Effect of Educational Sessions about Polycystic Ovarian Syndrome for Late Adolescent Girls: Self Protective Measures

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Abstract: Polycystic ovarian syndrome is a heterogeneous endocrine disorder which affects one in 15 women worldwide. **Study aim** was to evaluate effect of educational sessions about polycystic ovarian syndrome for late adolescent girls self-protective measures. Study setting was conducted at the secondary school for girls, Mansoura, Egypt after obtaining manger approval. **Subjects were** consisted of 95 students at 2nd year. **Tool: A Structured Interviewing Questionnaire Schedule consisted of three Parts** were used by the researchers to collect data, **1st** part consisted of questions related to demographic data, **2nd** part, consisted of items related to the knowledge of anatomy and physiology of ovary, **3rd**part, consisted of items related to the knowledge about polycystic ovarian syndrome and its protective measures. **Results:** The findings of the study revealed that before educational sessions' utilization the majority of students (87.4%) had inadequate knowledge regard polycystic ovarian syndrome. The overall pretest mean score was 14±3.383 with mean percentage 38.89%. While the overall posttest mean score was 32.86±2.079 and the mean percentage 91.31.The overall score posttest mean value (32.87) was higher than the overall score pretest (14.0). **Conclusion:** The knowledge score after educational sessions was higher than before, there was statistical significance difference of knowledge score between before and after educational sessions in all variables $p < 0.05$.There was a statistically significant difference between pretest students' knowledge score in relation to student's age while there was no statistically significant relations was found with resident, mother education and work, father education and work, family type and monthly income. Thus, utilization of educational sessions was effective to increase the knowledge level of late adolescent girls about polycystic ovarian syndrome self-protective measures.

Key words: Polycystic Ovarian Syndrome, Educational Sessions, Self-Protective Measures.

INTRODUCTION

The impact of modernization and technological ascertainment reflects in daily life. Our lifestyle has changed a lot. Food consumption is concentrated increasingly on sugar, fast food, and soft drinks. This unhealthy eating habits and lack of exercise leads to many diseases in adolescents as Polycystic Ovarian Syndrome (PCOS) **(1).**

Polycystic Ovary Syndrome is a common health problem which increases in adolescent's girls and young women during their reproductive years. It is one of the most endocrine disorders of women in reproductive age, with prevalence of 5–10% in different ethnic populations and as much as 22% of women in general population have polycystic ovaries on ultrasound(**2**).

In girls with polycystic ovary syndrome, the ovaries produce higher amounts of androgens than normal, which interfere with ovum development and release. Symptoms of Polycystic ovary syndrome include: menstrual irregularities, infertility, increased hair growth in a male distribution pattern (e.g., on face and chest) and acne **(3).** Also it is associated with marked degrees of abdominal obesity, insulin resistance, and other risk factors for chronic disease including dyslipidemia, hypertension, and increased levels of pro-inflammatory markers **(4).**

Manifestation of Polycystic ovary syndrome often occurs around the time of menarche as lengthened or irregular menstrual cycles. It often goes undiagnosed at this time because most girls have irregular menstrual cycles. In addition, the prescribed treatment is oral contraceptive pills which will regulate menstrual cycle and often controls hirsutism and acne. Often these girls will remain undiagnosed until much later, may be at the time when they come to seek treatment for infertility **(5).**

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 **(6).**

Self-protective measures of any disease can be done by health education. Health education is one of the generality widely adopted health promotion strategies used with young people, and is universally be represented as effective. It is extend people with knowledge, and enabling them to be responsible for and protect their own health **(7).**

Significance of the Study:

Polycystic ovary syndrome is clinical and public health importance as it is very common, affecting up to one in five women of reproductive age. It has significant and diverse clinical implications including reproductive (hyperandrogenism, infertility, hirsutism), metabolic (insulin resistance, diabetes mellitus, cardiovascular risk) and psychological features (increased anxiety, depression) **(8)**. It

is associated with about 75% of all condition of an ovulatory infertility (**9**).

So there is a need to increase awareness among late adolescent girls to prevent it clinical implications. Self-protective measures by education, awareness and self-control are the only way to control it from rising further and affecting more girls. There are no studies done until now at Mansoura city to increase the knowledge regarding polycystic ovarian syndrome. So the researchers decided to educate late adolescent girls regarding polycystic ovarian syndrome.

