

Systematic Review on Recognising Patterns in Incidence of Polycystic Ovarian Syndrome in Young Women

¹Poonam Thakur (Assistant Professor)
Sharda University

²Komal Shara (Assistant Professor)
Amity University

³Sanjna Kumari (Assistant Professor)
Amity University

Abstract:- PCOS is a longterm endocrinology state that is various and mostly strikes women who are considered reproductive. Periodic deviations, fertility problems, hirsuteness pimples, and overweight constitute some of those signs who often show up possibly altogether or in part. Three kinds of guidelines have been established proposed for recognising women with PCOS: the Organisation of Androgen Excess (2006), the Rotterdam criteria (2003), along with the National Academy of Health's recommendations (1992). Those three categories are composed of follicular morphology with cystic follicular on persvaginal imaging, physiological and/or molecular elevated testosterone levels, chronic oligo/anovulation, or an assortment of these medical conditions. All categories acknowledge that beforehand an identification of PCOS is determined, additional disorders involving a condition called and/or excessive androgen levels ought to be ruled investigated. 1-4 Cycles of menstruation have been used by numerous researchers and health care providers to figure out ovulatory state. Menstrual periods of fewer than twenty-one and greater than 35 days constitute an oligo or anovulation, yet polycystic ovarian structure is analytically notable whenever ≥ 12 follies with an ovarian mass that exceeds 10 ml or a radius of 2-9 mm. meanwhile the physiological alterations correlated with maturity and the clinical alterations seen in PCOS converge, all diagnostic indicators must not be utilised for evaluating young adults.(1)

Keywords:- PCOD, Criteria from the Androgen Excessive Foundation and the Standards set in Rotterdam Since 2003.

I. INTRODUCTION

In 1935, Stein and Leventhal gave the initial description of PCOS, describing amenorrhoea, sexual dysfunction, and swollen ovaries that had numerous cystic lesions. On women that are of reproductive maturity, one of the most prevalent hormonal conditions is PCOS, also known as cystic ovary disorder. One common scenario of women which describe the infertile is PCOS. Around the world, the incidence of PCOS ranges significantly, ranging 2.2% to 26%. Incidence levels in some Asian nations vary

among Throughout the Chinese mainland, 2.3% to 7.5%, in addition to the Republic of Lanka, 6.3%. In the Indian, only a few investigations have been carried out. Marathi and the southern portion of India, the typical rates of cystic condition were twenty two point five percent and nine point thirteen by the standards set in Rotterdam 10.7% by Androgen Excessive Foundation.

A prospective Healthcare University, the city of Hyderabad, has been the site of a scientific inquiry., on the incidence of a condition called polycystic ovarian syndrome (PC between teenage girls who are 15 to 19 that visited an outpatient treatment clinic (OPD) via indicators of menstrual cramps, a sexual disorder, or each of them. The girls received instructions to have a chemically, hormone-related, and ultrasonographic examination for PCOS, which is detection pursuant to Rotterdam's criteria. As per the investigation category's outcomes, 11.96% of the respondents experienced PCOS. The finding that was obtained was the belief that despite PCOS is not particularly prevalent all around and can prove problematic to detect in young adults, it becomes more prominent through youth. This is crucial to modify the way one lives at this point in time for avoiding for a long time metabolic processes and sexual health problems..(6)

From December 2015 to May 2017, an extensive cross-sectional research investigation was conducted by researchers in Haryana among women who were of reproductive age. The approach used was an arbitrary several phases sampling strategy. Surveys were put to use to assess participants with PCOS. Samples of blood have been collected for physiological examination among participants who were suffering from either prospective and established PCOS illnesses. There were women who satisfied the requirements set forth in Rotterdam for polycystic ovarian disorder (PCO), elevated testosterone levels (HA), and menstrual cycle disorders (MI). Criteria for rejection comprised females having hyperprolactinemia, pituitary overgrowth, and thyroid gland conditions. 94 (4.21%) of the 2400 women who underwent screenings worldwide reported PCOS. 30% of the characteristics associated with PCOS comprised diagnostic HA (hirsutism, H); 64% comprised physiological HA; 35% comprised PCO; 16% comprised

