Journal of Young Pharmacists, 2025; 17(3):732-739.
https://www.jyoungpharm.org

Original Article

Impact of Educational Intervention on Awareness of Polycystic Ovary Syndrome among Female Students: A Quasi Experimental Study

Azfar Athar Ishaqui[1], Sara Naqvi[2], Hania Kauser[2], Javeria Farooq[2,*], Dua Bufail[3], Narendar Kumar[4], Khalid Mubarak Orayj[1], Muhammad Imran[2]

[1]Department of Clinical Pharmacy, College of Pharmacy, King Khalid University, Abha, SAUDI ARABIA.
[2]Department of Pharmacy, Iqra University-North Campus, Karachi, PAKISTAN.
[3]Department of Clinical Pharmacology, King Abdulaziz University, Jeddah, SAUDI ARABIA.
[4]Department of Pharmacy Practice, Faculty of Pharmacy, Sindh University, Jamshoro, PAKISTAN.

ABSTRACT

Background: Polycystic Ovary Syndrome (PCOS) is one of the most common problems among women during their childbearing age. Polycystic ovary syndrome prevalence and complications are snowballing due to failure of early diagnosis, diverse nature of symptoms, limited knowledge, negative behavior and low acceptance of disease. The study aimed to evaluate the impact of an educational intervention on the knowledge and attitude of young female students regarding polycystic ovary syndrome. **Materials and Methods:** A quasi-experimental study was conducted with total of 150 female students. Educational intervention was introduced through an educational seminar. Informed consents were taken by the students before the start of the study. The knowledge and attitude of participants was assessed through a pre and post questionnaire and the impact of the intervention was calculated through Graph pad prism. **Results:** The pre intervention data found that over all students have a limited knowledge regarding polycystic ovary syndrome. A negative and reluctant attitude towards polycystic ovary syndrome was observed. Post intervention data showed a statistically significant and positive impact on knowledge and attitude of students towards polycystic ovary syndrome and a significant improvement was observed. **Conclusion:** Educational interventions are useful to increase the awareness regarding polycystic ovary syndrome in young females.

Keywords: Awareness, Educational Intervention, Knowledge, Polycystic Ovarian Syndrome.

Correspondence:
Dr. Javeria Farooq
Department of Pharmacy, Iqra University-North Campus, Karachi, PAKISTAN.
Email: javeria.farooq@iqra.edu.pk

Received: 07-03-2025;
Revised: 26-05-2025;
Accepted: 18-07-2025.

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a multifaceted disease which affects 6-20% of women in the reproductive years worldwide. Though, the rate of PCOS is rising continuously in South Asian particularly in Pakistani women as compared to western women (Akram & Roohi, 2015). PCOS can be a major reason of several other diseases in women including infertility, increase chances of miscarriages, vitamin D deficiency and complicated pregnancy (Azhar *et al.*, 2020). PCOS results in various complications including obesity, diabetes, anxiety and depression. The treatment usually starts with life style changes including healthy diet and regular exercise to minimize the weight gain and to maintain a healthy life routine (AlSinan & Shaman, 2017). However, the main limitation towards PCOS treatment is undiagnosed PCOS or delayed diagnosis. It is usually diagnosed when women start facing issues of menstrual irregularity, difficulty in conceiving, dyslipidemia or insulin resistance. The other reasons are the diverse nature of symptoms form hirsutism, irregular menses to infertility and the absence of precise diagnostic criteria which makes PCOS difficult to diagnose (Sheehan, 2004).

