Volume 4, Issue 3, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

SCREENING OF POLYCYSTIC OVARIAN SYNDROME AWARENESS AMONG FEMALE UNIVERSITY STUDENTS USING A STRUCTURED PROFORMA

Ibrahim Muneer[*1], Muhammad Arabi Yahya Soomra[2], Shahzeena Naeem[3], Tania Saeed[4], Noor Ul Huda Syed[5]

[*1,2,3,4,5]*Bachelor of Medical Imaging Sciences, University Institute of Radiological Sciences and Medical Imaging Technologies (UIRSMIT) Faculty of Allied Health Sciences (FAHS), The University of Lahore, Lahore, Pakistan*

[*1]jamibrahim478@gmail.com, [2]arabiyahya2003@gmail.com, [3]shahzeenanaeem20@gmail.com, [4]taniasaeed848@gmail.com, [5]syednoorulhuda33@gmail.com

[*1]0009-0002-3135-6889, [2]0009-0006-0775-7884, [3]0009-0009-9339-5702, [4]0009-0003-7669-9612 [5]0009-0001-0743-179X

DOI: https://doi.org/10.5281/zenodo.21849588

Keywords

Screening of Polycystic Ovarian Syndrome (PCOS), prevalence, proforma organization, risk factors for female university students, & reproductive health.

Article History

Received: 20 January 2026
Accepted: 05 March 2026
Published: 19 March 2026

Copyright @Author
Corresponding Author: *
Ibrahim Muneer

Abstract

Background: *One of the most prevalent endocrine conditions affecting women of reproductive age is polycystic ovary syndrome, which is linked to hormonal imbalance, irregular menstruation, obesity, infertility, and psychiatric issues. Even though it is quite common, many instances among young girls especially college students go undetected. The purpose of this study was to emphasize linked health related variables and to better understand the incidence and symptoms of PCOS among female university students.*

Objective: *To determine the awareness of polycystic ovarian syndrome (PCOS) screening on female university students using a structured proforma.*

Methodology: *This descriptive, cross-sectional research was undertaken over the course of seven months, in The University of Lahore. A total of 218 female university students participated in the study. Data were collected using a pre designed structured proforma containing questions related to menstrual history, lifestyle factors, family history, physical symptoms, and psychological effects associated with PCOS. The acquired data were examined statistically using both descriptive and inferential approaches, included Chisquare tests to evaluate relationships between factors and year of study.*

Result: *A significant number of the 218 individuals experienced symptoms usually associated with PCOS, included irregular menstrual cycles, intense menstrual discomfort, abrupt weight gain, hair thinning as well as hair loss, and excessive face or body hair growth. Many participants also reported that these symptoms affected their mental health and academic activities. Hair thinning or hair loss was reported by 64.2% of participants, while 38.1% experienced sudden weight gain since starting university. Additionally, several students reported a family history or suspicion of PCOS. However, most associations between symptoms and year of study were found to be statistically insignificant ($p > 0.05$), suggesting that PCOS related symptoms were distributed across all academic years.*

Volume 4, Issue 3, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Conclusion: *The study revealed that PCOS related symptoms were widespread amongst female university students or may adversely influence their physical wellness, emotional well being, as well as academic performance. Early screening, awareness programs, and timely medical consultation are essential for improving diagnosis and management of PCOS among young women.*

INTRODUCTION

Polycystic ovarian syndrome (PCOS), also known as hyperandrogenic anovulation (HA) or SteinLeventhal syndrome, is a common endocrine disorder affecting women of reproductive age. It is one of the causes of infertility and also hirsutism, acne, and obesity. According to the 2003 Rotterdam Criteria, diagnosis requires two of the following: oligo/anovulation, clinical or biochemical hyperandrogenism, and polycystic ovarian morphology on ultrasound. The latest guidelines define this morphology as having ≥20 follicles per ovary or an ovarian volume of ≥10 mL Symptoms such as hair loss, alopecia, acne, and infertility often lead to the diagnosis of this disorder since they greatly diminish the quality of life for the women (Thakre et al., 2020).

In recent global screening evaluations, a high prevalence of this endocrine condition was shown, with millions of reproductive age women worldwide affected by the syndrome. Global prevalence percentages indicate that between 4 and 10 percent of reproductive age women are expected to have PCOS, depending heavily on the specific diagnostic criteria applied during the clinical screening process. Even though PCOS may start at any time after menarche, most cases are seen in people between the ages of 20 to 30 (Alamoudi et al., 2023).

PCOS affects a significant percentage of women of reproductive age and is responsible for long term metabolic health challenges globally. In Pakistan, regional prevalence data highlights a rapidly growing frequency among university students, often exceeding global averages due to localized lifestyle factors and dietary shifts. Despite long held beliefs to the contrary, PCOS is really a chronic condition that affects women throughout their lives, with metabolic symptoms often compounding over time and sometimes appearing during pregnancy. According to international guidelines, the three primary indicators of PCOS are anovulation, ovarian morphology, and hyperandrogenism. Factors that affect folliculogenesis and increase the risk of related diseases including type II diabetes and endometrial cancer include hyperandrogenism, difficulty metabolizing insulin, continuous minimal inflammation, hormonal disorders, and cancer of the endometrium (Lee et al., 2023).