H+MI; 10% comprised MI+PCO; 52% comprised MI+HA; 14% comprised PCO+H; and 19% comprised PCO+H+HA. As a whole, 67 seventy-one percent of the women with PCOS stayed in metropolitan areas, whereas 27 percent did so in rural regions. The proportion of PCOS-affected women inhabiting Haryana's communities appeared to be much greater. Diet and lifestyle decisions could have been partially responsible of this variation. Women with neglect PCOS can put themselves exposed for difficult-to-manage adverse health consequences. This is crucial for promoting continual research and changes in habits for better leadership.(7)

Young girls have been impacted through an endocrinology condition identified as polycystic ovarian syndrome. Investigation suggests that anywhere from five to ten percent of women throughout their reproductive stages were impacted. The objective of the research investigation aimed to determine the trainee nurses' knowledge concerning the condition known as polycystic ovarian syndrome. Utilising a planned survey, healthcare information of learners was collected. statistics acquired at Nitte Usha Institute of Nursing Sciences with 150 participants. A descriptive survey method of investigation was utilised When the participants were organised on the basis of demographic variables, it was discovered the 82% of those surveyed maintained a variety of nutrition, 75% of them were considered to be Christians, and 92% of women had regular periods. From the participants, 85% fell within an average age between 21 to 25 years. Regarding polycystic ovarian syndrome, 76% of the respondents showed intermediate comprehension while 10.7% showed adequate understanding. Thus, the investigation eventually arrived at the view that, at the five percent level of statistical significance, each participant's eating practices, consumption of processed foods, along with the data provider were all associated based on their degree of comprehension on PCOS.(8)

In a specified statistical area in Mumbai, a cross-sectional community-based survey has been performed to ascertain the overall incidence of cyst ovary condition nationwide 778 young girls and youths within the age range of 15 and 24. All of them, 600 attended all medical facilities biochemical, and ultrasonography (USG) examinations. Based on the research's outcomes, overall PCOS frequency was 10.7% based on the Androgen Excess Society's guidelines and 22.5% based to Rotterdam. Based to the Rotterdam criteria, 71.8% of the women with PCOS appeared nonobese. Most frequent characteristics, featuring 52.6% of participants displaying polycystic ovaries and oligomenorrhea on USG, constituted borderline PCOS The confidence interval (CI) for menstrual cramps history remained 93.3%, whereas the inverse diagnostic rating remained 86.7%, implying that there might be case of PCOS. In 19.2% of individuals with PCOS having a confirmed diagnosis, elevated insulin levels (serum insulin >15 μ U/mL) was observed. In contrast to non-obese PCOS girls, obese girls having the disorder had more average insulin tended to be hirsute, and more hypertensive. Based to this research, PCOS is an outbreak which evolves

throughout youth.as initial measures to avert illnesses that are later discovered to be focused against this age group. (9)

Iranian female incidence of polycystic ovarian syndrome and the challenges that such induces became the focus of a meta-analysis research study. The primary objective of the current investigation was to explore the incidence of PCO along with related issues affecting Iranian women. occurrence .Thirty research investigations that occurred to be carried out from 2006 and 2011 were analysed as part of the narrative review. There were twenty thousand participators in all together and women in the study's group all around, ages 10-45. The overall incidence of PCOS had been 6.8% (95% CI: 4.11–8.5), 19.5% (95% CI: 2.24–8.14) in Rotterdam, and 4.41% (95% CI: 5.68–4.14) in ultrasonography. Furthermore, it was determined that 13% of those surveyed reported hirsutism, 26% suffered acne, 9% had androgenic hair loss, 28% suffered periods deviations, 21% became overweight, 19% became obese, and 8% reported infertility. The investigation revealed that PCOS doesn't seem that prevalent in Iran. Still, early detection of PCOS is of the utmost significance since it increases the potential of adverse effects like coronary artery disease cardiovascular illness, and infertility; it is suggested that public health practitioners draft community-wide guidelines within this regard.(10)