Education intervention plays a significant role in the management of Polycystic Ovary Syndrome (PCOS) and has been shown to improve the knowledge, attitudes, and behaviors of women and adolescents with the condition (Hajivandi *et al.*, 2021). The educational interventional programs have been reported to significantly improve the women's knowledge and attitudes towards lifestyle modifications for PCOS management. This suggests that education is an important aspect of managing PCOS and can help improve women's understanding and attitudes towards PCOS. The structured education program significantly improved the participants' knowledge and understanding of PCOS, as well as their self-efficacy and self-care behaviors related

OPEN ACCESS

Manuscript TECHNOMEDIA

DOI: 10.5530/jyp.20250025

Publishing Partner : Manuscript Technomedia. [www.mstechnomedia.com]

to the condition. The results suggest that structured education programs may be an effective approach for improving health outcomes in women with PCOS (Mani *et al.*, 2018).

Literature studies have revealed that there is an inadequate and insufficient knowledge of PCOS including its symptoms and management among young students, women and society. They are not aware of various factors including life style choices and dietary habits which can worsen PCOS. Most of the women are unaware that delay in the diagnosis of PCOS may lead to metabolic and reproductive abnormalities associated to PCOS (Alshdaifat *et al.*, 2021), (Ahmadiehm *et al.*, 2022). Furthermore, other than absence of disease awareness and lack of management, women living in rural area or with lower educational background are reluctant to visit doctors. They even hesitate to talk regarding PCOS with their family and friends. This reluctance and hesitancy lead to various complications (Sidra *et al.*, 2019). Rizvi *et al.*, (2014) found that there is a lack of awareness and understanding about PCOS among the general population in Pakistan. It was observed that patients have negative attitude towards PCOS. They showed unacceptance of the disease consider it to be a stigmatizing condition. The findings highlighted the need for improving public education and awareness about PCOS in Pakistan. The study aimed to evaluate the impact of an educational intervention on the knowledge and attitude in among university students.

MATERIALS AND METHODS

An educational-intervention based quasi-experimental study was conducted. The study was approved by the Institutional Human Ethics Committee (IU/FHS/ERC/023-031). Written consent was taken from the study participants. The female students with age 18 years or above and less than 35 years old were enrolled in the study. All the male students were not allowed to participate in the study. Only female students registered in the various disciplines of Faculty of Health Sciences degree programs, i.e. Pharmacy, Physical therapy, Nursing and Health Nutrition were enrolled in the study. The non-probability purposive sampling technique was utilized for collecting data from participants fulfilling the eligibility criteria. The sample size was calculated using 90% confidence level with a response distribution of 50% and margin of error of 5%. The minimum sample required for the study was calculated as 149 participants (Raosoft, 2021).

The educational intervention included a lecture organized with title "PCOS: an obstacle to fertility". It was given by a senior gynecologist and fertility expert. The session was conducted to raise awareness on PCOS. The speaker efficiently covers the topic, and gave detailed information on symptoms, treatment, diagnosis and risk factors to increase the understanding and awareness of PCOS. All the queries of the students were answered by the speaker at the end of the session. Pre seminar and post seminar evaluation forms were given to the students to evaluate impact of education awareness on improvement in knowledge and attitude towards PCOS.

The first section of study was about the demographic characteristics of participants such as age, occupation, marital status, degree enrollment, and awareness of term PCOS. In the second section of study, students were inquired about awareness of most common symptoms related to PCOS i.e., irregular menstrual cycle, facial acne, and hirsutism, reduce fertility, weight gain, pelvic pain, diabetes, hypertension & psychological disturbance. The information about same symptoms was inquired again after post education awareness. The third section of comprises of 15 items of knowledge related statements. The questions were based on characteristic, treatment, diagnosis and risk factors of PCOS. The part of characteristics-based knowledge statements includes whether PCOS is characterized by multiple cysts in the ovaries, increase in hair growth at specific sites, increase in acne and abnormal menstruation. The treatment section comprises of items based on PCOS is a chronic disease and has no treatment, can be treated with drug and can be treated by decreasing body weight. The last part of this section was based on risk factors and it includes whether PCOS patients have an increased risk of cardiac diseases and breast cancer, increased blood sugar levels, increased insulin resistance, increased risk of endometrial cancer, increased risk of infertility and increased risk of depression and anxiety. The fourth section was based on 8 attitude related questions towards PCOS. The section included that whether after diagnosis of PCOS; individual will consult doctor or go toward treatment with natural products, frequency of treatment and impact of fertility. The psychological impact of PCOS was questioned in this section including possibilities of depression, negatively target self-confidence, declining effect on work/study and need emotional support.

