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AN EXPLORATORY SURVEY TO IDENTIFY THE ADOLESCENTS WITH HIGH RISK FOR POLYCYSTIC OVARIAN SYNDROME AT SRM COLLEGE OF NURSING, KATTANKULATHUR

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ABSTRACT

Polycystic ovary syndrome is a problem in which a woman's hormones are out of balance. It can cause problems with your periods and make it difficult to get pregnant. PCOS also may cause unwanted changes in the way you look. If it isn't treated, over time it can lead to serious health problems, such as diabetes and heart disease. Most women with PCOS grow many small cysts on their ovaries. That is why it is called polycystic ovary syndrome. The cysts are not harmful but lead to hormone imbalances. Early diagnosis and treatment can help control the symptoms and prevent long-term problems. Hormones are chemical messengers that trigger many different processes, including growth and energy production. The aim of the study was to identify adolescents with high risk for PCOS and to associate the level of risk with their demographic variables. Quantitative approach and an exploratory survey were used to identify the adolescents with high risk for polycystic ovarian syndrome. The study was carried out among adolescent girls of B.Sc nursing 1st year and 2nd year students at SRM College of nursing, Kattankulathur. The tool used for the data collection consisted of 2 parts: Part A: demographic variables and Part B: structured questionnaire. The study was conducted at SRM College of Nursing, Kattankulathur. The study comprised of Ist and IInd yr BSc (N) Students who fulfill the inclusion criteria. On Probability Convenient Sampling technique was used to select the samples. The analysis reveals that with respect to the level of risk in developing PCOS, 54 adolescents are in the age group of 17-18years, 88 adolescents belong to the category of undergraduate,53 adolescent girls are residing in the urban area,26 father's education have completed high school, 28 mother's education are in primary level,34 father's education are semi-skilled,52 adolescent girl's mother are housewife's,71 adolescent girls belongs to a nuclear family,54 adolescent girls have the habit of reading health related magazines, 51 adolescent girls speaks Tamil and maximum of the adolescent girls belongs to a Hindu religion are at risk for developing PCOS. There is a statistical significant association found between the high risk factor of PCOS with their demographic variables like " Living Area" and "Mother's Education" with p value <0.05

KEY WORDS

Polycystic ovary syndrome, Hormones, Chemical messengers, adolescents with high risk

INTRODUCTION

Adolescence is a period having the sense of identity and the sense of intimacy. It is the transition from childhood to adulthood and so it is not a smooth one. In addition to this intellectual and emotional upheaval, rapid body growth causes them anxiety and cultural pressures of today's world add further stress to their uncertainty. 10 to 20% of the world population comprises adolescents and their problems have not been fully appreciated and addressed until recent times.[1]

Gynaecological problems of adolescents occupy a special space in the spectrum of gynaecological disorders of all ages. Menstrual abnormalities are the common problems of adolescents. Menstrual disorders (58.06%) were found to be the commonest gynaecological problem. About 50% of girls, the initial menstrual periods are irregular, prolonged, scanty or excessive or without dysmenorrhoea. This is because of the physical nature of the problems which are so unique, special, and specific for the age group, and also because of

the associated and psychological factors which are very important in the growth and psychological remodelling of someone in the transition between childhood and womanhood.

Polycystic ovarian syndrome (PCOS) is a group of recognizable patterns of symptoms or abnormalities which requires the presence of two of the following three conditions. i) Oligo and /or anovolution ii) polycystic ovaries iii) hyperandrogenism2.

Recognizing the features of this syndrome can be very challenging in adolescence. Although adolescents concerns are often cosmetic, if left untreated these girls are at risk for diabetes, metabolic syndrome, and infertility as they mature. Efforts should be made to diagnose and treat PCOS to minimize the development of symptoms and prevent the onset of cardiovascular and metabolic disturbances.[3]

Polycystic ovarian syndrome is a heterogeneous endocrine disorder that affects one in 15 women worldwide. It is the most frequent cause of hyperandrogenism and oligo-anovulation which have substantial psychological, social and economic consequences. Immigrant populations from the Indian subcontinent to the UK and Australian women of aboriginal heritage also have a higher prevalence of PCOS.[4]

In women of Indian subcontinent, prevalence rates of PCOS are as high as 50% have been detected. It is responsible for 18% of infertility and 40% of hirsutism cases in a study conducted at Srinagar. Metabolic syndrome was diagnosed in 46% women's with PCOS in a study done in Kolkata. Women diagnosed as having PCOS before pregnancy have an increased risk of developing gestational diabetes. PCOS is a genetic disorder that each child has a 50% of inheriting the disorder from a parent who carries the gene.[5]

A retrospective study was done in 58 preadolescent and adolescent girls to study the age at diagnosis of PCOS and to compare risk factors involved in causing PCOS highlighted that PCOS may occur at a younger age in girls who develop early puberties. Therefore, the diagnosis and workup should be considered in young girls with risk factors suggestive of PCOS.[6]

Studies show that obesity is an important pathogenic factor in the development of hyper-androgenism in women with PCOS thereby affects ovulation, pregnancy rates and outcomes. At the same time Obesity and PCOS increases the risk for infertility.