II. METHODOLOGY

- *Researching Strategy: Quantitative Strategy*
- *Research Design: Systemic review*
- *Inclusion Criteria:*
 - ✓ Women in the demographic ranging from 18 to 35 are analyzed in a cross-section ,case control, and cohort studies.
 - ✓ Women who are diagnosed with PCOS
 - ✓ Articles that are published in English language.
 - ✓ Diagnostic criteria that is NIH Criteria, Rotterdam criteria, Androgen Excess Society
 - ✓ Study published from 2016-21.
- *Exclusion Criteria:*
 - ✓ Inappropriate design
 - ✓ Documents written in languages apart from English
 - ✓ Epidemiological research studies which describe the incidence in impacted subjects'
- *Search Strategy*

Two reviewers started systemic online literature search including PubMed, Google Scholar, The following search terminology were used with headings fro searching studies the prevalence of PCOS: The phrases "frequency of the condition," "epidemiology of cystic condition," " cystic condition in childbearing time,were combined in the search method. For the purpose of discovering additional investigations, citations in the reported publications were also searched at. All discord throughout the acquisition of facts being determined by agreement.

III. STUDY ASSESSMENT AND SCREENING TECHNIQUE

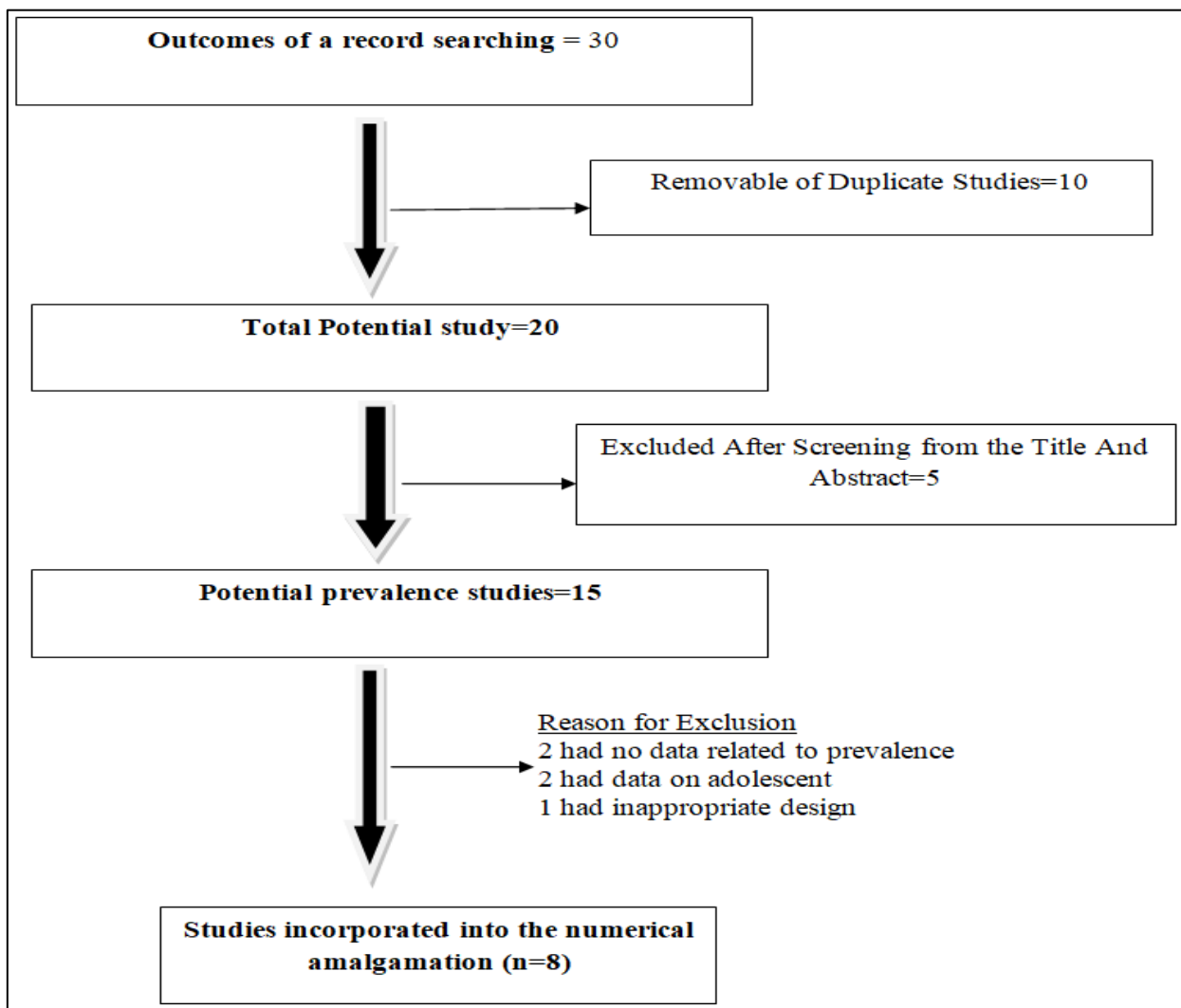


Fig 1 Study Assessment and Screening Technique

Table 1 Prevalence of PCOS by : Criteria from the Androgen Excessive Foundation and the Standards set in Rotterdam,

Sr No	Author (Year)	Region	Nature of Investigation	Respondents	Incidence		
					NIH Criteria	Rotterdam's criteria	AES Criteria