The items of the third and fourth sections were formulated on Likert-scale ranging from 1-to-5 score, where a score of 5 meant strongly agree while a score of 1 meant strongly disagree. These validated 23 items (15 items related to knowledge & 8 items related to awareness) of research questionnaire were adopted from educational intervention studies conducted by (Aripin *et al.*, 2022).

Data Analysis

Statistical data entry and analysis of results was performed using Microsoft Excel and Graph pad prism analyzed data using descriptive statistics, with mean and percentage. Chi square was also performed on symptoms, knowledge related statement and attitude related questions. McNemar's test was used to determine improvements in knowledge and attitude between pre- and post-education intervention measurements.

RESULTS

A total of 150 female adult participants were enrolled in the study. The mean age of participants was 26.73±3.64 years. Around two-third of participants i.e., 97 (64.7%) aged in between 18-23 years old, and only 26 (17.3%) participants were aged above 30 years. Majority of participants were single female participants i.e., 65 (43.3%). A total of 35 (13.4%) participants were currently doing job as full-time or part-time. Majority of participants were enrolled in 108 (72%) in bachelor's degree. Around three-fourth participants (72.7%) stated that they have aware of PCOS as a disease, while, 36 (24%) participants declared history of PCOS. The demographic characteristics are summarized in Table 1.

For awareness of PCOS among participants, the overall mean symptom awareness score was improved statistically significant after educational intervention (6.10±2.7 vs. 8.19±3.7; $p < 0.001$). For symptoms of hirsutism, reduce fertility, weight gain, abortion, early puberty, diabetes, and psychological disturbance, the post-intervention awareness was improved statistically significant. The pre- and post-intervention statistics of study participants are summarized in Table 2. The overall mean knowledge score of participants was statistically significant ($p < 0.001$) from 31.93±8.48 at pre-intervention phase to a mean score 53.96±5.53 of for enrolled participants. Except for the knowledge statements about increased risk of developing cardiac diseases and breast cancer, the mean knowledge score of participants was statistically significant improved for participants. The pre- and post-intervention mean scores of knowledge statements are summarized in Table 3. The overall mean attitude score of enrolled participant's pre-intervention was found to be 17.79±5.14, and is statistically significantly ($p < 0.0001$) improved post-intervention to mean score of 27.34±2.80 with a mean difference of 9.55±6.21. For all the attitude related statements, the mean score was statistically significant improved post-intervention. The pre- and post- intervention mean scores for attitude related statements are summarized in Table 4.

The impact of educational intervention on knowledge and attitude of enrolled participants is summarized in Tables 5 and 6. Knowledge related to PCOS such as characterized by multiple cysts, hirsutism, diagnosis from laboratory tests, and insulin resistance were correctly chosen by 100% participants post-intervention. In terms of improvement post-intervention, only knowledge-related statements about a higher risk of breast cancer and potential pharmacological treatments were shown to be statistically non-significant ($p > 0.05$). Over 50% of participants correctly answered each statement on the impact of educational intervention on attitudes.

DISCUSSION

It is evident that knowledge and awareness of PCOS is significant because early diagnosis and intervention reduce the risk of long-term health problems and improve quality of life. Despite its prevalence, many women with PCOS may not be aware of their condition, as its symptoms can be mistaken for other health problems or dismissed as normal changes during reproductive years. The study conducted by Gaferi *et al.*, (2018) found that two third of their study participants were unaware of PCOS and general reproductive health and concluded that education at home and educational institutes can act as an effective tool to increase awareness. Similarly, a study conducted in India concluded that most of the study participants were ignorant of PCOS regardless of having PCOS symptoms (Kirthika *et al.*, 2019). Therefore, it is crucial for healthcare providers and the general public to be knowledgeable about the signs and symptoms of PCOS, as well as its causes and risk factors. With the right information and support, individuals with PCOS can better manage their condition and improve their overall health and well-being (Pramodh, 2020).