A comprehensive community-based study among 3443 adolescent girls (15-18 years) was done to find out the prevalence of PCOS from 10 schools, Trivandrum. Among them, 339 girls were with the symptoms of PCOS and they were under-nourished (37.6%), normal weight (51.2%), overweight (8.6%) and obese (2.6%). Lack of awareness and lifestyle changes are considered to be the major factor leading to this phenomenon.

From all the above studies the researcher found that the adolescent girls have to obtain adequate knowledge regarding PCOS. Since PCOS is the most common endocrinologic disorders during adolescence, there is always a need to investigate all new and relevant data. Early recognition and prompt treatment of PCOS in adolescents is important to prevent long term complications. Therefore as a nurse, the researcher has a pivotal role in creating awareness among the adolescent girls about the modification of lifestyle and prevention of future complications of PCOS. Hence the researcher felt that there is a need to identify the adolescents who are at risk for developing PCOS.

AIM OF THE STUDY

1. To identify adolescents with high risk for PCOS
2. To associate the level of risk with their demographic variables

METHODOLOGY

Quantitative approach and an exploratory survey was used to identify the adolescents with high risk for polycystic ovarian syndrome. The study was carried out among adolescent girls of B.Sc nursing 1st year and 2nd year students at SRM College of nursing, Kattankulathur. The study variable includes identifying high risk for PCOS among adolescent girls

and the demographic variable includes age, educational status, area of living, type of family, habit of reading health related magazine, languages known, and religion. The size of the samples was 100 adolescent girls who were selected based on the inclusion and exclusion criteria, Non Probability Convenient sampling technique.

The criteria used for selection

A. Inclusion criteria

a) Adolescent girls who are in the age group of 13 to 20 years
b) Adolescent girls who speak English or Hindi or Tamil
c) Adolescent girls who are attended menarche.

B. Exclusion criteria

a) Adolescent girls who are seriously ill
b) Adolescent girls who are not willing to participate.

Ethical consideration: Formal approval was obtained from the Institutional review board and Institutional ethical committee of SRM University, Kattankulathur, Chennai, Tamilnadu, India. In addition, the participants were informed of their right to withdraw anytime during the course of the study.

INSTRUMENTS

Collection of all data pertaining to this study was employing the technique of questionnaire method. A questionnaire was developed for the collection of data for this study. The tool consisted of two sections.

Section-A: This section dealt with Demographic Variables, such as Age, Education, Area of living, Type of family, Habit of reading health related magazine, Languages known and Religion.

Section –B: This section consisted of 20 questions to identify adolescents with high risk for polycystic ovarian syndrome. Each question is to be answered as "YES "or "NO". For every YES response, score 1 was given and for NO responses, score 0 was given. That otal scoring interpretation were as follows, 1-6: Low risk, 7-12: Moderate risk, 13-20: High risk.

METHOD OF DATACOLLECTION

The investigator has collected data with effect from month of February 05/02/2015 to 05/03/2015 in SRM College of Nursing; Kattankulathur The investigator introduced her samples and the purpose of the study was explained to ensure better co-operation and collaboration during the data collection period. The written consent from the samples was taken and they were assured confidentiality.

Using Questionnaire method, data collection procedure was completed. The questionnaire was administered regarding polycystic ovarian syndrome among adolescents to identify high risk. Approximately 10-15 minutes was spent to elicit the data for each adolescent girl. The self instructional module was distributed to each adolescent girl at the end of the data collection procedure. The data gathering process was continued till the sample size was 100.

Statistical analysis:

The information collected from the study participants was scored and tabulated. The data was entered into the master coding sheet and saved in EXCEL. Statistical analysis was conducted with the help of the Statistical Package for Social Sciences (SPSS)-16. Mean, percentage and Standard deviation was used to explain the demographic variables and Chi-square test was used to associate the demographic variables with risk levels.

