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RESEARCH ARTICLE

RISK STATUS OF POLYCYSTIC OVARIAN SYNDROME AMONG ADOLESCENT GIRLS

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ABSTRACT

A descriptive study to assess the risk status of polycystic ovarian syndrome among adolescent girls in a college at Kanyakumari district. **Aim:** The aim of the study was to assess the risk status of polycystic ovarian syndrome among adolescent girls. **Materials and Methods:** Quantitative research approach with descriptive research design was adapted for the study. Nonprobability convenient sampling technique was used to select 90 samples for the study. Data was collected using structured questionnaires and hirsutism assessment scale to assess the risk status of polycystic ovarian syndrome. The data was analyzed using descriptive and inferential statistics.**Results:** The result of the study shows that, among 90 adolescent girls, according to the risk status of polycystic ovarian syndrome based on oligo- Anovulation, 69 (76.67%) had low risk, 16 (17.78%) had moderate risk, and 5 (5.56%) had high risk. Regarding the risk status of polycystic ovarian syndrome based on hirsutism, 71 (78.89%) had low risk, 19 (21.11%) had moderate risk, and none of them came under the high risk. **Conclusion:** The study concluded that the majority of adolescent girls had a low risk of polycystic ovarian syndrome and a considerable proportion had moderate risk of polycystic ovarian syndrome based on both oligo-anovulation and hirsutism.

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INTRODUCTION

Adolescents between the ages of 10 and 19 experience a transition period between childhood and adulthood and with it experience rapid physical, cognitive and psychosocial growth.Polycystic ovarian syndrome is one of the most common endocrine disorders affecting women of reproductive age, with its onset often occurring during adolescence. It is characterized by hormonal imbalance, irregular menstrual cycles, excessive androgen levels, and the presence of multiple cysts in the ovaries. In worldwide the condition affects an estimated 6–13% of women of reproductive age, and up to 70% of cases are undiagnosed. 3 to 11 % are in the age group of 10 to 19 years. (World Health Organization,2023).In India, the pooled prevalence among adolescent girls aged 14 – 19 years is reported at 17.7%, indicating nearly one in five adolescents are affected using Rotterdam criteria. (Kum *et al*., Journal of Family Medicine and Primary Care, 2021). Imbalanced hormone levels can cause changes in a girl's entire body such as weight gain, obesity, especially when the extra fat around the waist, hirsutism, thinning hair on the head, acne and clogged pores. Irregular periods, usually with a lack of ovulation, can make it difficult to become pregnant.

Polycystic ovarian syndrome is a leading cause of infertility. The biological and psychological effects of polycystic ovarian syndrome, particularly those related to obesity, body image and infertility, can lead to mental health challenges and social stigma.

NEED FOR THE STUDY

Polycystic Ovarian Syndrome has emerged as a growing public health concern among adolescent girls due to its increasing prevalence and long-term health implications. Recent studies indicate a worrying trend: the prevalence of polycystic ovarian syndrome among adolescents has increased to 9.8% globally and up to 17.7% in India (European Journal of Endocrinology, 2023; Kumar *et al*., 2021).These data emphasize the need for systematic screening and risk assessment among adolescent girls to promote early intervention and improve reproductive health outcomes. Among adolescent girls, the condition is often underdiagnosed or misinterpreted as normal pubertal changes, which delays early intervention. Assessing the risk status of polycystic ovarian syndrome during this stage is vital for early identification of at-risk individuals and prevention of

Table 1. Adolescent Polycystic ovarian syndrome prevalence in India

Author and year	Setting	Age group	Sample size	Prevalence rate
Rao *et al*.,2023	Hyderabad	15 - 19	400	11.5%
Mishra *et al*., 2022	Punjab	15 - 18	250	11.96%
Gupta *et al*., 2024	Delhi-NCR	18 - 25	600	17.4%
Patel *et al*., 2023	Gujarat	14 - 19	320	10.9%
Jabeen *et al*.,2022	Telangana	15 - 25	250	6.80%
Shringarpure *et al*.,2023	Gujarat	18 - 25	308	12%

long-term complications such as infertility, obesity, type-2 diabetes, and cardiovascular disorders.Early detection can facilitate timely lifestyle interventions, nutritional guidance, and counseling to prevent disease progression and reduce complications like infertility, metabolic syndrome, and type 2 diabetes in adulthood. Understanding the risk status of polycystic ovarian syndrome during adolescence will not only help in promoting reproductive health awareness but also contribute to the formulation of school-based and community-based preventive health programs. The findings of this study will therefore aid healthcare providers, educators, and policymakers in designing effective screening, education, and intervention strategies for adolescent girls.

Objectives

- To assess the prevalence of polycystic ovarian syndrome among adolescent girls.
- To find out the association between the selected demographic and clinical variables with the risk status of polycystic ovarian syndrome among adolescent girls.