Table 1: Demographic characteristics of study participants (N= 150).

Age	
18-23 years	97 (64.7%)
24-30 years	27 (18%)
Above 30 years	26 (17.3%)
Mean±SD	26.73±3.64
Marital Status	
Single	65 (43.3%)
Married	54 (36%)
Widowed	10 (6.7%)
Divorced	21 (14%)
Occupation	
Student only	95 (63.3%)
House wife	20 (13.3%)
Full-time job	16 (10.7%)
Part-time job	19 (12.7%)
Education	
Currently enrolled in Bachelor's degree	108 (72%)
Currently enrolled in Master's degree	34 (22.7%)
Currently enrolled in PhD' degree	8 (5.3%)
Have ever heard about PCOS	
No	41 (27.3%)
Yes	109 (72.7%)
History of PCOS	
No	114 (76%)
Yes	36 (24%)

Table 2: Pre- and post-education intervention awareness about PCOS related symptoms.

Symptoms	Pre-intervention	Post-intervention	*p*-value
Irregular menstrual cycle	122 (81.3%)	127 (84.7%)	0.542
Facial acne	110 (73.3%)	117 (78%)	0.442
Hirsutism	79 (52.7%)	105 (70%)	0.004
Reduce fertility	86 (57.3%)	120 (80%)	0.0001
Weight gain	73 (48.7%)	118 (78.7%)	0.0001
Pelvic pain	100 (66.7%)	115 (76.7%)	0.073
Abortion	61 (40.7%)	84 (56%)	0.001
Early puberty	34 (22.7%)	108 (72%)	0.0001
Diabetes	34 (22.7%)	96 (64%)	0.001
Hypertension	115 (76.7%)	120 (80%)	0.590
Psychological disturbance	96 (64%)	124 (82.7%)	0.0001
Overall mean score			
Mean±SD	6.10±2.72	8.19±3.65	0.0001

Table 3: Pre- and post-education intervention knowledge comparison of participants.

Sl. No	Knowledge related Statements	Mean±SD (Pre-intervention)	Mean±SD (Post-intervention)	Mean difference	*P*-value
1	Polycystic ovary syndrome is characterized by multiple cysts in the ovaries that can be diagnosed by ultrasound.	1.52±0.62	4.61±0.49	3.09±0.84	0.0001
2	Polycystic ovary syndrome is characterized by increase in hair growth in places like on the upper lip, around nipples, and belly.	1.65±0.86	4.17±0.37	2.52±0.97	0.0001
3	Polycystic ovary syndrome is characterized by an increase in acne in a clear and a higher than expected manner.	1.81±1.02	4.19±0.86	2.38±1.49	0.0001
4	Polycystic ovary syndrome is characterized by abnormal menstruation.	1.58±0.89	4.40±0.49	2.85±1.25	0.0001
5	Polycystic ovary syndrome can be diagnosed by laboratory tests.	2.31±1.38	4.40±0.49	2.09±1.42	0.0001
6	Polycystic ovary syndrome is chronic and has no treatment.	2.82±1.62	3.63±1.07	0.81±1.01	0.0001
7	Polycystic ovary syndrome patients have an increased risk of cardiac diseases.	2.66±1.20	2.95±0.72	0.29±1.41	0.14
8	Polycystic ovary syndrome patients have an increased risk of breast cancer.	2.63±0.84	2.73±1.18	0.10±0.11	0.371
9	Polycystic ovary syndrome patients have increased blood sugar levels.	1.95±0.95	2.92±0.74	0.97±0.09	0.0001
10	Polycystic ovary syndrome patients have increased insulin resistance.	2.00±1.06	2.69±0.47	0.69±1.09	0.0001
11	Polycystic ovary syndrome patients have an increased risk of endometrial cancer.	2.21±1.08	3.45±0.49	1.25±1.21	0.0001
12	Polycystic ovary syndrome patients have an increased risk of infertility.	1.69±1.03	3.69±0.46	1.99±1.07	0.0001
13	Polycystic ovary syndrome patients have an increased risk of depression and anxiety.	1.58±0.87	4.19±0.86	2.63±1.31	0.0001

