9	30.0	9	10.0	3	1	3.86	3.00
No	21	70.0	81	90.0				0.78
Anxiety /Depression								
Yes	15	50.0	55	61.1	5	61	0.64	0.82
No	15	50.0	35	38.9				1.29
Pelvic pain								
Yes	12	40.0	30	33.3	4	33	1.33	1.20
No	18	60.0	60	66.7				0.90
Menstrual cycle disorder								
Yes	13	43.3	7	7.8	43	7	9.07	5.57
No	17	56.7	83	92.2				0.61
Painful menstruation								
Yes	20	66.7	55	61.1	66	61	1.27	1.09
No	10	33.3	35	38.9				0.86
Presence of blood clots								
Yes	13	43.3	25	27.8	43	28	1.99	1.56
No	17	56.7	65	72.2				0.79

Table 3 shows that the cases had the exposure rate of 66% and controls had an exposure rate of 8% in the family history of PCOS, the odds ratio was 20.5, women with a family history of PCOS showed a risk of PCOS with 20.5 times that of women without PCOS. Cases had the exposure rate of 33%, and controls had the exposure rate of 7% in hirsutism, the odds ratio was 5.92, women with PCOS showed a risk of 5.92 times that of women without PCOS. Cases had the exposure of 3%, and the controls had the exposure rate of 1% in dark patches, the odds ratio was 3.86, women with PCOS showed a risk of 3.86 times that of women without PCOS. Cases had the exposure rate of 43%, and the controls had the exposure rate of 7% in menstrual cycle disorder, the odds ratio was 9.07, women with PCOS showed a risk of menstrual cycle disorder 9.07 times that of women without PCOS. There was a statistically significant association found on the comparison of case and control variables such as eating habits, family history of PCOS, and presence of acne, hirsutism, thinning of hair, bald spots, dark patches, and menstrual cycle disorder at 0.05 level of significance.

Discussion

PCOS is an ever-growing problem that needs timely care and appropriate treatment. Hence, this study was conducted to know the problems experienced, and factors influencing PCOS and to estimate the risk among cases and controls among women. The study findings revealed that majority of cases 14 (46.7%) and controls 42 (46.7%) were in the age of 21-22 years, 7 (23.3%) cases and 21 (23.3) controls were in the age of 18-20 years, 14 (46.7%) cases and 42 (46.7%) controls were in the age of 21-22 years respectively, 20 cases (66.7%) and 8 controls (8.9%) were having the family history of PCOS, cases 10 (33.3%) and 15 (16.7%) controls were having no family history of PCOS, majority of cases 11 (36.7%) and controls 33 (36.7%) were underweight and overweight respectively, 6 cases (20%) and 18 controls 18 (20%) were obese, 19 cases19 (63.3%) and 41 controls (45.6%) had acne, 11 (36.7) cases and 49 (54.4%) controls have no acne,10 cases (33.3%) and 7 controls (7.8%) had hirsutism, 20 (66.7%) cases and 83 (92.2%) have no hirsutism, 16 cases (53.3%) and 38 controls (42.2%) had thinning of hair, 14 (46.7%) cases and 52 (57.8%) controls have no thinning of hair, ,2 cases (6.7%) and 3(3.3%) controls had bald spots, 28 (93.3%) cases and 87(96.7%) controls have no bald spots 9 cases (30%) and 9 controls (10%) had dark patches, 21 (70%) cases and 81 (90%) controls have no dark patches, 15 cases (50%) and 55 controls (61.1%) had anxiety/, (50%) cases and 35 (38.9%) controls have no anxiety and depression, and 12 cases (40%) and 30 controls (33.3%) had pelvic pain18 (60%) cases and 60 (66.7%) controls have no pelvic pain. The findings of the study supported by Li et al. (2013), who reported that mean ± SD of overweight is 4.36± 2.43, and anxiety/depression is 5.50 ± 1.88, respectively. In this study, cases had the exposure rate of 43% and the control had the exposure rate of 7% in menstrual cycle disorder.

Conclusion

PCOS is one of the common growing problems among young women, the nurse should create awareness among women with this problem, and this study revealed that the majority of the women have experienced with the PCOS symptoms and there is a need to health educate the women on PCOS to maintain the healthy lifestyle for improving the quality of life of women. The study recommendations are: when irregular menstrual cycles are present, women should take timely intervention to combat this problem. Modification of lifestyle, monitoring weight regularly, and regular exercise helps women to lead a quality life.

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