When it comes to PCOS, there are a lot of environmental elements that might play a role in its development, occurrence, and treatment. These include things like location, dietary and nutritional habits, socioeconomic status, and environmental toxins (García-Sáenz et al., 2023).

Although it is well established, a greater likelihood of heart disease and diabetic complications in women with this condition is still debatable. After ruling out other possible causes, the hallmarks of polycystic ovarian syndrome include hyperandrogenism, recurrent anovulation, and polycystic ovaries. Although research has not pinpointed a specific cause for polycystic ovary syndrome, it seems to have a significant hereditary component that may be influenced by both environmental variables during pregnancy and lifestyle choices. In order to determine a condition, two of those three criteria polycystic ovary appearance, erratic cycles, and clinically or physiological hyperandrogenism must be met; these form the foundation of the suggestion (Fujii et al., 2023).

One noteworthy feature of polycystic ovary syndrome (PCOS) is polycystic ovarian Morphology (PCOM), which is characterized by an increase in the recruitment of non ovulatory follicles, both prior to antral and antral. Because of advancements in technological imaging and observer variability, the diagnosis of polycystic ovarian morphology (PCOM) requires careful assessment rather than relying on outdated thresholds. Even more so, there is still no consensus on the ideal PCOM threshold, despite

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

the fact that several studies have shown a PCOM is quite prevalent in people of all ages. Based on the knowledge that is currently available, the newly released global PCOS guideline recommends at least 20 follicles per ovary or an ovarian volume of 10 mL or more. So far, clinical diagnostics prioritize ultrasound findings alongside symptom assessment (Rostami Dovom et al., 2023).

Hyperandrogenism and persistent ovulatory menstrual symptoms are the National Institutes of Health (NIH) criteria that should be used to identify polycystic ovary syndrome (PCOS) in teenagers, according to current Endocrine Society clinical guidelines. Despite the lack of defined criteria, measures based on developmental stage and gynecologic age seem to be sufficient for identifying abnormal menstruation. The definition of ultrasonographic polycystic ovarian morphology (PCOM) is challenging, although some have argued that it provides higher accuracy in the prognosis of teenage PCOS (Sayutti et al., 2022).

Surgery and biopsies are no longer necessary for a definitive prognosis of polycystic ovary syndrome (PCOS) because to advancements in pelvic ultrasonography that allow for trustworthy noninvasive ovarian imaging. Ultrasound imaging often shows an increase in stroma and several cystic forms evenly spaced throughout the ovarian periphery. Histological and ultrasonography analyses highlight stromal dominance over anything else. Higher levels of blood luteinizing hormone (LH) and testosterone are typical endocrine abnormalities in polycystic ovary syndrome (PCOS), and peripheral conversion of circulating androgens may lead to abnormalities in estrogen production. But it's no secret that there's a lot of variation in the endocrine and clinical data (Fruh et al., 2022).

Obesity and its associated complications, such as polycystic ovarian syndrome (PCOS), have become more common in the last 40 years due to the worldwide epidemic of being overweight. A significant and common obesity related comorbidity, polycystic ovarian syndrome (PCOS) affects women and adolescents who have a family history of the condition. Polycystic ovary syndrome (PCOS) often manifests in adolescence and affects 6-10% of reproductive age women (Mayrhofer et al., 2020).

Some PCOS symptoms, including hyperandrogenism, hirsutism, infertility, and pregnancy problems, are worse in obese people. Type 2 diabetes and cardiovascular disease are both exacerbated by obesity and insulin resistance. Obese women, regardless of whether they have polycystic ovary syndrome (PCOS), have a better chance of having a healthy baby if they lose weight before giving birth (Zaborowska et al., 2025).

When comparing Women suffering polycystic ovarian syndrome are obese to normal-weight women with PCOS, every metabolic and reproductive outcome except hirsutism was shown to be considerably worse. These results emphasize how important it is to manage and avoid obesity in PCOS treatment (Poorani et al., 2024).

Estimated prevalence of PCOS is significant among university aged students in Pakistan, where recent data indicates a rising trend linked to sedentary lifestyles and dietary shifts. Obese and non obese PCOS patients exhibit higher visceral adiposity compared to controls of the same age and BMI, exacerbating their symptoms. Improved ovulation in polycystic ovary syndrome is associated with weight reduction that is high enough to lower insulin sensitivity and restore balance (Taheri et al., 2022).

Polycystic Ovarian Syndrome (PCOS) is a common hormonal condition, yet awareness among female university students remains low. This study will assess their awareness and screen for PCOS using a structured proforma, with the research questions focusing on the level of awareness and the prevalence of PCOS in this group. The study aims to support early detection and promote timely management to prevent complications.

MATERIAL AND METHODS

This study was designed as a cross-sectional study conducted over a period of seven months among female students at The University of Lahore. A convenient sampling technique was employed, and all consenting female students aged between 18 and 30 years who were currently enrolled in the university were included. Participants with conditions such as hyperprolactinemia, Cushing

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

syndrome, pregnancy or lactation, history of ovarian cystectomy or oophorectomy, and those not enrolled in higher education institutions were excluded. Data were collected using a structured, researcher-developed proforma consisting of sections assessing knowledge of PCOS symptoms, understanding of risk factors, associated complications, and awareness of diagnosis and treatment. Ethical approval was obtained from the university's ethical committee, and written informed consent was secured from all participants. Confidentiality and anonymity were strictly maintained, participation was voluntary, and participants were informed of their right to withdraw at any stage without any impact on their standard of care.