14	Polycystic ovary syndrome can be treated with drugs.	2.21±1.13	3.88±0.67	0.74±1.44	0.0001
15	Polycystic ovary syndrome can be treated by decreasing body weight.	2.41±1.16	3.88±0.65	1.47±1.40	0.0001
	Overall	31.93±8.48	53.96±5.53	22.03±10.71	0.0001

Table 4: **Pre- and post-education intervention attitude comparison of participants.**

Sl.No	Attitude related Statements	Mean±SD (Pre-intervention)	Mean±SD (Post-intervention)	Mean difference	*p*-value
1	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would consult a doctor.	1.45±0.69	4.77±0.42	3.32±0.81	0.0001
2	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would use hormone regulating herbs.	2.33±0.92	2.95±0.92	0.63±0.11	0.0001
3	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would expect an abnormality in the ability to conceive a child.	1.91±0.89	3.40±0.49	1.49±1.02	0.0001
4	In case I was diagnosed with Polycystic ovary syndrome that would impact my self-confidence negatively.	2.34±1.06	2.65±0.75	0.31±1.33	0.005
5	Polycystic ovary syndrome will need lifetime treatment.	2.85±1.03	3.33±1.05	0.47±1.41	0.0001
6	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would feel depressed.	2.14±1.05	4.08±0.74	1.94±1.37	0.0001
7	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would need emotional support.	2.02±1.06	3.91±0.85	1.89±1.54	0.0001
8	In case I or someone I know was diagnosed with Polycystic ovary syndrome, it would affect my work/study negatively.	2.28±1.07	2.73±0.87	0.45±1.34	0.0001
	Overall	17.79±5.14	27.34±2.80	9.55±6.21	0.00001

In current study, the pre intervention and post intervention data revealed that the PCOS educational seminar enhanced the overall knowledge of respondent regarding PCOS symptoms. The study showed a positive and significant increase in knowledge regarding PCOs symptoms particularly fertility issues, weight gain, early puberty and psychological disorders. The study questionnaire included various statements about regarding PCOS knowledge including diagnosis, symptoms, management and risk of various complication and attitude toward PCOS. The pre intervention data showed an insufficient and poor knowledge of PCOS among young women while the post intervention is evident that respondents' knowledge was significantly increased. The study results proved the educational intervention can play an important role in PCOS early diagnosis. The study results coincide with similar studies conducted in Pakistan and other countries evaluating the impact of educational interventions on knowledge. Qadir *et al.*, (2021) also found limited awareness and understanding of PCOS among both women with the condition and healthcare providers. The study highlighted the need for increased education and training for both women with PCOS and healthcare providers to improve awareness, understanding, and the quality of care for individuals with PCOS in Pakistan. Related results were concluded by similar research studies conducted in various countries (Jaber *et al.*, 2022; Goh *et al.*, 2022). The study also validates the results of research studies conducted in public universities (Haq *et al.*, 2017) and tertiary hospitals of Pakistan (Rizvi *et al.*, 2014) with PCOS patient that there is a negative and reluctant attitude towards the understanding of the PCOS. However, our result also showed that with an effective educational intervention the attitude can be transformed into a positive and more acceptable attitude. The study calculated the percentage improvement towards the knowledge and attitude

Table 5: Impact of education intervention on percent enhancement of knowledge about PCOS among study participants.

