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Indian Journal of Obstetrics and Gynecology Research

Journal homepage: www.ijogr.org

Original Research Article

Awareness of polycystic ovary syndrome (PCOS) among medical students— A multi-centric cross-sectional survey in West Bengal

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ARTICLE INFO

Article history:
Received 16-02-2022
Accepted 01-04-2022
Available online 08-08-2022

Keywords:
Poly cystic ovary syndrome
Awareness
Medical students

ABSTRACT

Objective: To evaluate the awareness of Poly Cystic Ovary syndrome (PCOS) among medical students of different medical colleges in West Bengal.

Materials and Methods: Open label, cross-sectional, multi-centric study was done amongst MBBS students of different medical colleges in west Bengal. An online questionnaire was prepared whose link was shared through social media. The portal was kept open for 7 days during which the students were allowed to submit their entries. Only one entry per student was allowed. Use of any reference like books and internet was not allowed. Data was analysed at Department of Obstetrics & Gynecology of R.G. Kar Medical College. P value <0.05 was considered significant.

Result: A total of 148 students participated in the study of whom 107 were females (72.29%) and 41 males (27.70%). The highest number of responses was from College of Medicine and JNM hospital, Kalyani, Nadia (47.29%). Most of the respondents were females (72.20%). Females had a better knowledge about the signs and symptoms of PCOS. The awareness amongst the medical students about Hirsutism (p value 0.01), facial acne (p value 0.02) and Diabetes (p value 0.02) as symptoms of PCOS were statistically significant (p value<0.05). That diabetes is a possible complication of PCOS was known to 44.85% females and 63.41% males and the result was statistically significant (p value 0.02). Females were more aware of the role of lifestyle modification to alleviate symptoms of PCOS. Awareness about doing exercise (p value 0.0003), losing weight (p value 0.02) and increased intake of fruits and vegetables (p value 0.007) as curative measures of PCOS were statistically significant. PCOS is an inherited disorder was known to 14.01% females and 26.82% males and the result was statistically significant (p value 0.01). Change in ovarian morphology occurring in PCOS was known to 53.27% females and 58.53% males but the result was statistically insignificant (p value 0.8).

Conclusion: Although, majority of students have the basic knowledge of PCOS, but periodic academic activities (Seminars, CME etc) are required to upgrade the information about symptoms and awareness of PCOS.

1. Introduction

PCOS is one of the most common endocrine disorders in women of reproductive age, affecting 5-10% of women worldwide.[1] It is characterized by a combination of hyperandrogenism (either clinical or biochemical), chronic anovulation and polycystic ovarian morphology.[2] It is frequently associated with obesity and insulin resistance.[3]

The pathophysiology of PCOS is complex and the underlying imbalance in hormonal milieu is caused by an increase in androgens and/or insulin. Genetic and environmental contributors to hormonal imbalance and also

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https://doi.org/10.18231/j.ijogr.2022.065

some factors like obesity, ovarian dysfunction and disorders of hypothalamo-pituitary axis contribute to the etiology of PCOS.

PCOS receives considerable attention because of its high prevalence and it possible reproductive, metabolic and cardiovascular outcomes. PCOS women are at increased risk of obesity, dyslipidemia, type 2 diabetes mellitus and cardiovascular disorders. It increases the risk of miscarriages, fetal deformities, and complications during pregnancy like premature deliveries and neonatal complications.[4]

Lately, there has been an increase in the incidence of this syndrome both in developed as well as developing countries. In the backdrop of an increase in sedentary lifestyle and adaptation of western diet culture in India, the study aims in determining the awareness of PCOS among MBBS students- the future doctors in different medical colleges of West Bengal.

2. Objective

To evaluate the awareness of Poly Cystic Ovary syndrome (PCOS) among medical students of different medical colleges in West Bengal.

3. Materials and Methods

3.1. Study design

Open level, cross-sectional, observational, multi centric study.

3.2. Study type

Observational.

3.3. Study area

Medical Colleges in West Bengal, a state in Eastern India.

3.4. Study duration

The total time including questionnaire preparation, distribution among students, filled up form collection, statistical analysis took one month.

3.5. Subject selection criteria

All MBBS students, from first year to final year studying in any medical college of West Bengal and willing to participate in the trial were included.

3.6. Sample size

There were 148 entries during the study period.

3.7. Methodology

An online questionnaire was framed and its link was shared among the medical students through social media. The portal was kept open for 7 days during which the students were allowed to submit their entries. Only one entry per student was allowed. It was informed that their names would not be disclosed for any reason whatsoever. Using any kind of study material or Internet resources was forbidden. Participants were freely allowed to contact the investigators through phone for any difficulty or doubt faced by them during filling up of the forms. The filled up forms were used for statistical analysis after the portal was closed.

3.8. Statistical analysis

The data was analysed at the Department of Obtsterics and Gynecology of R.G. Kar Medical College and Hopsital, Kolkata. Statistical analysis was done using the SPSS software (version 20). Chi square test was used for analysis of the variables. P value <0.05 was considered to be statistically significant.