The data collection procedure involved distributing paper-based questionnaires to eligible participants after obtaining their consent. The questionnaire captured demographic details, lifestyle factors such as diet and physical activity, and medical history related to PCOS symptoms. All collected data were handled securely to ensure participant privacy. Following data collection, responses were entered and analyzed using SPSS version 27.0. Descriptive statistics, including mean and standard deviation, were calculated for quantitative variables, and appropriate charts and graphs were generated for data presentation. Inferential statistics were applied using the Chi-square test to assess associations between risk factors and PCOS, while odds ratios were calculated to estimate the strength of these associations. A p-value of less than 0.05 was considered statistically significant, and the results were summarized to determine the prevalence and correlates of PCOS among the study population.

RESULTS AND DATA ANALYSIS

Table 1

Table 1 shows no significant association between year of study and fast-food consumption frequency (p = 0.2301). Most participants consumed fast food 1-2 times weekly (44.0%), while daily intake was lowest (6.9%).

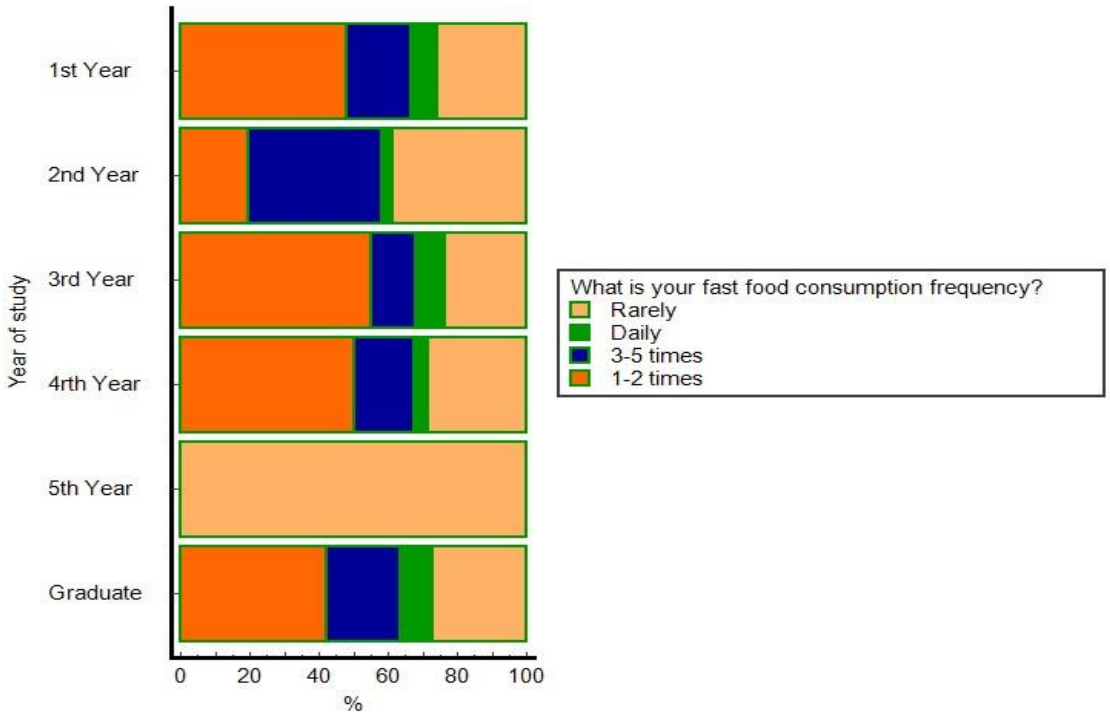
	Year_of_study						
What_is_your_fast_food_consumption_frequency_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
1-2 times	#	6	26	23	0	28	96 (44.0 %)
3-5 times	5	12	6	8	0	14	45 (20.6 %)
Daily	2	1	4	2	0	6	15 (6.9%)
Rarely	7	12	11	13	1	18	62 (28.4 %)
	27 (12.4 %)	31 (14.2 %)	47 (21.6 %)	46 (21.1 %)	1 (0.5 %)	66 (30.3%)	218

Chi-squared	18.649
DF	15

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Significance level	P = 0.2301
Contingency coefficient	0.281



The graph shows that 1-2 times weekly fast food intake was the most common pattern across academic years. Overall, fast food consumption remained almost consistent among different study years

TABLE 2

Table 2 shows no significant association between year of study and menstrual cycle length (p = 0.5546). Most participants reported a normal cycle length of 21-35 days (65.1%).

