

Assessment of Clinical Profile, Perceptions of Polycystic Ovarian Syndrome & Its Associated Factors among Adolescents Girls Attending O&G OPD

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Abstract

Background: Polycystic ovarian syndrome is a complex disorder wherein numerous genetic variants and environmental factors interact, combine & contribute to its pathophysiology.

Objectives: 1) To find out the differences in clinical manifestations, hormonal & biochemical parameters among adolescent girls from urban and rural area with PCOS. 2) To assess the perceptions about PCOS among the study respondents. 3) To determine the association between the various factors with perception among the adolescents girls.

Methodology: It was a cross-sectional study conducted for a period of four months (Feb. to May 2022) among 236 adolescent girls (10-19 years) of age, from urban and rural area attending Obst. & Gynaec OPD of Bhimo Bhoi Medical college & Hospital (BBMCH), Balangir, Odisha.

Results: Adolescent girls from urban area 23(19.5%) had shown more proportion of PCOS Compared to their 12(10.2%) rural counterparts. The difference in clinical presentation among the respondents residing in urban and rural area was found to be significant with Yates correction χ^2 value =12.8481, $p=0.00338$ in case of acne and χ^2 value = 6.843, $p=0.00889$ for hirsutism. The perceptions regarding PCOS disease process and its management was found to be better among adolescent girls of urban area compared to their rural counterparts. Respondents from both urban and rural had no idea regarding the long term sequel of PCOS. The difference between the level of perception with the educational qualification level of the adolescent girls was found to be significant with $\chi^2 = 105.0399$, $p=0.001$.

Conclusion: Awareness regarding the importance of healthy diet, lifestyle changes, Yoga, meditation, stress management to be done through proper counseling.

Keywords: Adolescents girls, Knowledge, Perception, Polycystic ovarian Syndrome.

Introduction

Most common endocrine disorder in women of reproductive age group is Polycystic ovarian

syndrome. The clinical presentation includes acne, irregular or absence of menstrual periods, hirsutism.

PCOS is not only a disorder of modernised

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lifestyle of urban population but it is also prevalent in the rural areas where people still follow a traditional lifestyle.

There is an increase risk for various metabolic, reproductive, oncological, skin manifestations and psychological manifestations. PCOS in itself along with its associated co-morbidities reduces the quality of life and increases the out of pocket expenditures (OOPE).

In this modern era though there are so many diagnostic methods and treatment modalities available to combat PCOS but still issues contributing to delay in seeking medical is present it is due to lack of perceptions, awareness and low educational level among the adolescent girls for which PCOS has still been an enigmatic disease among the adolescent population.

In 2012 worldwide PCOS has affected 116million women (3.4%) estimated by World Health Organization (WHO).^[1] Globally, prevalence estimates of PCOS are highly variable, ranging from 2.2% to as high as 26%. In India, experts claim 10% of the women to be affected by PCOS and yet no proper published statistical data on the prevalence of PCOS in India is available.^[2]

A brief systematic review reported that out of 27 surveys the pooled mean prevalence was found to be 21.27% using different diagnostic criteria.^[3]

The most recent criteria that is being used for diagnosis of PCOS is Androgen Excess Society Task Force criteria 2006.(AE-PCOS 2006) which includes: 1) Presence of hyper-androgenism (clinical and/or biochemical), 2) Ovarian dysfunction (oligo-anovulation and/or polycystic ovaries), and 3) the exclusion of related disorders of thyroid, adrenal and Pituitary.^[4]

But there has been very few comparative studies conducted to determine the difference in proportion of PCOS among Indian adolescent girls from Urban and Rural attending the hospital set up, their perceptions regarding the symptoms and its complications and the various associated factors affecting the perceptions. With this background we have conducted this study with the following

Objectives - 1) To find out the differences in

clinical manifestations & Biochemical-hormonal Parameter among urban and rural adolescent girls with PCOS. 2) To assess the perception about PCOS among the study respondents. 3) To determine the association between the various factors with perception among the adolescents girls

Methodology

Study setting and Design: It was a cross-sectional study conducted for a period of four months (Feb. to May 2022) among 236 adolescent girls (10-19 years) of age, from urban and rural area, attending Obst. & Gynaec OPD of Bhimo Bhoi Medical college & Hospital (BBMCH), Balangir, Odisha.