Sl.No	Knowledge related Statements	Correct answer (Pre)	Correct answer (Post)	*p*-value
1	Polycystic ovary syndrome is characterized by multiple cysts in the ovaries that can be diagnosed by ultrasound.	2 (1.3%)	150 (100%)	0.0001
2	Polycystic ovary syndrome is characterized by increase in hair growth in places like on the upper lip, around nipples, and belly.	8 (5.3%)	150 (100%)	0.0001
3	Polycystic ovary syndrome is characterized by an increase in acne in a clear and a higher than expected manner.	16 (10.7%)	107 (71.3%)	0.0001
4	Polycystic ovary syndrome is characterized by abnormal menstruation.	10 (6.7%)	107 (71.3%)	0.0001
5	Polycystic ovary syndrome can be diagnosed by laboratory tests.	22 (17.7%)	150 (100%)	0.0001
6	Polycystic ovary syndrome is chronic and has no treatment.	47 (31.3%)	106 (70.7%)	0.0001
7	Polycystic ovary syndrome patients have an increased risk of cardiac diseases.	35 (23.3%)	51 (34%)	0.034
8	Polycystic ovary syndrome patients have an increased risk of breast cancer.	35 (23.3%)	48 (32%)	0.093
9	Polycystic ovary syndrome patients have increased blood sugar levels.	13 (8.7%)	35 (23.3%)	0.0001
10	Polycystic ovary syndrome patients have increased insulin resistance.	18 (12%)	150 (100%)	0.0001
11	Polycystic ovary syndrome patients have an increased risk of endometrial cancer.	19 (12.7%)	68 (45.3%)	0.0001
12	Polycystic ovary syndrome patients have an increased risk of infertility.	15 (10%)	103 (68.7%)	0.0001
13	Polycystic ovary syndrome patients have an increased risk of depression and anxiety.	8 (5.3%)	107 (71.3%)	0.0001
14	Polycystic ovary syndrome can be treated with drugs.	27 (18%)	35 (23.3%)	0.350
15	Polycystic ovary syndrome can be treated by decreasing body weight.	28 (18.7%)	107 (71.3%)	0.0001

Table 6: Impact of education intervention on percent enhancement of attitude about PCOS among study participants.

	Attitude related Statements	Correct answer (Pre)	Correct answer (Post)	*p*-value
1	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would consult a doctor.	2 (1.3%)	150 (100%)	0.0001
2	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would use hormone regulating herbs.	18 (12%)	90 (60%)	0.0001
3	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would expect an abnormality in the ability to conceive a child.	11 (7.3%)	90 (60%)	0.0001
4	In case I was diagnosed with Polycystic ovary syndrome that would impact my self-confidence negatively.	125 (83.3%)	130 (86.7%)	0.532
5	Polycystic ovary syndrome will need lifetime treatment.	73 (48.7%)	127 (84%)	0.0001
6	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would feel depressed.	35 (23.3%)	126 (84%)	0.0001

7	In case I or someone I know was diagnosed with Polycystic ovary syndrome, I would need emotional support.	17 (11.3%)	89 (59.3%)	0.0001
8	In case I or someone I know was diagnosed with Polycystic ovary syndrome, it would affect my work/study negatively.	108 (72%)	127 (84%)	0.010

in the young female after an educational intervention of PCOS. A highly statistically significant and positive change resulted in enhancement of the knowledge and attitude towards PCOS. The result concluded that educational interventions significantly increase the knowledge and understanding of symptoms of PCOS which can act as key player in early diagnosis of PCOS that can help in better management of PCOS. These results are also validated by other studies which proved that educational interventions are helpful. Mohamed *et al*., (2016) emphasized on need of increasing the knowledge of PCOS in young females and established that educational interventions might be an effective tool in the management of PCOS. While Hajivandi *et al*., (2021) and Dashti *et al*., (2022) studied educational intervention including nutritional behaving and eating pattern for young PCOS patients. They suggested that these programs can improve the nutritional health of PCOS patients. Moreover, an awareness and life style modification study established that inclusion of education programs for young girls is an effective way for early identification and prevention of PCOS (Selvaraj *et al*., 2020).