1	Wendy A. March (2016)	Adelaide, South Australia	Retrospective cohort study	N= 728 27-35	8.7%	11.9%	10.2%
2	Harmandeep Gill (2016)	India	Cross Sectional Community Based Study	N=1052 18-25Years	3.7%	11.9%	-
3	FahimehRemizani Tehrani (2017)	Iran	Cross Sectional Study Community Based Study	N=1126 18-35Years	7.1%	14.6%	11.7%
4	Elham Sharif (2017)	Qatar	Prospective Cross Sectional Study	N=126 18-30Years	18.33%	-	-
5	Mahesh Gupta (2017)	India	cross sectional study	N=840 15-21Years	-	80.2%	-
6	Beena Joshi (2018)	India	Cross sectional Study	N=778 15-24Years	-	22.5%	10.7%
7	Archna Singh (2018)	India	Prospective Study Cross Sectional	N=117 15-19Years	-	11.96%	-
8	N.A. Desai (2018)	India	Cross sectional community Based study	N= 881 13-18years	-	13.54%	-
9	Ram Nidhi(2019)	India	Cross Sectional Study	N=460 15-18		9.31%	2.395
10	Arpita Jian (2020)	India	Cross Sectional Study	N=960 15-24Years	7.5%	18.68%	11.18%

IV. CONCLUSION

For reviewing the last five year studies Most Common criteria used were **NIH Criteria**, **Rotterdam's criteria**, **AES Criteria** among them most of researcher used Rotterdam criteria.

Total 1 studies were finalized that fulfill inclusion criteria and total participants were 7068, Prevalence rate according to three mentioned criteria from 2016 to 2021 were **NIH Criteria** 8.7%,3.7%,7.1%,18.33% from 2016 to 2017 but as per **Rotterdam's criteria** its 11.9%,11.9%,14.6%,80.2%,22.5%,11.96%,13.54%,9.31%,18.68% and according to **AES Criteria**10.2%,11.7%,10.7%,2.395,11.18%. From above finding its conclude that most of criteria used were **Rotterdam's criteria and prevalence rate were lies between 11.9% to 18.68.**