Sample size The sample size was determined using the formula for a single population proportion based on the assumptions of 95% confidence level, 5% degree of precision and 18% the proportion of PCOS among adolescents girls.^[5] Thus the calculated 'n' was 236. The estimated sample was pooled through equal contributions from each residence area i.e (urban and rural)

Sampling technique: A team of 2 faculty were the investigators who were oriented about the tool and survey in advance. The survey team scheduled their visit to the department outdoor thrice a week. On any survey day, each of the members of the team visited the department, out of all the available outdoor patients who satisfied the inclusion and exclusion criteria, two patients from rural area and 2 from urban area were enrolled for survey through simple random sampling by lot. The name of villages and town area which were the catchment area of BBMCH, Balangir were kept in hand which was obtained from Census 2011.^[6]

Inclusion criteria Adolescent girls of age between 10-19 years who had attained menarche coming from urban and rural area for treatment to Obst and Gynae OPD for the first time with her medical complains and given informed consent by her or assent by her parents who had accompanied her for check-up to hospital were included for study purpose.

Exclusion criteria Females with thyroid disease, hyper-prolactinemia, and adrenal hyperplasia and those who were coming for follow up visits were excluded.

Study tool & Data collection- The survey was conducted during the initial two months followed by data compilation, analysis and project writing during the next two months. A semi-structured questionnaire was used which was validated by a pilot study on forty patients. It was administered by the research staff by face to face interview..

Ethical approval: Prior approval of the institutional ethical committee was obtained for the study. Informed written consent was ensured from the respondents. Minors and incapacitated patients assent was taken which were given by the accompanying attendants.

Data management and statistical Analysis: The data collected was analysed by using SPSS statistical package (version 21.0). Descriptive statistics were performed on the socio-demographic data and Pearson's chi-square test and Fisher exact test was used to find out the difference in the clinical manifestation, perception level among the respondents and to find out association between the perception with the various factors. To compare the biochemical -hormonal parameters between the study respondents the unpaired student t test was used. The differences between the groups were considered significant when the p value was <0.05.

Results

Mean age of the study participants was 15 ± 3 years with maximum age range of 19 years and minimum age of 11 years. All the respondents from urban area 118(100%) were un-married where as those from rural area only 1% were married. Respondents from urban area were 110 (93.2%) literate & 6.8% illiterate whereas those from rural area i.e 40 (33.9%) were illiterate. The study participants from urban area most of them belonged to middle class 64 (54.2%)

followed by upper class 44 (37.3%) & 10 (8.5%) were of lower SES class respectively whereas those from rural area 75(63.6%) mostly belonged to lower Class according to Modified Kuppuswamy's scale. [7]

It was observed that the proportion of PCOS in adolescent girl attending BBMCH, Balangir was 35 (14.7%). In term of proportion of PCOS among respondents based on residence, it was seen that out of 35 respondents, 23(19.5%) of the study participants were from urban area and 12(10.2%) reside in rural area.

The difference in clinical presentation among the respondents residing in urban and rural area was found to be significant with Yates correction χ^2 value was 12.8481, $p=0.00338$ in case of acne and χ^2 value was 6.843, $p=0.00889$ for hirsutism. Oligomenorrhea was the most common menstrual disorder complained by the study participants from both urban 21(91.4%) and rural 9(75%) area.

Table 1 highlighted the survey results on the perceptions of the study respondents regarding PCOS which implied that respondents from urban area 77 (65.3%) thought PCOS as a disease. Regarding the treatment modalities availability those respondents whose residence is in urban area majority of them had idea regarding the various method of treatment i.e (75.4%) whereas those participants whose residence is from rural area almost half 59(50%) could not say whether PCOS was preventable, controllable or curable The difference of the perceptions among the respondents based on residence area (urban and rural) regarding the disease process ($\chi^2 =43.6538$ $p=0.0001$) and the treatment modalities available ($\chi^2 =20.291$, $p=0.002$) were found to statistically significant. (Table 3)

Table 1: Perceptions about PCOS among study respondents (n=236)

Variables	Respondents from Urban area (n=118)	Respondents from Rural area (n=118)	Total (n=236)	Chi-Square P-Value
What do you mean by PCOS				χ^2 (with Yates correction) =41.1359 $p=0.0001^{**}$
Natural Phenomena	8(6.8%)	2(1.7%)	9(3.8%)	
Disease	77(65.3%)	34(28.8%)	111(47%)	
Don't know	33(27.9%)	82(69.5%)	116(49.2%)	

Continue.....