CONCLUSION

The study concluded that educational interventions play a major role in improving the understanding of PCOS symptoms as well as results in improved attitude and more acceptability towards the PCOS by patients and the society. These interventions can help in early diagnosis, disease acceptance by the patients and more emotional support by society. Further research should be conducted to evaluate the impact of PCOS in the Pakistani population and to develop effective strategies for managing the condition and improving the health and well-being of individuals affected by PCOS in Pakistan.

ACKNOWLEDGEMENT

We are thankful to all the respondents for giving time for the study.

ABBREVIATIONS

PCOS: Polycystic ovary syndrome.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

Ahmadieh, H., Aboudib, K., Al Khalaf, I. A., Dassouki, W., & Charbaji, L. (2022). Lebanese women's awareness of polycystic ovarian syndrome and its complications: A cross-sectional study. Journal of Diabetes and Endocrine Practice, 5(3), 112-118. https://doi.org/10.1055/s-0042-1760340

Akram, M., & Roohi, N. (2015). Endocrine correlates of polycystic ovary syndrome in Pakistani women. Journal of the College of Physicians and Surgeons-Pakistan, 25(1), 22-26.

Alshdaifat, E., Sindiani, A., Amarin, Z., Absy, N., AlOsta, N., Abuhayyeh, H. A., & Alwani, M. (2021). Awareness of polycystic ovary syndrome: A university students' perspective. Annals of Medicine and Surgery, 72, Article 103123. https://doi.org/10.1016/j.amsu.2021.103123

AlSinan, A., & Shaman, A. A. (2017). A study to measure the health awareness of polycystic ovarian syndrome in Saudi Arabia. Global Journal of Health Science, 9(8), 130. https://doi.org/10.5539/gjhs.v9n8p130

Azhar, A., Abid, F., & Rehman, R. (2020). Polycystic ovary syndrome, subfertility and vitamin D deficiency. Journal of the College of Physicians and Surgeons-Pakistan, 30(5), 545-546. https://doi.org/10.29271/jcpsp.2020.05.545

Dashti, S., Abdul Hamid, H., Mohamad Saini, S., Tusimin, M., Ismail, M., Jafarzadeh Esfehani, A., Ching, S. M., Lee, K. W., Ismail, N., Wong, J. L., & Abdul Latiff, L. (2022). A randomised controlled trial on the effects of a structural education module among women with polycystic ovarian syndrome on nutrition and physical activity changes. BMC Women's Health, 22(1), 277. https://doi.org/10.1186/s12905-022-01861-4

Gaferi, S. M., Al-Harbi, M. F., Yakout, S. M., & Soliman, A. T. (2018). Knowledge, attitude and practice related to reproductive health among female adolescents. Journal of Nursing Education and Practice, 8(8), 53-65. https://doi.org/10.5430/jnep.v8n8p53

Goh, J. E., Farrukh, M. J., Keshavarzi, F., Yap, C. S., Saleem, Z., Salman, M., Ramatillah, D. L., Goh, K. W., & Ming, L. C. (2022). Assessment of prevalence, knowledge of polycystic ovary syndrome and health-related practices among women in klang valley: A cross-sectional survey. Frontiers in Endocrinology (Lausanne), 13, Article 985588. https://doi.org/10.3389/fendo.2022.985588

Hajivandi, L., Noroozi, M., Mostafavi, F., & Ekramzadeh, M. (2021). Assessing the impact of an educational intervention program based on the theory of planned behavior on the nutritional behaviors of adolescents and young adults with PCOS in Iran: A field trial study. BMC Pediatrics, 21(1), 316. https://doi.org/10.1186/s12887-021-02784-z