REFERENCES

- [1]. Rao, Manisha MS^a; Broughton, K. Shane PhD^b; LeMieux, Monique J. PhD^b. Cross-sectional Study on the Knowledge and Prevalence of PCOS at a Multiethnic University. *Progress in Preventive Medicine*: June 2020 - Volume - Issue - p e0028(1)
- [2]. Zahid.Dr. Aruna Rastogi,National Health Portal. Feb 26, 2016 Available at: <https://www.nhp.gov.in/disease/endocrinal/ovaries/polycystic-ovary-syndrome-pcos>
- [3]. Sunanda B.A Study to Assess the Knowledge Regarding PCOS (Polycystic Ovarian Syndrome) among Nursing Students at NUINS .September 2016*Journal of Health and Allied Sciences* NU 06(03):24-26DOI:10.1055/s-0040-1708657 Available at https://www.researchgate.net/publication/340853988_A_Study_to_Assess_the_Knowledge_Regarding_PCOS_Polycystic_Ovarian_Syndrome_among_Nursing_Students_at_NUINS
- [4]. Beena Joshi, Srabani Mukherjee et al. A cross-sectional study of polycystic ovarian syndrome among adolescent and young girls *Indian Journal of endocrinology metabolism*2014 May-Jun; 18(3): 317–324. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4056129/>
- [5]. *Anahita Jalilian*1 M.D., *Faezeh Kian*. Meta-analysis : Prevalence of polycystic ovary syndrome and its associated complications.*Iran J Reprod Med* .Vol. 13. No. 10. pp: 591-604, October 2015 Available at: <http://www.bioline.org.br/pdf?rm15078>
- [6]. Wendy A. March 2016 Adelaide, South Australia conducted retrospective cohort study involving 728 girls of 27-35 year of age with reported prevalence according to **NIH Criteria** 8.7%, **Rotterdam's criteria** 11.9%, **AES Criteria** 10.2%.
- [7]. Harmandeep Gill (2016), India, conducted Cross Sectional Community Based Study involving 1052 participants with age group 18-25 year report prevalence **NIH Criteria** 3.7%, **Rotterdam's criteria** 11.9%.
- [8]. Fahimeh Remizani Tehrani (2017), Iran, conducted Cross Sectional Study Community Based Study involving n=1126, participants with age group 18-35 year report prevalence , **NIH Criteria** 7.1%, **Rotterdam's criteria** 14.6%, **AES Criteria** 11.7%
- [9]. Elham Sharif (2017), Qatar, conducted Prospective Cross Sectional Study, involving n=126 participants with age group n= 18-30 year report prevalence, **NIH Criteria**=18.33%
- [10]. Mahesh Gupta (2017), India, conducted cross sectional study, involving n=840 participants with age group 15-21 year, report prevalence **Rotterdam's criteria** :80.2%
- [11]. Beena Joshi (2018) India, conducted Cross sectional Study, involving n=778 participants with age group, 15-24 year age, report prevalence, **Rotterdam's criteria** 22.5%, **AES Criteria**: 10.7%
- [12]. Archana Singh (2018), India, conducted Prospective Study Cross Sectional involving, n=117 participants with age group 5-19 year, report prevalence **Rotterdam's criteria** 11.96%
- [13]. N.A. Desai (2018), India, conducted Cross sectional community Based study, involving n=881 participants with age group 13-18, year report prevalence, **Rotterdam's criteria** 13.54%
- [14]. Ram Nidhi (2019). India, conducted Cross Sectional Study, involving n=460 participants with age group 15-18 year report prevalence,, **Rotterdam's criteria** 9.31%, **AES Criteria** 2.395
- [15]. Arpita Jian (2020), India, conducted Cross Sectional Study involving ,n=960 participants with age group ye 15-24 year report prevalence,, **NIH Criteria** 7.5%, **Rotterdam's criteria**=18.68%, **AES Criteria**=11.18%