What are the methods of various treatment modalities				$\chi^2=20.291$ $p=0.002^{**}$
Preventable	11 (9.3%)	2 (1.7%)	13(5.5%)	
Controllable	31(26.3%)	19(16.1%)	50(21.2%)	
Curable	47(39.8%)	38(32.2%)	85(36%)	
Don't know	29(24.6%)	59(50%)	88(37.3%)	
Does PCOS affect Pregnancy				$\chi^2 = 59.8317$ $p=0.0001^{**}$
Yes	91(77.1%)	42(35.6%)	133(56.4%)	
No	13(11%)	5(4.2%)	18(7.6%)	
Don't know	14(11.9%)	71(60.2%)	85(36%)	
Any idea about long term sequels				$\chi^2 = 2.9246$ $p=0.08$
Yes	41(34.7%)	29(24.6%)	70(29.7%)	
No	77(65.3%)	89(75.4%)	166(70.3%)	
Does the role of life style modifications helpful				χ^2 (with Yates correction) = 85.6324 $p=0.0001^{**}$
Yes	63(53.4%)	3(2.6%)	66(28%)	
No	24(20.3%)	22(18.6%)	46(19.5%)	
Don't know	31(26.3%)	93(78.8%)	124(52.5%)	
Does the role of Early medical help useful				χ^2 (Fisher exact test) = 8.933 $p=0.001^{**}$
Yes	102(86.5%)	114(96.6%)	216(91.5%)	
No	3(2.5%)	2(1.7%)	5(2.1%)	
Don't know	13(11%)	2(1.7%)	15(6.4%)	

[*figure in bracket indicate percentage; **where p is significant with a value below 0.05]

The association of education with the perception level among respondents which showed that who were illiterate were having no perception or idea regarding PCOS. The difference between the level of perception with the educational qualification level was found to be significant with $\chi^2 = 105.0399$, $p=0.001^{**}$.

Discussion

PCOS is a disorder of genetic, hormonal and metabolic abnormality that affects not only the fertility but also associated with long term complications.

It was observed in the present study that the Proportion of PCOS was 35(14.7%) which was more seen among the respondents belonging to urban area 23(19.5%) compared to rural counterpart i.e 12(10.2%)

Study by **Balaji et al and Laddad et al** had found out the prevalence of PCOS to be 18% and 17.33% in their study which was a slightly higher as compared to present study findings. [5][8]

Gupta et al had observed observed that prevalence of PCOS among urban respondents was 20% whereas among the rural group it was only

4%. [9] The variation in proportion of PCOS among the urban and rural respondents might be due to lifestyle factors, sedentary activity, decreased awareness, less accessibility to health care facilities may be the contributing factors.

In the present study we found out that 11 (91.7%) of respondents who were from rural area presented with acne and 10(83%) had hirsutism whereas the urban participants had acne (21.7%) & hirsutism (30.4%) as clinical presentation on the time of visit. In a comparative study done by **Gupta et al** it was concluded that clinical manifestations like hirsutism was seen more in urban group (20%) as compared to rural group (6%) which was different from the present study findings. [9] The respondents from urban area might be undergoing cosmetic care compared to those who reside in rural area for which acne and hirsutism were less clinical manifestation seen among urban participants compared to their counter part.

Javed et al reported that, 44% of PCOS respondents were complaining of oligomenorrhea which was comparatively less proportion compared to the findings. [10].

Study by **Rasool et al AL-Lami et al and Radha et al** observed that, level of serum LH, Prolactin, FBS, serum insulin and serum. testosterone were significantly higher among women with PCOS, except FSH, rural participants diagnosed with PCOS had increased serum insulin level as compared to urban group [11] [12] [13]

In the present study we found that the respondents from urban area i.e 77(65.3%) thought PCOS to be a disease whereas more than half of the participants from rural area i.e 82(69.5%) had no idea regarding PCOS.

Jena et al, reported that out of 965 adolescents girls 25.9% were aware about PCOS and among them majority (48%) belonged to urban area whereas the awareness regarding PCOS was very low in the rural area. Diet restriction and exercise are the way to life style modifications which have positive effect on PCOS was accepted by 70% of the urban adolescent girls which was almost similar to the present study findings.[14]

Study conducted by **Vaithy A k et al** in south east coastal rural population and **Palomba et al** had observed that 90% of the adolescent girls had a very vague idea about PCOS and among them there was low awareness ratio regarding infertility, long term sequelae of PCOS like diabetes, hypertension. [15],[16] These was similar with the present study finding where we have seen that more than half of the rural participants i.e. 82(69.5%) had no idea regarding PCOS. The difference in the perception was seen it might be due to lack of knowledge, awareness and stigma.

Study by **Rao et al** reported that the educational level played a very important role those with a graduate degree were more aware and had good level of understanding regarding PCOS. [17] In our study we found out that the difference between level of perception with the educational qualification level was found to be significant with $X^2 = 105.0399$, $p=0.001^{**}$; who were illiterate were having no perception or idea regarding PCOS whereas those with educational qualification level more than secondary or higher secondary were more aware about the disease.