RESULTS

Section A Analysis of demographic variables related to adolescent girls

Table 1: Frequency and percentage distribution of demographic variables related to adolescent girls; N=100

Demographic variables		Frequency	Percentage
Age in years	12-14yrs	1	1%
	17-18yrs	63	63%
	19-20yrs	36	36%
Educational Qualification	High school	1	1%
	Undergraduate	99	99%
Area of living	Rural	44	44%
	Urban	56	56%
Father's Education	Illiterate	19	19%
	Primary	27	27%
	High school	31	31%
	Puc	1	1%
	Graduate	17	17%
	Post graduate	5	5%
Mother's Education	Illiterate	21	21%
	Primary	28	28%
	High school	30	30%
	Puc	3	3%
	Graduate	13	13%
	Post graduate	5	5%
Father's Occupation	Unskilled	17	17%
	Semi-skilled	39	39%
	Professional	26	26%
	Business	18	18%
Mother's Occupation	Unskilled	18	18%
	Semi-skilled	11	11%
	Professional	11	11%
	Housewife	60	60%
Family Type	Nuclear family	79	79%
	Joint family	18	18%
	Extended family	1	1%
	Others	2	2%
Reading health related magazine	Yes	59	59%
	No	41	41%
Speaking Language	Tamil	57	57%
	English	39	39%
	Hindi	1	1%
	Others	3	3%
Religion	Hindu	75	75%
	Christian	19	19%
	Muslim	3	3%
	Others	2	2%

The analysis of the findings showed that among 100 samples, 63% of girls were under the age group of 17-18 years, 36% were under the age group 19-20 years and 15 under the age group 12-14 years. 99% of them are undergraduates and 1% is in high school.44% of them is living in the rural area and 56% of them are living in urban area. 19% of the father's education are illiterate, 27% primary, 31%

high school, 1% PUC, 17% Graduate and 5 post graduates. 21% of the mother's education is illiterate, 28% primary, 30% high school, 3% PUC, 13% graduate and 5% are post graduates. 17% of the father's occupation is unskilled, 39% semiskilled, 26% professional and 185 are in business. 18% of the mother's occupation is unskilled, 11% are semiskilled, 11% are professional and 60% are housewives. 79% came from a nuclear family, 185 from joint family, 1% from extended family and 2% from others.59% of the adolescent girls reads health related magazines and 41% does not read health related magazines. 57% of the adolescent girls speak Tamil, 39% speaks English, 15 speak Hindi and about 3% speaks other languages. The majority of the girls are Hindu 76%, 19 Christians, 3% Muslims and 25 belongs to other religion.

Section B to identify the high risk factors of PCOS among adolescents.

Table 2: Percentage distribution table of demographic variables with level of risk**;** N=100

Demographic Variable		**Level of Risk**	
		Moderate	**High**
Age	12 - 14 Years	0	1
	17 - 18 Years	9	54
	19 - 20 Years	2	34
Educational Qualifications	High School	0	1
	Under Graduate	11	88
Living Area	Urban	3	53
	Rural	8	36
Fathers Education	Illiterate	1	18
	Primary	2	25
	High School	5	26
	PUC	0	1
	Graduate	2	15
	Post Graduate	1	4
Mothers Education	Illiterate	1	20
	Primary	0	28
	High School	7	23
	PUC	0	3
	Graduate	1	12
	Post Graduate	2	3
Fathers Occupation	Unskilled	1	16
	Semi-skilled	5	34
	Professional	3	23
	Business	2	16
Mothers Occupation	Unskilled	0	18
	Semi-skilled	1	10
	Professional	2	9
	Housewife	8	52
Family Type	Nuclear Family	8	71
	Joint Family	3	15
	Extended Family	0	1
	Others	0	2
Reading Health Related Magazine	Yes	5	54
	No	6	35
Language	English	5	34
	Tamil	6	51
	Hindi	0	1

	Others	0	3
Religion	Hindu	8	68
	Muslim	0	3
	Christian	3	16
	Others	0	2

The analysis reveals that with respect to the level of risk in developing PCOS, 54 adolescents are in the age group of 17-18 years, 88 adolescents belong to the category of undergraduate, 53 adolescent girls are residing in the urban area, 26 father's education have completed high school, 28 mother's education are in primary level, 34 father's education are semi-skilled, 52 adolescent girl's mother are housewife's, 71 adolescent girls belongs to a nuclear family, 54 adolescent girls have the habit of reading health related magazines, 51 adolescent girls speaks Tamil and maximum of the adolescent girls belongs to a Hindu religion .Hence this analysis reveals that they are at risk for developing PCOS.