4. Results and Analysis

A total of 148 students participated in the study of whom 107 were females (72.29%) and 41 males (27.70%).

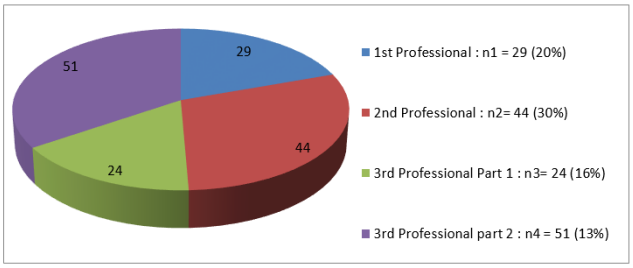

Fig. 1: Participation of MBBS students in the study: Year wise distribution (n = 148)

5. Discussion

A cross-sectional, observational study was taken up among MBBS students of different medical colleges in West Bengal to determine their awareness about PCOS.

The highest number of responses were from College of Medicine and JNM hospital, Kalyani, Nadia (47.29%). Most of the respondents were females (72.20%). Females had a better knowledge about the signs and symptoms of PCOS. The awareness amongst the medical students about Hirsutism (p value 0.01), facial acne (p value 0.02) and Diabetes (p value 0.02) as symptoms of PCOS were statistically significant (p value <0.05). Overall awareness about possible complications of PCOS was better amongst males. That diabetes is a possible complication of PCOS

Table 1: Participation from various colleges (n = 148)

Name of the college	Number of responses	Percentage (%)
All India Institute of Medical Sciences, Kalyani, Nadia	6	4.05
Bankura Sammilani Medical College, Bankura	2	1.35
Burdwan Medical College, Burdwan	16	10.81
Calcutta National Medical College, Kolkata	1	0.67
College of Medicine and JNM Hospital, Kalyani, Nadia	70	47.29
College of Medicine and Sagore Dutta Hospital, Kolkata	6	4.05
Employees State Insurance Corporation Medical College, Joka, Kolkata	5	3.37
IQ- City Medical College, Burdwan	3	2.02
Jagannath Gupta Institute of Medical Sciences & Hospital, Kolkata	4	2.70
Malda Medical College & Hospital, Malda	12	8.10
Medical College, Kolkata	2	1.35
Murshidabad Medical College & Hospitals, Murshidabad	1	0.67
Nilratan Sircar Medical College, Kolkata	3	2.02
North Bengal Medical College, Darjeeling	1	0.67
Raiganj Government Medical College & Hospital, Raiganj	1	0.67
RG Kar Medical College, Kolkata	14	9.45
Shri Ramkrishna Institute of Medical Sciences & Sanaka Hospitals, Durgapur	1	0.67
Total	148	100.00

Table 2: The general awareness about symptoms of PCOS amongst medical students (n = 148)

Question	Female (n=107)			Male (n=41)			P value
	Yes	No	I Don't Know	Yes	No	I Don't Know	
Irregular menstrual cycles	104 (97.19%)	0	3 (2.81%)	36 (87.80%)	3 (7.31%)	2 (4.87%)	
Facial acne	100 (93.45%)	2 (1.86%)	5 (4.67%)	33 (80.48%)	5 (12.19%)	3 (7.31%)	0.02
Hirsutism	94 (87.85%)	3 (2.80%)	10 (9.34%)	29 (70.73%)	6 (14.63%)	6 (14.63%)	0.01
Reduced fertility	90 (84.11%)	7 (6.54%)	10 (9.34%)	30 (73.17%)	4 (9.75%)	7 (17.07%)	0.3
Abortion	37 (34.57%)	31 (28.97%)	39 (36.44%)	18 (43.90%)	9 (21.95%)	14 (34.14%)	0.5
Weight gain	95 (88.78%)	1 (0.93%)	11 (10.28%)	33 (80.48%)	2 (4.87%)	6 (14.63%)	0.2
Frontal hair loss	65 (60.74%)	15 (14.01%)	27 (25.23%)	24 (58.53%)	3 (7.31%)	14 (34.14%)	0.3
Pelvic pain	82 (76.63%)	9 (8.41%)	16 (14.95%)	28 (68.29%)	3 (7.31%)	10 (24.39%)	0.4
Early puberty	32 (29.90%)	31 (28.97%)	44 (41.12%)	13 (31.70%)	8 (19.51%)	20 (48.78%)	0.4
Diabetes	48 (44.85%)	25 (23.36%)	34 (31.77%)	26 (63.41%)	2 (4.87%)	13 (31.70%)	0.02

Table 3: General awareness about possible complications of PCOS amongst medical students (n = 148)