Conclusion

The perception regarding PCOS, its treatment modalities, its effect on fertility & pregnancy was seen better among urban adolescent girls compared to their rural counterpart. But most of the adolescents in both the groups were unaware about the long term complications. Respondents having no educational qualification were having less awareness and knowledge (perception) regarding the PCOS.

Recommendation: Health education & campaigning through various IEC materials to increase the availability of information which will reduce the shyness or stigma among them.

Limitation: It was a hospital based study thus external validation must be limited. So a community based study must be done.

Conflict of Interest: Nil

Funding: Nil

References

1. Kabel A M. Polycystic ovarian syndrome: insights into pathogenesis, diagnosis, prognosis, pharmacological and non-pharmacological treatment. Pharm Bioprocess 2016 Jan 1;4(1):7-12.
2. Bharathi R V, Swetha S, Neerajaa J, Madhavica J V, Janani D M, Rekha S N. An epidemiological survey: Effect of predisposing factors for PCOS in India urban and rural population. Middle east Fertility society Journal 2017 Dec;22(4):313-316.
3. Deswal R, Narwal V, Dang A, Pundir C. The prevalence of Polycystic Ovary Syndrome: A Brief systematic Review. J Hum Reprod Sci 2020 Oct;13(4):261-271.
4. Azziz R, Carmina E, Dwvaily D, Kandaraksi E D et al. The Androgen Excess and PCOS Society criteria for the polycystic ovary syndrome: the complete task force report. Fertil Steril 2009 Feb;91(2):456-88.doi:10.1016
5. Balaji S, Amadi C, Prasad S, Kasv J B. Urban rural Comparison of Polycystic Ovary Syndrome Burden among Adolescents Girls in a Hospital Setting in India. Biomed Res Int.2015 January;2015(1):1-10, Article ID 158951.
6. Balangir, Odisha Inida Census Data-census 2011. <https://www.census2011.co.in/census/district/417-balangir.html>

7. Khairnar MR, Wadgave U, Shimpi PV. Kuppaswamy's socioeconomic status scale: a revision of occupation and income criteria for 2016. *Indian J Pediatr* 2017;84:3-6.
8. Laddad M M, Ksjirsagar N S, Shinde G P, Shivade V S. study of prevalence and determinants of polycystic ovarian syndrome among adolescent girls in rural area: a prospective study. *Int J Reod Contracept Obstet Gynecol* 2019 Aug;8(8):3135-3139.
9. Gupta S, Gupta V, Khan I, Liyas M. A Hospital Based Comparative Study of Clinical Profile of Polycystic Ovarian Syndrome in Rural versus Urban Adolescent Girls. *Advances in Human Biology* 2021 May;11(2): 169-171.
10. Javed, R, Ghafoor, F., Mahboob, A., Zubair, H., &Munir, A. Frequency and Relationship of Polycystic Ovarian Syndrome with Hirsutism. *Journal of Fatima Jinnah Medical University* 2014 April;8(2):4-9.
11. Rassol S, Dar L, Hameed A. Prevalence of Polycystic ovaries among patients with hirsutism and menstrual abnormalities. *Journal of Pakistan Association of Dermatology* 2011 July.21(3).
12. Al-Lami HB, Tu ma A T, Safi W A. Association between Anti-Mullerian Hormone and other biomarkers with ovarian function in polycystic ovarian syndrome of Iraqi women. *Journal of Contemporary Medical Sciences* 2020 December .6(4):168-175.
13. Radha P, Devi RS, Madhavi J. Comparative study of prevalence of polycystic ovarian syndrome in rural and urban population. *J Adv Med Dent Sci Res* 2016;4(2):905.
14. Jena S K, Mishra L, Naik S S, Khan S. Awareness and Opinion about Polycystic Ovarian Syndrome(PCOS) among young women: a developing county perspective. *Int J Adolesc Med Health*.2020 Jun 8;33(3):123-126.
15. Vaithy A K, Samal R, Shnmugaamy K, Umadevi K R et al. Knowledge ,attitude and awareness toward polycystic ovarian syndrome among women of south east coastal population of India. *IP Journal of Diagnostic Pathology and Oncology*, 2020;5(2):215-219.
16. Palomba S, Santagni S, Falbo A, Sala G B L. Complications and challenges associated with Polycystic ovary syndrome: current perspectives. *Int J womens Health*. 2015 July;7:745-63.
17. Rao M, Broughton K S, Lemieux M J. cross-sectional study on the knowledge and prevalence of PCOs at a multi-ethnic University. *Progress in Preventive Medicine*. 2020 June:1-9.