Aim of the Study:

The aim of this study was to evaluate the effect of educational sessions about polycystic ovarian syndrome for late adolescent girls self-protective measures.

Research Hypothesis:

Utilization of educational sessions will be effective to increase the knowledge level of late adolescent girls about polycystic ovarian syndrome self-protective measures.

SUBJECTS AND METHOD

Study Design:

A quasi-experimental – one group pre and post-test study design.

Study Setting:

The study was conducted at the secondary school for girls, Mansoura, Egypt.

Subjects of the Study:

Non-probability purposive sampling was used. Included 95 students chosen from 190 students according to inclusion & exclusion criteria:

Inclusion Criteria:

a. Late adolescent girls between 16-17 years old (2nd year students at the secondary school for girls, Mansoura, Egypt).
b. Students accepted to participate in the study.

Exclusion Criteria:

a. Students who had knowledge about PCOs, their Numbers were (18 students).
b. Not willing to participate (82 students).

Tool of Data Collection:

A structured interviewing Questionnaire schedule

It was developed by researchers after reviewing the related literature and with suggestions and guidance from the experts in the field of Obstetric and Gynecological medicine and nursing, structured questionnaire was developed (Arabic language) by the researchers for the purpose of the current study.

The Questionnaire Consisted of Three Parts:

Part I: This part of the tool consisted of questions related to demographic data such as age, religions, residence, mother education and occupation, father education and occupation, age of menarche, menstruation regularity.

Part II: This part of the tool consisted of items related to the knowledge of anatomy and physiology of ovary and it was consisted of 10 items and those are objective type multiple choice questions.

Part III: This part of the tool consisted of items related to the knowledge about polycystic ovarian syndrome and the self-protective measures. It consisted of 26 items and those are objective type multiple choice questions that help in assessing student' knowledge as definition- causes- risk factors, signs and symptoms, complications, management, prevention and the protective measures.

Scoring of the Items:

Each correct answer was given a score of 'one' and wrong answer a score of 'zero 'respectively. The highest score was 36.

Scoring key for the knowledge regarding PCOS

Grade	Percentage	Marks
Inadequate knowledge	0-50%	0-16
Moderate knowledge	51 – 75%	17-27
Adequate knowledge	76-100%	28-36

Validity of the Tool:

Tool was reviewed by 3 jury from experts in the Obstetric Nursing field tested the content validity; According to expert's suggestions the tool was modified.

Development of Educational Sessions:

The educational Sessions on polycystic ovarian syndrome was prepared based on the review of literature and discussion with the subject expert's booklet was prepared according to the content. The developed content was given to three experts to establish the content validity and they were requested to give their opinion and suggestions about the content of the educational Sessions. According to expert's suggestions the educational sessions contents was modified.

Reliability:

Reliability of Part II and III of the tool was tested for 10 adolescent girls during pilot study by using Cronbach's α (alpha).The reliability value of the tool is 0.90 and hence the questionnaire was found to be highly reliable.

Pilot Study:

A pilot study was conducted on 10 students in order to test the applicability and relevance of the study tool and test clarity of the designed questionnaire as well as to estimate the time needed to answer them and then the necessary modifications were done, these students were excluded from the study sample.

Field of work:

*   Formal permission was obtained from, manager of secondary girls school. The main study was conducted from October 2014 to December 2014 among 95 students, second year at the secondary school for girls who were selected by using Non-probability purposive sampling technique.
*   Prior to data collection the researchers introduced them and explained the purpose of the study.

- Structured questionnaire was used with adequate explanation and the data was collected (pretest).
- Then, the students were classified in two groups, and the content was divided on 4 interactive sessions for each group of girls for one month. The sessions were classified for each group of girls one time every week. The session was conducted for 2 hour started from 11 a.m. to 1 p.m. Power point presentation was done, followed by a group discussion. These sessions were applied at classroom of school. The content included information about anatomy and physiology of ovary, definition of PCOS, signs and symptoms, causes, risk factors, prevention and treatment and at the end of lecture colored booklet of PCOS was given to students which was prepared by the researchers.
- The post test was done after two months of educational session utilization by using same questionnaire.