Hypotheses

H_1: There is a significant difference between the selected demographic variables with risk status of polycystic ovarian syndrome among adolescent girls.

H_2: There is a significant difference between the selected predictive variables with risk status of polycystic ovarian syndrome among adolescent girls.

METHODOLOGY

Research approach – A quantitative research approach was utilized.

Research design – The research design used in this study was descriptive, Exploratory design.

Research variables – In this study the research variable was risk status.

Research setting – The setting of this study was St. Xavier's Catholic college of nursing, Chunkankadai at Kanyakumari district.

Sample – The sample consists ofadolescent girls studying 1st yearand aged between 18 to 19 years.

Sample size – The sample size was 90 adolescent girls aged between 18 to 19 years.

Sampling technique – Non-probability convenient sampling technique was used.

Tool

Section A part I – The demographic variables were as age, religion, type of family, area of residence, type of diet, family income, occupational status of parents.

Part II - The clinicalvariables were as body mass index, History of precocious puberty, family history of non-communicable diseases, health risk behaviors.

Section B Part I – Structured questionnaires on oligo-anovulationwas used to assess the risk status of polycystic ovarian syndrome.

Part II – Hirsutism assessment scale was used to assess the risk status of polycystic ovarian syndrome.

Ethical consideration – The proposed study was conducted after the approval of the Institutional ethical committee of St. Xavier's is Catholic College of Nursing, Chunkankadai.Informed written consent was obtained from each participant after a clear explanation of the study purpose, type of data required, nature of commitments, participation on a voluntary basis before starting the data collection.Assurance was given to the study participants regarding the confidentiality of data.

RESULTS AND DISCUSSION

Findings were analysed and discussed based on the objectives of the study.

Demographic variables: According to the age, 50 (55.56%) were 18 years, 40 (44.44%) were 19 years. Considering religion, 81 (90%) were Christian, 9 (10%) were Hindu. Regarding type of family, 75 (83.33%) were nuclear families, 14 (15.56%) were joint family, 1 (1.11%) was extended family. Analyzing the area of residence, 74 (82.22%) were rural, 16 (17.78%) were urban. According to the type of diet, 3 (3.33%) were vegetarian, 87 (96.67) were non-vegetarian, 86 (95.56) were ova-vegetarian. Considering family monthly income, 7 (7.78%) were above ₹50,000, 7 (7.78%) were ₹41,000-₹50,000, 5 (5.6%) were ₹31,000-₹40,000, 32 (35.56%) were ₹21,000-₹30,000, 23 (25.56%) were ₹11,000-₹20,000, and 16 (17.78%) were below ₹10,000. Regarding occupational status of father 3(3.33%) were government employees, 4(4.44%) were private employees, 3(3.33%) were self-employees, 75(83.33%) were coolie workers, 5 (5.56%) were deceased.Analyzing occupational status of mother 1(1.11%) was Government Employee, 5(5.56%) were Private Employees, 1(1.11%) was Self-Employee, 5(5.56%) were Coolie Workers, 74(82.22%) were Homemakers, 4 (4.44%) were Deceased.

Clinical variables: According to the body mass index, 28 (31.11%) were underweight, 54 (60%) were normal weight, 7 (7.78%) were overweight, 1 (1.11%) was obese class 1. Analyzing the history of precocious puberty, 86 (95.56%) were aged between 10-15 years, 4 (4.44%) were above 15 years. Considering family history of non-Communicable diseases, 75 (83.33%) had no history of non-communicable diseases 10 (11.11%) had diabetes mellitus 8 (8.89%) had Hypertension 2 (2.22%) had thyroid disorder. Regarding health risk behaviors,

84 (93.33%) had no history of health risk behaviors, 6 (6.67%) had history of consumption of fast foods.

The first objective was to assess the prevalence of polycystic ovarian syndrome among adolescent girls.

Figure 1: Among 90 adolescent girls, according to the risk status of polycystic ovarian syndrome, based on Oligo-anovulation 69 (76.67%) had low risk, 16 (17.78%) had moderate risk, 5 (5.56%) had high risk.

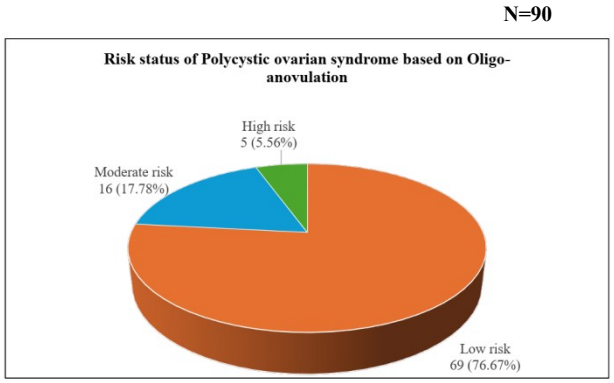


Figure 1. Frequency and percentage distribution of adolescents according to risk status of polycystic ovarian syndrome based on oligo-anovulation

Figure 2: Regarding the risk status of polycystic ovarian syndrome based on hirsutism, 71 (78.89%) had low risk, 19 (21.11%) had moderate risk, none of them came under high risk.