Association between the demographic variables and risk levels

Table 3: Chi-Square test for finding the association between the demographic variables and risk levels; **N=100**

Demographic Variable		Level of Risk		Chi-Square Value	Degrees of freedom	p-value
		Moderate	High			
Age	12 - 14 Years	0	1	1.91	2	0.39
	17 - 18 Years	9	54			
	19 - 20 Years	2	34			
Educational Qualifications	High School	0	1	0.12	1	0.72
	Under Graduate	11	88			
Living Area	Urban	3	53	4.14	1	**0.04***
	Rural	8	36			
Fathers Education	Illiterate	1	18	2.38	5	0.80
	Primary	2	25			
	High School	5	26			
	PUC	0	1			
	Graduate	2	15			
	Post Graduate	1	4			
Mothers Education	Illiterate	1	20	13.77	5	**0.02***
	Primary	0	28			
	High School	7	23			
	PUC	0	3			
	Graduate	1	12			
	Post Graduate	2	3			
Fathers Occupation	Unskilled	1	16	0.59	3	0.90
	Semi-skilled	5	34			
	Professional	3	23			
	Business	2	16			
Mothers Occupation	Unskilled	0	18	3.18	3	0.36
	Semi-skilled	1	10			
	Professional	2	9			
	Housewife	8	52			
Family Type	Nuclear Family	8	71	1.02	3	0.80
	Joint Family	3	15			
	Extended Family	0	1			
	Others	0	2			

Reading Health Related Magazine	Yes	5	54	0.94	1	0.33
	No	6	35			
Language	English	5	34	0.64	3	0.89
	Tamil	6	51			
	Hindi	0	1			
	Others	0	3			
Religion	Hindu	8	68	1.08	3	0.78
	Muslim	0	3			
	Christian	3	16			
	Others	0	2			

Significant P=<0.05*

The above table reveals that the p values corresponding to "Living area" and "Mothers education" are <0.05 and are significant at 5% level of significance. Hence we conclude that the demographic variables "Living area" and "Mothers education" are influencing the risk levels of Polycystic Ovarian Syndrome and others are not influencing the risk levels.

DISCUSSION

Ricardo Azziz, Daniel A Dumesic, Mark O. Goodarzee (2012) conducted a study of over 600 unselected women from the general population, the prevalence of PCOS increased minimally and non-significantly with increasing body mass. In contrast, the average body mass of over 700 women with PCOS diagnosed over a 15-year interval increased linearly and in concert with the increasing obesity of the surrounding population). Taken together, they concluded that these data suggest that the epidemics of excess caloric intake and overweightness play a limited role in the development of PCOS[7]

Majumdar A, Singh Ta (2009) A Study was conducted in New Delhi to study the prevalence of clinical manifestations in obese and lean PCOS women and their health hazards. The women were diagnosed to have PCOS by the Rotterdam 2003 criteria. Group A included overweight and obese, Group B included normal weight and lean and were further divided into two groups according to their body mass index. The result was found that the prevalence of menstrual irregularities, clinical hyperandrogenism, endometrial hyperplasia (EH), and type 2 diabetes mellitus was significantly higher in the obese group, whereas android central obesity was similar in both groups. The study highlighted that diabetes and EH appears to be more prevalent in the obese, putting a greater risk of morbid problems at a much younger age than the lean ones [8].

Shobha Elsa, Sanatombi, Devi,AnusuyaPrabhu (2014) conducted a study in selected pre-university colleges of Udupi District and 752 students were selected from six colleges. Risk Status of the students was assessed administering the High Risk Assessment questionnaire and awareness program was given to the risk group students, and the post-test was taken on 8th day following intervention. A total of 102 (13.6%) students were found to have moderate risk for developing PCOS.A significant increase in the knowledge scores on PCOS was observed after the awareness program. At the end of the study they revealed that an awareness program could bring about a desirable change in knowledge among adolescent girls regarding PCOS and prevent future complications.[9]

CONCLUSION

The analysis reveals that with respect to the level of risk in developing PCOS, 54 adolescents are in the age group of 17-18years, 88 adolescents belong to the category of undergraduate,53 adolescent girls are residing in the urban area,26 father's education have completed high school, 28 mother's education are in primary level,34 father's education are semi-skilled,52 adolescent girl's mother are housewife's,71 adolescent girls belongs to a nuclear

family,54 adolescent girls have the habit of reading health related magazines, 51 adolescent girls speaks Tamil and maximum of the adolescent girls belongs to a Hindu religion. Hence this analysis reveals that they are at risk for developing PCOS.

Association between risk factors with their demographic variables were assessed by Pearson chi square test. The analysis revealed that there is a statistical significant association found between the high risk factor of PCOS with their demographic variables like " Living Area" and "Mother's Education" with p value <0.05.

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Conflict of Interest:

Dr.Abirami.P and Ms.Vigies declares that no conflict of interest. In addition, this study was not funded.

Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008

Statement of Informed Consent

Informed consent was obtained from all the study participants for being included in the study.

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