Statistical Analysis:

Statistical Package for Social Sciences (SPSS) version 16.0 was used for quantitative data analysis. Quality control was done at the stages of coding and data entry. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Qualitative variables were compared using paired t test. Cronbach's α (alpha) is used for test score reliability measure of sample Statistical significance was considered at p-value <0.05.

Ethical Considerations:

Written consent was obtained from the students included in the sample. They were reassured about the confidentiality of the information. They were informed about their rights to refuse participation or withdraw at any time. The study maneuvers couldn't entail any harm to participants.

RESULTS

Table (1) Frequency Distribution of Students According to Socio-Demographic Characteristics

ITEMS	NO	%
Age		
16	6	7.5
17	88	92.5
Mother Education		
Basic	39	40.8
Secondary	42	44.5
University	14	14.7
Mother Work		
House wife	63	66.3
Governmental	27	28.4
Private	5	5.3
Father Education		
Basic	33	34.7
Secondary	35	36.9
University	27	28.4
Father work		
Not working	7	7.4
Governmental	52	54.7
Private	36	37.9
Family type		
Nuclear	90	94.7
Joint	5	5.3
Monthly Income		
Not enough	74	77.9
Enough	20	21.1
Saved	1	1.1
Family History of Polycystic Ovarian Syndrome		
Yes	7	7.4
No	88	92.6

Table (1) Shows frequency distribution of Students according to Socio-Demographic characteristics, as regards student's age, majority of them (92.5%) belong to the age group of 17 years. As regards students mothers & fathers education were 44.5%&36.8% respectively were secondary school educated and regarding their occupation 66.3% of students mother were house wife and 54.7% of students' father were employed in governmental jobs. Most of students 94.7% belong to nuclear family. With regard to family monthly income was not enough in 77.9% of students, as regard family history for PCOS was negative in 92.6%.
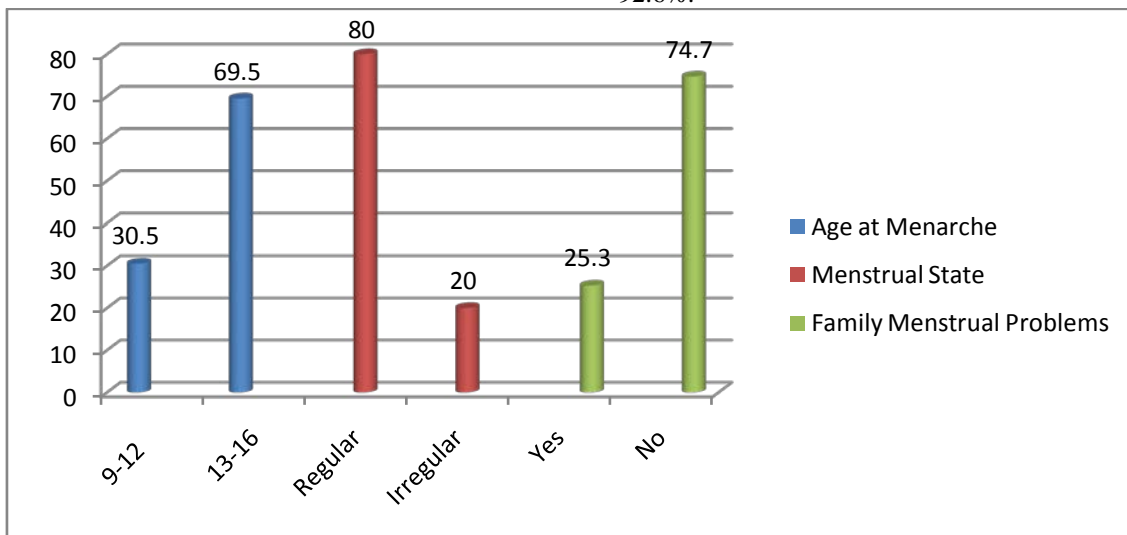