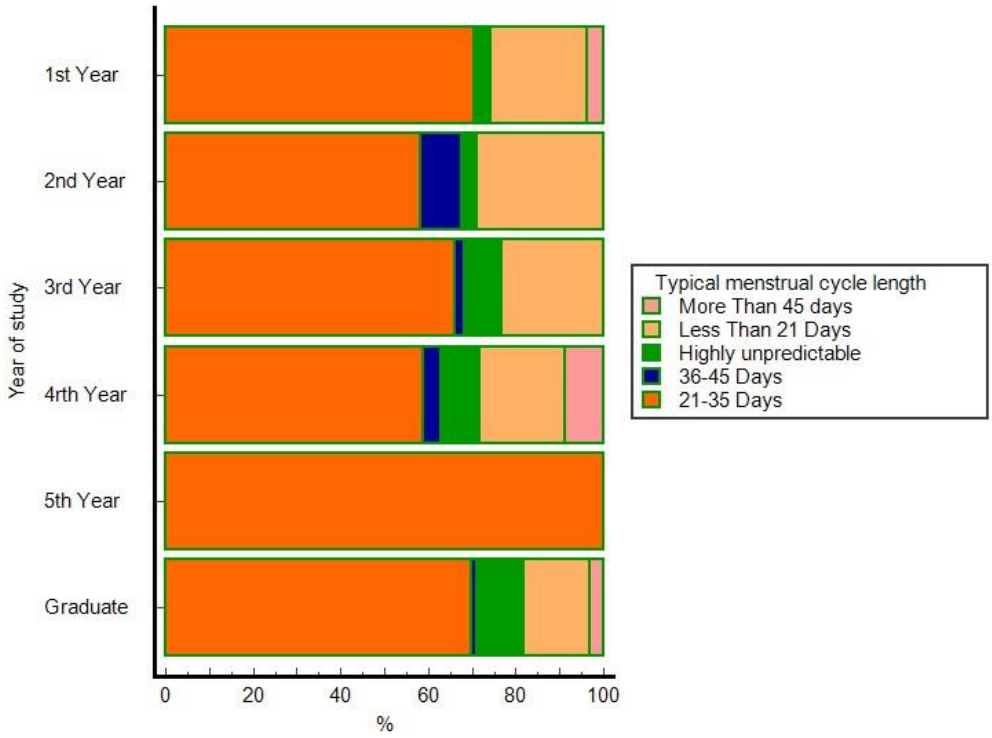
	Year_of_study						
Typical_menstrual_cycle_length	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
21-35 Days	19	18	31	27	1	46	142 (65.1%)
36-45 Days	0	3	1	2	0	1	7 (3.2%)
Highly unpredictable	1	1	4	4	0	7	17 (7.8%)
Less Than 21 Days	6	9	11	9	0	10	45 (20.6%)
More Than 45 days	1	0	0	4	0	2	7 (3.2%)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	18.499
DF	20
Significance level	P = 0.5546
Contingency coefficient	0.280



The graph shows that normal cycle length was most common in all academic years. Shorter cycles and unpredictable cycles were reported by fewer participants.

TABLE 3

Table 3 shows no significant association between year of study and academic stress level (p = 0.0720). Most participants reported moderate stress level 3 (36.2%), followed by level 4 (29.4%).

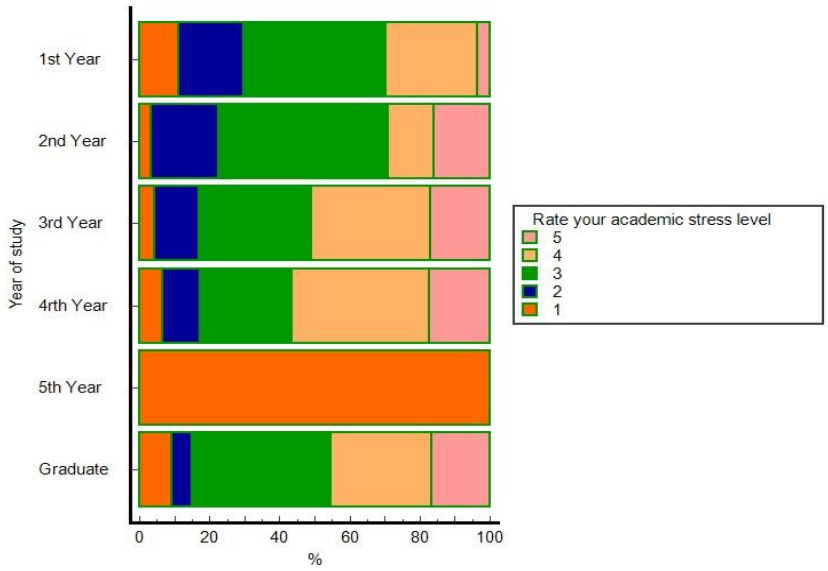
	Year_of_study						
Rate_your_academic_stress_level	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
1	3	1	2	3	1	6	16 (7.3%)
2	5	6	6	5	0	4	26 (11.9%)
3	11	15	15	12	0	26	79 (36.2%)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

4	7	4	16	18	0	19	64 (29.4%)
5	1	5	8	8	0	11	33 (15.1%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	29.869
DF	20
Significance level	P = 0.0720
Contingency coefficient	0.347



The graph shows moderate stress as the most common level across most academic years. Higher stress levels were more visible among 3rd year, 4th year, and graduate students.