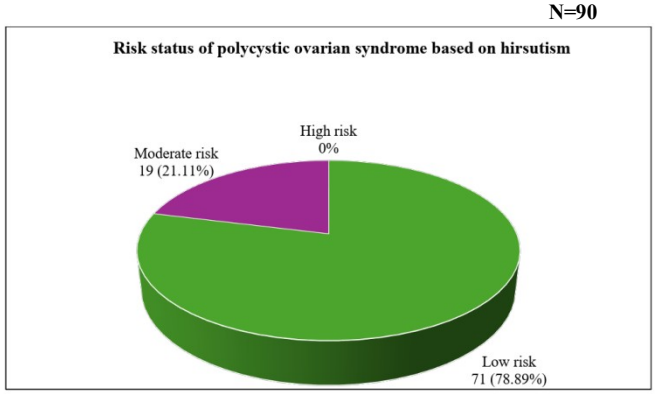


Figure 2. Frequency and percentage distribution of adolescents according to risk status of polycystic ovarian syndrome based on hirsutism

The first objective was supported by a descriptive study was conducted by Ebtihag O Alenzi *et al*. (2024), revealed that among 1144 adult women age from 18 years and above 41.3% of participants had low risk, 33.3% had a moderate risk and 2.9% had high risk of developing polycystic ovarian syndrome based on the frequency and percentage distribution.

The second objective was to find out the association between the selected demographic and clinical variables with the risk status of polycystic ovarian syndrome among adolescent girls.

Association between the selected demographic and clinical variables with the risk status of polycystic ovarian syndrome based on oligo-anovulation among adolescent girls: The calculated value of the demographic variables such as type of diet (χ^2=16.52) and occupational status of father (χ^2=20.87) were greater than the table value which indicates that there was a significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls. The calculated value of the demographic variables such as age (χ^2=0.266), religion (χ^2=2.53), type of family (χ^2=1.68), area of residence (χ^2=2.79), family monthly income (χ^2=5.23), occupational status of mother (χ^2=9.273) were lesser than the table value which indicates that there was no significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls. The calculated value of the clinical variable, health risk behaviours (χ^2=11.1) was greater than the table value which indicates that there was a significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls. The calculated value of the clinical variables such as body mass index (χ^2=0.973), history of precocious puberty (χ^2=2.93), family history of non-communicable diseases (χ^2=0.267), were lesser than the table value which indicates that there was no significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls.

Association between the selected demographic and clinical variables with the risk status of polycystic ovarian syndrome based on hirsutism among adolescent girls: The calculated value of the demographic variable, family monthly income (χ^2=25.89) was greater than the table value which indicates that there was a significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls. The calculated value of the demographic variables such as age (χ^2=0.052), religion (χ^2=0.042), type of family (χ^2=2.324), area of residence (χ^2=0.176), type of diet (χ^2=1.046), occupational status of father (χ^2=1.625), occupational status of mother (χ^2=5.41) were lesser than the table value which indicates that there was no significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls. The calculated value of the clinical variable, body mass index (χ^2=8.393) was greater than the table value which indicates that there was a significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls. The calculated value of the clinical variables such as, history of precocious puberty (χ^2=0.041), family history of non-communicable diseases (χ^2=0.013), health risk behaviours (χ^2=0.078) were lesser than the table value which indicates that there was no significant association at p<0.05 with the risk status of polycystic ovarian syndrome among adolescent girls.

IMPLICATIONS

- Nurses shall perform early screening in schools and communities to identify adolescents at risk status for polycystic ovarian syndrome.
- Train nursing students in screening, counselling and lifestyle modification strategies for adolescents.
- Implement policies for routine adolescent health screening, including polycystic ovarian syndrome risk assessment in schools and primary health centers.
- Evaluate the effectiveness of various interventions and lifestyle modification programs on reducing risk of polycystic ovarian syndrome.

RECOMMENDATIONS

- Similar study shall be conducted on large sample.

- Related study shall be conducted considering all reproductive age groups.
- Research study shall be conducted by using other methods of data collection tools to assess prevalence.

CONCLUSION

The aim of the study was to assess the risk status of polycystic ovarian syndrome among adolescent girls. The study concluded that the majority of adolescent girls had low risk of polycystic ovarian syndrome and a considerable proportion had moderate risk of polycystic ovarian syndrome based on both oligo-anovulation and hirsutism.

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