Figure (1) Frequency Distribution of Students According to Menstrual History

Figure (1) Shows that 80% of Students had regular menstruation. More than two third of students (69.5%) had menarche between 13-16 years and about (74.7%) of them had no family menstrual problems.
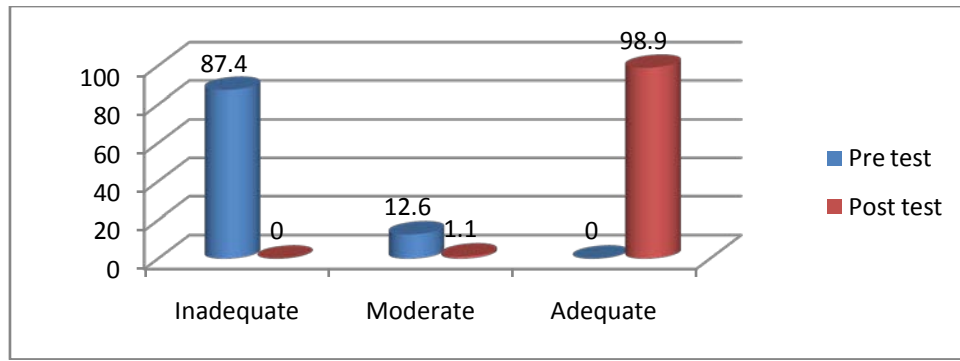

Figure (2): Knowledge Level of Students Regards polycystic Ovarian Syndrome before & after Educational Sessions.

Figure (2) shows that there was significant improvement in the knowledge level after educational sessions compared to its level before (p<0.000). Before educational sessions the majority of students (87.4%) have inadequate knowledge, only 12.6% of them have moderate knowledge while after sessions 1.1% and 98.0 % of them have moderate and adequate knowledge respectively.

Table (2): Pre-test knowledge scores of students regarding Polycystic Ovarian Syndrome

Variable	Maximum	*Range*	*Pre test*		
			Mean	*± SD*	*Mean %*
Anatomy &physiology of ovary	10	1-7	4.46	1.4	44.6
General knowledge regard PCOs	10	1-7	3.40	1.24	34.0
Risk factors	2	0-2	1.05	0.62	52.5
Signs& symptoms	4	0-3	1.49	0.75	37.25
Treatment	4	0-2	1.16	0.75	29.0
Complications	2	0-2	1.39	0.67	69.5
Prevention	4	0-3	1.35	0.67	33.75
Overall	36	6-25	14.0	3.383	38.89

Table (2) shows that in pre test, mean score of student's knowledge of anatomy &physiology of ovary was 4.46±1.4. Mean score of general knowledge of PCOs was 3.40± 1.24. As regards mean score of risk factors, treatment, and complications were 1.05±0.62, 1.16±0.75, and 1.39± 0.67 respectively. While mean score of signs & symptoms and prevention were 1.49±0.75, 1.35±0.67 respectively. The overall pretest mean score was 14±3.383 with mean percentage 38.89%.

Table (3): Post-test Knowledge Scores of Students Regarding Polycystic Ovarian Syndrome

Variable	Maximum	*Range*	*Post test*		
			Mean	*± SD*	*Mean %*
Anatomy &physiology of ovary	10	0.0-10.0	9.27	1.2	92.7
General knowledge regard PCOs	10	7.0-10.0	8.64	0.84	86.4
Risk factors	2	1-2	1.99	0.10	99.5
Signs& symptoms	4	3-4	3.8	0.40	95.0
Treatment	4	2-4	3.51	0.56	87.75
Complications	2	2-2	2.00	0.0	100.0
Prevention	4	3-4	3.65	0.48	91.25
Overall	36	23-36	32.87	2.079	91.31

Table (3) shows that in post test, mean score of student's knowledge of anatomy &physiology was 9.27±1.2. Mean score of general knowledge of PCOs and risk factors was 8.64 ±0.84 and 1.99±0.10 respectively. As regards mean score of signs & symptoms and PCOs prevention were 3.8±0.40, 3.65±0.48 respectively. While mean score of PCOs treatment &complications were 3.51± 0.56, 2.00±0.0 respectively. The overall post-test mean score was 32.86±2.079 and mean percentage 91.31.