TABLE 4

Table 4 shows no significant association between year of study and persistent severe acne (p = 0.9345). Most participants reported no persistent severe acne (68.8%)

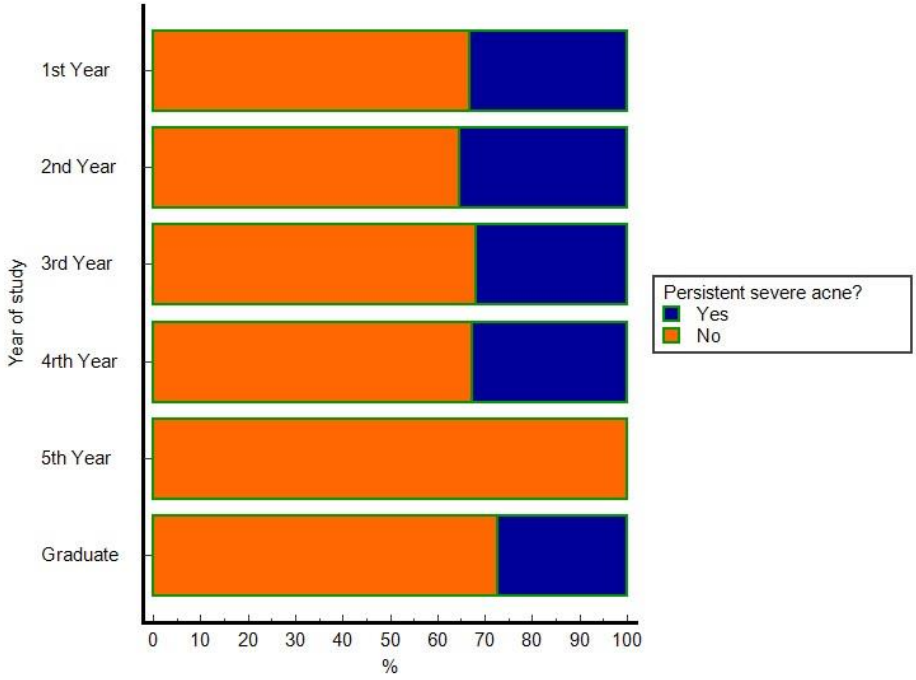
	Year_of_study						
Persistent_severe_acne_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	18	20	32	31	1	48	150 (68.8%)
Yes	9	11	15	15	0	18	68 (31.2%)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	1.304
DF	5
Significance level	P = 0.9345
Contingency coefficient	0.077



The graph shows that 'No' response was higher than 'Yes' in almost all academic years. This indicates that persistent severe acne was less common among participants.

TABLE 5

Table 5 shows no significant association between year of study and number of periods in the last 12 months (p = 0.5169). Most participants reported 8-12 periods per year (71.1%).

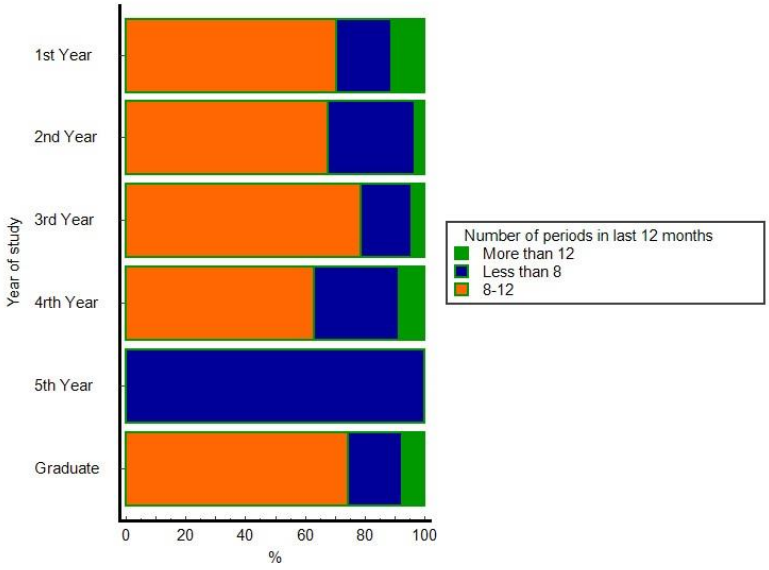
	Year_of_study						
Number_of_periods_in_last_12_months	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
8-12	19	21	37	29	0	49	155 (71.1%)
Less than 8	5	9	8	13	1	12	48 (22.0%)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

More than 12	3	1	2	4	0	5	15 (6.9%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	9.161
DF	10
Significance level	P = 0.5169
Contingency coefficient	0.201



The graph shows that normal menstrual frequency was common across all study years. Fewer than 8 periods were reported by a smaller but noticeable group of participants.

TABLE 6

Table 6 shows no significant association between year of study and marital status (p = 0.2763). Most participants were single (83.9%).