Question	Female (n=107)			Male (n=41)			P value
	Yes	No	I Don't Know	Yes	No'	I Don't Know	
Diabetes	48 (44.85%)	25 (23.36%)	34 (31.77%)	26 (63.41%)	2 (4.87%)	13 (31.70%)	0.02
Uterine and Breast cancer	62 (57.94%)	8 (7.47%)	37 (34.57%)	24 (58.53%)	4 (9.75%)	13 (31.70%)	0.8
Androgen increase	94 (87.85%)	2 (1.86%)	11 (10.28%)	31 (75.60%)	3 (7.31%)	7 (17.07%)	0.1
Anxiety	92 (85.98%)	5 (4.67%)	10 (9.34%)	31 (75.60%)	2 (4.87%)	8 (19.51%)	0.2

Table 4: Awareness amongst medical students about possible ways to alleviate the symptoms of PCOS (n = 148)

Question	Female (n=107)			Male (n=41)			P value
	Yes	No	I don't know	Yes	No	I don't know	
Doing exercises	102 (95.32%)	4 (3.73%)	1 (0.93%)	29 (70.73%)	4 (9.75%)	8 (19.51%)	0.00003
Losing weight	98 (91.58%)	6 (5.60%)	3 (2.80%)	34 (82.92%)	1 (2.43%)	6 (14.63%)	0.02
Using Oral Contraceptive Pills	73 (68.22%)	19 (17.75%)	15 (14.01%)	20 (48.78%)	10 (24.39%)	11 (26.82%)	0.07
Eating protein rich food	70 (65.42%)	10 (9.34%)	27 (25.23%)	18 (43.90%)	6 (14.63%)	17 (41.46%)	0.05
Eating fat rich food	4 (3.73%)	91 (85.04%)	12 (11.21%)	1 (2.43%)	31 (75.60%)	9 (21.95%)	0.2
Increased intake of fruits and vegetables	100 (93.45%)	3 (2.80%)	4 (3.73%)	32 (78.04%)	1 (2.43%)	8 (19.51%)	0.007

Table 5: Awareness amongst medical students about some miscellaneous features of PCOS (n = 148)

Question	Female (n=107)			Male (n=41)			P value
	Yes	No	I don't know	Yes	No	I don't know	
It is an inherited disorder	15 (14.01%)	74 (69.15%)	18 (16.82%)	11 (26.82%)	18 (43.90%)	12 (29.26%)	0.01
Regulation of menstrual cycle helps in ovulation regulation	86 (80.37%)	8 (7.47%)	13 (12.14%)	27 (65.85%)	6 (14.63%)	8 (19.51%)	0.1
Treating PCOS reduces the chance of getting cancer	71 (66.35%)	12 (11.21%)	24 (22.42%)	29 (70.73%)	2 (4.87%)	10 (24.39%)	0.4
Shape of the ovaries changes	57 (53.27%)	22 (20.56%)	28 (26.16%)	24 (58.53%)	7 (17.07%)	10 (24.39%)	0.8
Ovulation is affected due to PCOS	99 (92.52%)	3 (2.80%)	5 (4.67%)	33 (80.48%)	2 (4.87%)	6 (14.63%)	0.08

Table 6: Response of medical students on some personal questionson PCOS (n = 148)

Question	Female (n=107)			Male (n=41)			P value
	Yes	No	I don't know	Yes	No	I don't know	
If you are a female, have you been diagnosed with PCOS?	38 (35.51%)	69 (64.48%)	0	0	1 (2.43%)	40 (95.56%)	
Do you have anyone in your family or close relatives who has been diagnosed with PCOS?	43 (40.18%)	64 (59.81%)	0	17 (41.46%)	24 (58.53%)	0	

was known to 44.85% females and 63.41% males and the result was statistically significant (p value 0.02). Females were more aware of the role of lifestyle modification to alleviate symptoms of PCOS. Awareness about doing exercise (p value 0.0003), losing weight (p value 0.02) and increased intake of fruits and vegetables (p value 0.007) as curative measures of PCOS were statistically significant. PCOS is an inherited disorder was known to 14.01% females and 26.82% males and the result was statistically significant (p value 0.01). Change in ovarian morphology occurring in PCOS was known to 53.27% females and 58.53% males but the result was statistically insignificant (p value 0.8).

6. Conclusion

Polycystic Ovary Syndrome (PCOS) is emerging as a serious threat in modern medicine. In spite of its increasing prevalence, the knowledge and awareness about the disease is still limited. Social and environmental factors may

take the key role, and the management is largely based on lifestyle modification. Therefore, the awareness about the disease is of prime importance, specially for medical students. Though the disease is limitedto females only, but knowledge about the symptoms and necessary lifestyle modification should be known to all medical students.

7. Sources of Funding

None.

8. Conflict of Interest

None.

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Cite this article: Ghosh A, Dutta S, Ghosh T. Awareness of polycystic ovary syndrome (PCOS) among medical students— A multi-centric cross-sectional survey in West Bengal. *Indian J Obstet Gynecol Res* 2022;9(3):342-346.