Haq, N, Khan, u., Z., Riaz, S., Nasim, A., Shahwani, R., & Tahir, M. (2017). Prevalence and knowledge of polycystic ovary syndrome (PCOS) among female science students of different Public Universities of Quetta, Pakistan. Imperial Journal of Interdisciplinary Research, 3

Jaber, R. M., Aripin, A., Allias, N., Omar, S., Kamal, N. R., & Dwekat, O. (2022). Knowledge and attitudes towards polycystic ovary syndrome. African Journal of Reproductive Health, 26(1), 92-102. https://doi.org/10.29063/ajrh2022/v26i1.10

Kirthika, S. V., Daggumati, H., Padmanabhan, K., Paul, J., Sudhakar, S., & Selvam, P. S. (2019). Effect of structured awareness programme on polycystic ovarian syndrome (PCOS) among adolescent girls. Research Journal of Pharmacy and Technology, 12(12), 6097-6100. https://doi.org/10.5958/0974-360X.2019.01059.X

Mani, H., Chudasama, Y., Hadjiconstantinou, M., Bodicoat, D. H., Edwardson, C., Levy, M. J., Gray, L. J., Barnett, J., Daly, H., Howlett, T. A., Khunti, K., & Davies, M. J. (2018). Structured education programme for women with polycystic ovary syndrome: A randomised controlled trial. Endocrine Connections, 7(1), 26-35. https://doi.org/10.1530/EC-17-0274

Mohamed, H. A. A. (2016). Effect of educational program on the level of knowledge regarding polycystic ovarian syndrome among adolescent girls. Journal of Nursing Education and Practice, 6(10), 80. https://doi.org/10.5430/jnep.v6n10p80

Pramodh, S. (2020). Exploration of lifestyle choices, reproductive health knowledge, and polycystic ovary syndrome (PCOS) awareness among Female Emirati university students. International Journal of Women's Health, 12, 927-938. https://doi.org/10.2147/IJWH.S272867

Qadir, M. A., Fatima, K., Rani, P., Gauhar, F., & Sheikh, A. (2021). AACE2021-A-1052: Knowledge, attitude and practices about poly-cystic ovary syndrome (PCOS) in Pakistan. Endocrine Practice, 27(12) Suppl. 45. https://doi.org/10.1016/j.eprac.2021.11.077

Raosoft, & I. (2021). Raosoft I. Raosoft online sample size calculator. Raosoft, Incorporated, viewed.

Rizvi, M., Abbas, A., Tanwir, S., Sabah, A., Ali, Z. M., Sundrani, M. M., Mir, H. A. (2014). Perception and attitude of patients regarding polycystic ovarian syndrome (PCOS) in tertiary care hospitals of Pakistan-a survey based study. IJPT, 5, 147-152.

Selvaraj, V., Vanitha, J., M Dhanraj, F., Sekar, P., & Rajendra Babu, A. (2020). Implementation of an awareness program and lifestyle intervention on polycystic ovarian syndrome among adolescent schoolgirls in India. Acta Scientific Paediatrics, 4(5), 24-30. https://doi.org/10.31080/ASPE.2020.03.0245.

Sheehan, M. T. (2004). Polycystic ovarian syndrome: Diagnosis and management. Clinical Medicine and Research, 2(1), 13-27. https://doi.org/10.3121/cmr.2.1.13.

Sidra, S., Tariq, M. H., Farrukh, M. J., & Mohsin, M. (2019). Evaluation of clinical manifestations, health risks, and quality of life among women with polycystic ovary syndrome. PLOS One, 14(10), Article e0223329. https://doi.org/10.1371/journal.pone.0223329.

Cite this article: Ishaqui AA, Naqvi S, Kauser H, Farooq J, Bufail D, Kumar N, *et al*. Impact of Educational Intervention on Awareness of Polycystic Ovary Syndrome among Female Students: A Quasi Experimental Study. J Young Pharm. 2025;17(3):732-9.