	Year_of_study						
Marital_Status	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
Married	3	4	6	2	0	14	29 (13.3%)

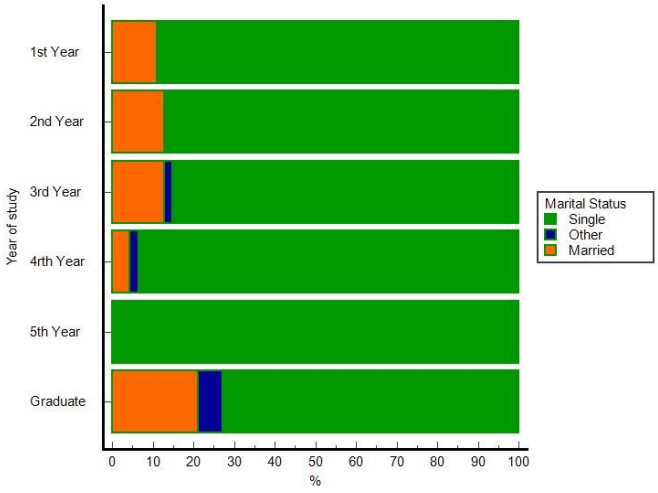
Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Other	0	0	1	1	0	4	6 (2.8%)
Single	24	27	40	43	1	48	183 (83.9%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Classification X	Year_of_study Year of study
Classification Y	Marital_Status Marital Status

Chi-squared	12.133
DF	10
Significance level	P = 0.2763
Contingency coefficient	0.230



The graph shows that single students were the majority in all academic years. Married participants were comparatively fewer, with slightly higher numbers among graduates.

TABLE 7

Table 7 shows no significant association between year of study and sleep duration less than 6 hours (p=0.8020). Most participants reported sleeping 6 hours or more (60.1%).

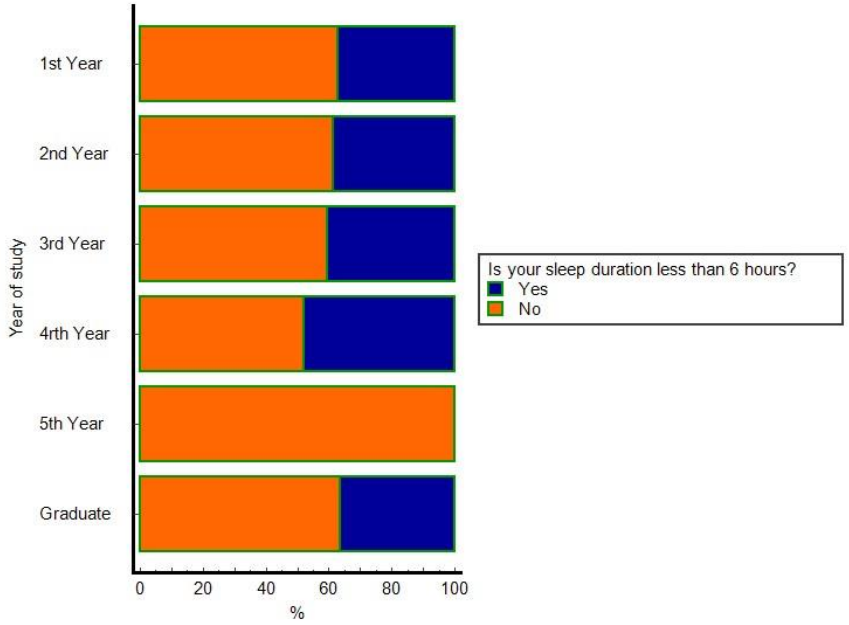
	Year_of_study						
Is_your_sleep_duration_less_than_6_hours_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

No	17	19	28	24	1	42	131 (60.1%)
Yes	10	12	19	22	0	24	87 (39.9%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	2.329
DF	5
Significance level	P = 0.8020
Contingency coefficient	0.103



The graph shows that adequate sleep was more common in most academic years. However, a considerable number of students also reported sleeping less than 6 hours.

TABLE 8

Table 8 shows no significant association between year of study and exercise frequency (p = 0.7974). More than half of the participants reported no exercise per week (52.3%).

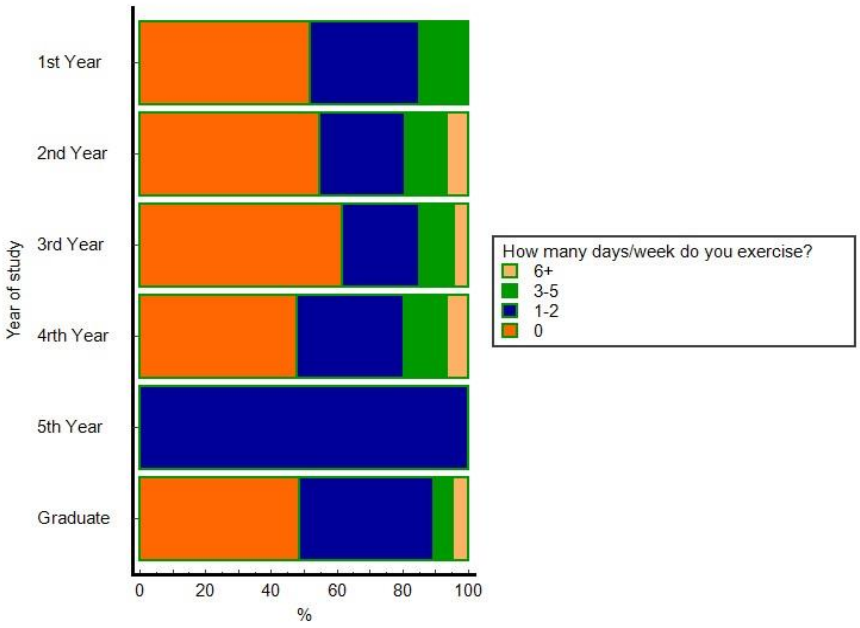
	Year_of_study						
How_many_days_week_do_you_exercise_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