Table (4): Improvement of Knowledge Scores Regards Polycystic Ovarian Syndrome Among Students Before & After Educational Sessions.

Knowledge	Maximum Score	Pre test		Post test		Enhancement in mean percentage
		Mean	*SD ±*	*Mean*	*SD*	
Anatomy &Physiology of ovary	10	4.16	1.4	9.27	1.2	51.0
General Knowledge Regard PCOs	10	3.40	1.24	8.64	0.84	52.4
Risk Factors	2	1.05	0.62	1.99	0.10	47.0
Signs& Symptoms	4	1.49	0.75	3.80	0.40	58.75
Treatment	4	1.16	0.75	3.51	0.56	58.75
Complications	2	1.39	0.67	2.0	0.0	30.5
Prevention	4	1.35	0.67	3.65	0.48	57.5
Overall	36	**14.0±3.383**		**32.87±2.079**		52.42

Table (4) reveals the enhancement of knowledge score on polycystic ovaries among students. It is found that the mean score after educational sessions was higher than before in all variables. Also the overall score posttest mean value (32.87) was higher than the overall score pretest (14.0).

Table (5): Knowledge Scores Before and After Educational Sessions

Knowledge Score	Before	After	Paired t- test	P-value
Anatomy &Physiology of ovary	4.16±1.4	9.27±1.2	32.177	0.000
General Knowledge Regard PCOs	3.40±1.24	8.64±0.84	36.778	0.000
Risk Factors	1.05±0.62	1.99±0.10	14.434	0.000
Signs& Symptoms	1.49±0.75	3.80±0.40	29.604	0.000
Treatment	1.16±0.75	3.51±0.56	25.587	0.000
Complications	1.39±0.67	2.00±0.00	8.841	0.000
Prevention	1.35±0.62	3.65±0.48	34.381	0.000
Overall	14±3.383	32.87±2.079	51.735	0.000

Table (5) shows that the mean scores of different variables were significantly higher after educational sessions compared to their values before educational sessions (p= 0.000).

Table (6): Relationship between General Characteristics of Students and Pretest Knowledge Score.

ITEMS	Pretest Knowledge Score Mean± SD	Significant test
Age 16 17	13.57±3.46 15.04± 3.01	t= 2.072 p = 0.043
Mother Education Basic Secondary University	13.74±3.49 14.10±3.47 14.43 ±2.98	F= 0.237 P= 0.789
Mother Work House wife Governmental Private	13.79 ±3.33 14.26±3.64 15.60±2.51	F= 0.791 P = 0.457
Father Education Basic Secondary University	13.52±3.59 14.66±3.17 13.74±3.38	F= 1.08 P = 0.344
Father Work Not working Governmental Private	13.29 ± 3.09 14.15 ±3.66 13.42 ±3.07	F= 0.217 P = 0.805
Family Type Nuclear Joint	14.06 ±3.29 13.00 ±5.15	t= 0.677 p = 0.501
Monthly Income Not Enough Enough	13.99 ±3.41 14.05 ±3.37	t= 0.073 p= 0.942

Table (6) reveals that there was significant relation between the ages in years of students with pre-test knowledge scores. While there was no statistically significant relations was found with mother education and work, father education and work, family type and monthly income.

DISCUSSION

Polycystic ovarian syndrome is a condition which can lead to huge health problems and affects the reproductive health if not treated well. Increase awareness of girls on PCOS helps them to gain knowledge and helps to early detect and prevent the PCOS.

The aim of present study was to evaluate the effect of educational sessions about polycystic ovarian syndrome for late adolescent girls self-protective measures.

The present study results revealed that there were improvement of all variables of knowledge and there was highly statistical significant difference between pre and post educational sessions. So, the research hypothesis is accepted. So it indicates that educational sessions were effective.

Regarding to the pretest knowledge of students about polycystic ovarian syndrome, the study revealed that the majority of students have inadequate knowledge and around one tenth of them have moderate knowledge**.** This lack of knowledge regarding PCOS may be due to that students did not receive the needed information or need for health education sessions.

The study findings were in agreement with **(10)** who assess the effectiveness of structured teaching program regarding polycystic ovarian syndrome among adolescents in selected pre-university colleges of Bangalore and reported that before program more than two third of respondents had poor knowledge scores and less than one third of them had moderate knowledge scores while none of them had adequate knowledge.