0	14	17	29	22	0	32	114 (52.3%)
1-2	9	8	11	15	1	27	71 (32.6%)
3-5	4	4	5	6	0	4	23 (10.6%)
6+	0	2	2	3	0	3	10 (4.6%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	10.347
DF	15
Significance level	P = 0.7974
Contingency coefficient	0.213



The graph shows physical inactivity as the most common pattern across study years. Only a small percentage exercised 3-5 days or 6+ days per week

TABLE 9

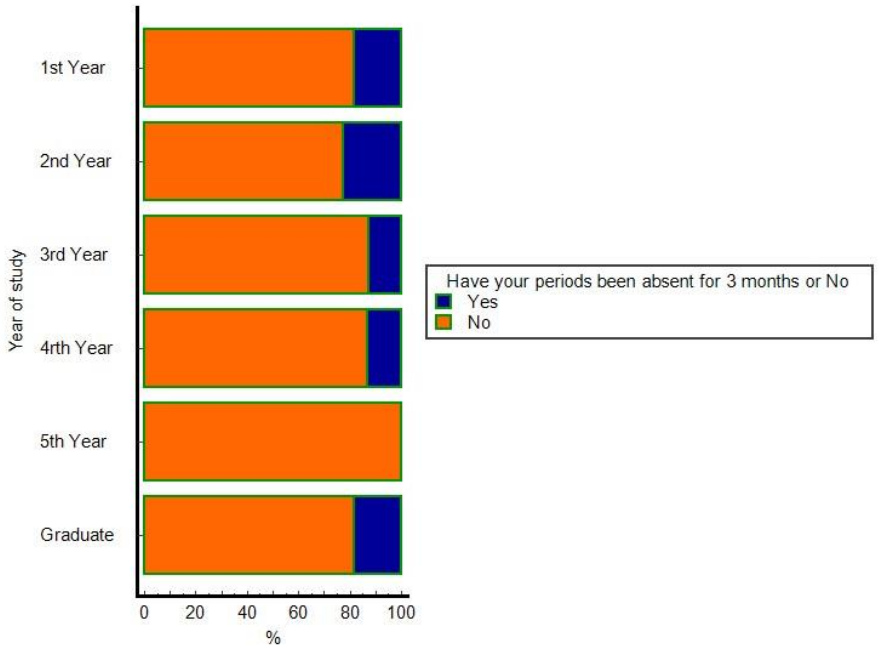
Table 9 shows no significant association between year of study and absence of periods for 3 months or more (p = 0.8326). Most participants did not report prolonged absence of periods (83.5%).

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

	Year_of_study						
Have_your_periods_been_absent_for_3_months_or_more_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	22	24	41	40	1	54	182 (83.5 %)
Yes	5	7	6	6	0	12	36 (16.5 %)
	27 (12.4 %)	31 (14.2 %)	47 (21.6 %)	46 (21.1 %)	1 (0.5 %)	66 (30.3%)	218

Chi-squared	2.118
DF	5
Significance level	P = 0.8326
Contingency coefficient	0.098



The graph shows that 'No' response was dominant in all academic years. Extended absence of periods was comparatively less common.

Frontier in Medical & Health Research

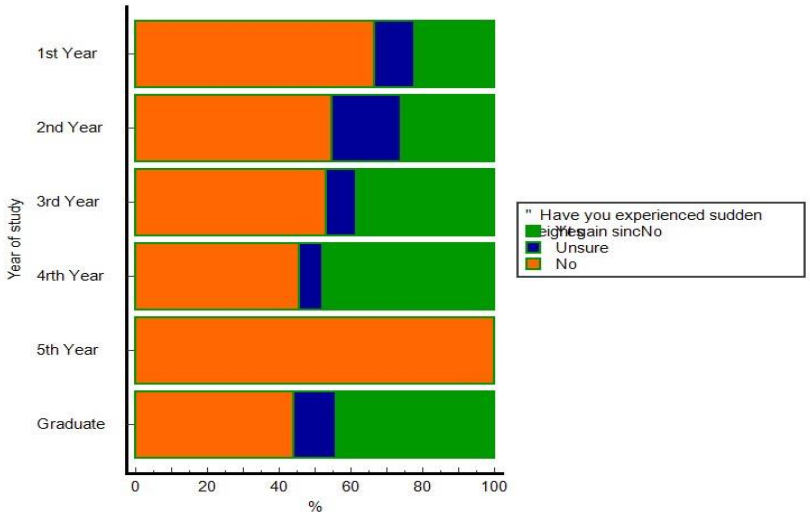
ISSN: (e) 3007-1607 (p) 3007-1593

TABLE 10

Table 10 shows no significant association between year of study and sudden weight gain since starting university (p = 0.3422). Half of the participants reported no sudden weight gain (50.9%).