Also, the current study results were supported by**(11)** who study the effectiveness of structured teaching program regarding knowledge on polycystic ovaries among the students and showed that before program the majority of

students had inadequate knowledge, whereas (9.17%) of them had moderate knowledge.

Regards to the post-test knowledge score of students about polycystic ovarian syndrome, the present study findings showed that majority of students have adequate knowledge and there was an enhancement observed after educational sessions. This could be due to clarity and consistency of the educational sessions and proper media used, also this indicated that students gained knowledge regarding polycystic ovarian syndrome after implementing educational sessions. So, the research hypothesis is accepted.

In additional to ,the present study findings were in the same line with (10) who found that after program about 66.7% of respondents had adequate knowledge, 33.3% had moderate knowledge and none of them had poor knowledge.

In relation to the effectiveness of educational sessions the present study results showed that mean score after educational sessions was higher than before in all variables, also the obtained posttest mean value was higher than pretest. The overall enhancement in mean percentage score was 52.42%.It indicates that educational session was effective. Theses study results were supported by (10) who reported that teaching program on polycystic ovarian syndrome was effective and statistically highly significant at 0.001 level.

Moreover, these results also was congruent with (12) in their study done to determine the effectiveness of reproductive health education program among rural adolescent girls whom stated that there was increase in overall knowledge and their educational program achieved the desirable outcome regarding knowledge of adolescent girls.

As well as (13) who study the effect of structured teaching program on PCOS awareness among adolescents girls in a selected rural area and reported that improvement in the knowledge level on PCOS among adolescent girls after implementing their teaching program. As same as (14) in their study done to evaluate the effect of structured teaching program in improving knowledge and attitude of school going adolescents on reproductive health and reported that using teaching program was an effective method to improve knowledge and attitude of the adolescent's girls regarding reproductive health.

Moreover, study findings were in agreement with (5) who found that there was statistically significantly difference in favor for posttest in their study about the effectiveness of awareness program regard PCOS and founded that the awareness program was effective in improving the knowledge on PCOS.

In additional to (15) who study the effectiveness of educating program for upgrading nurses' knowledge regarding polycystic ovarian syndrome and showed that the highest improvement of knowledge regarding all the program content and mean posttest score was higher than the mean pretest knowledge score. Also the present study results were supported by those of a study conducted by (16) who evaluate the effectiveness of self-instructional module

on knowledge regarding polycystic ovarian syndrome among adolescent and reported that adolescent girls have remarkable increase in knowledge due to the effectiveness of self-instruction module.

The present study findings showed that there was significant relation between the ages in years of students with pre-test knowledge scores. While there was no statistically significant relations was found with others general characteristics as mother education, father education, family type and monthly income. These findings were congruent with (10) who showed that there was relation between the age in years with pre-test knowledge scores, while there was no relation between the mother's occupation, type of family. The study finding was incongruent with (11) who reported that there were no relation between pretest knowledge score and age of students. While there were significant relation with type of family and income.

CONCLUSION

The findings of the study revealed that before utilization of educational sessions, the majority of students (87.4%) had inadequate knowledge regard polycystic ovarian syndrome. After the educational sessions there was enhancement of knowledge score on polycystic ovarian syndrome. It found that the mean score after educational sessions was higher than before in all variables. Also the overall score posttest mean value (32.87) was higher than the overall score pretest (14.0). There was a statistically significant difference between pretest students' knowledge score in relation to student's age, while there were no statistically significant differences between pretest students' knowledge score in relation mother education and work, father education and work, family type and monthly income. Thus, utilization of educational sessions was found to be effective to increase the knowledge level of late adolescent girls about polycystic ovarian syndrome self-protective measures.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations can be conclude that:
a. Application of educational session for late adolescent girls in different setting should be conducted in order to increase knowledge regard PCOS as self-protective measures.
b. Nursing school curriculum should be updated to include information about PCOS.
c. Further researches are necessary to replicate the beneficial findings of educational sessions regarding polycystic ovarian syndrome in a large population.

ACKNOWLEDGEMENT

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