	Year_of_study						
Have_you_experienced_sudden_weight_gain_since_starting_university_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	18	17	25	21	1	29	111 (50.9 %)
Unsure	3	6	4	3	0	8	24 (11.0 %)
Yes	6	8	18	22	0	29	83 (38.1 %)
	27 (12.4 %)	31 (14.2 %)	47 (21.6 %)	46 (21.1 %)	1 (0.5 %)	66 (30.3 %)	218

Chi-squared	11.199
DF	10
Significance level	P = 0.3422
Contingency coefficient	0.221



The graph shows that most students did not report sudden weight gain. However, 'Yes' responses were slightly more visible among 3rd year, 4th year, and graduate students.

Frontier in Medical & Health Research

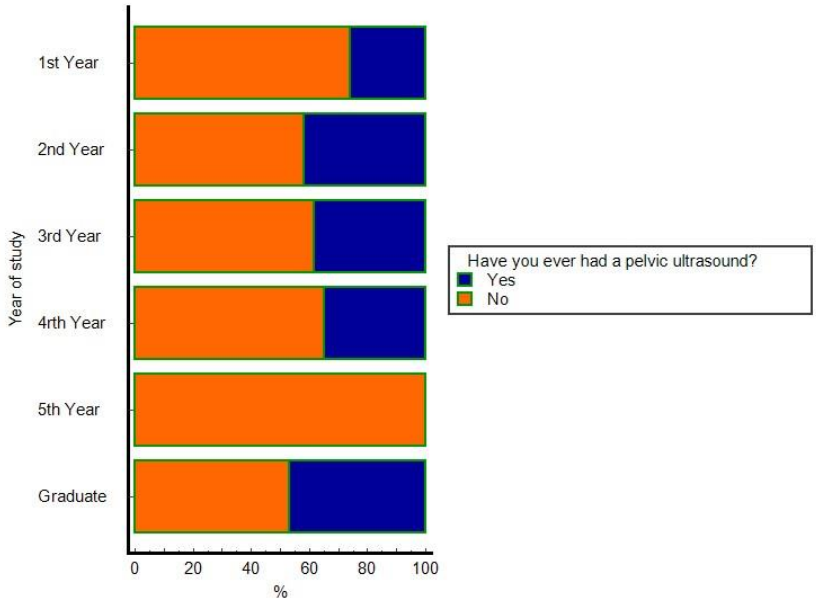
ISSN: (e) 3007-1607 (p) 3007-1593

TABLE 11

Table 11 shows no significant association between year of study and history of pelvic ultrasound (p = 0.4398). Most participants had never undergone pelvic ultrasound (61.0%).

	Year_of_study						
Have_you_ever_had_a_pelvic_ultrasound_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	20	18	29	30	1	35	133 (61.0%)
Yes	7	13	18	16	0	31	85 (39.0%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	4.808
DF	5
Significance level	P = 0.4398
Contingency coefficient	0.147



The graph shows that 'No' response was higher in most academic years. Pelvic ultrasound history appeared slightly more common among senior and graduate students.

Frontier in Medical & Health Research

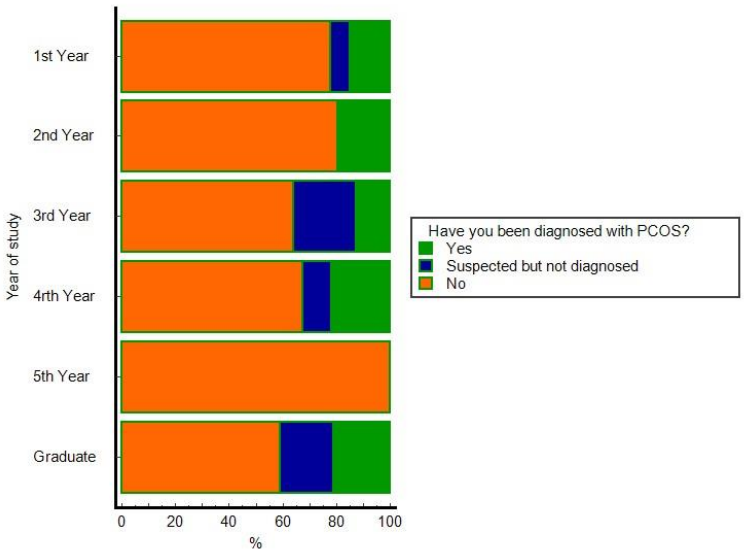
ISSN: (e) 3007-1607 (p) 3007-1593

TABLE 12

Table 12 shows no significant association between year of study and PCOS diagnosis status (p = 0.1776). Most participants had not been diagnosed with PCOS (67.4%).

	Year_of_study						
Have_you_been_diagnosed_with_PCOS_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	21	25	30	31	1	39	147 (67.4%)
Suspected but not diagnosed	2	0	11	5	0	13	31 (14.2%)
Yes	4	6	6	10	0	14	40 (18.3%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	13.901
DF	10
Significance level	P = 0.1776
Contingency coefficient	0.245



Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

The graph shows that 'No diagnosis' was the most common response across all years. A smaller proportion reported confirmed or suspected PCOS.

TABLE 13

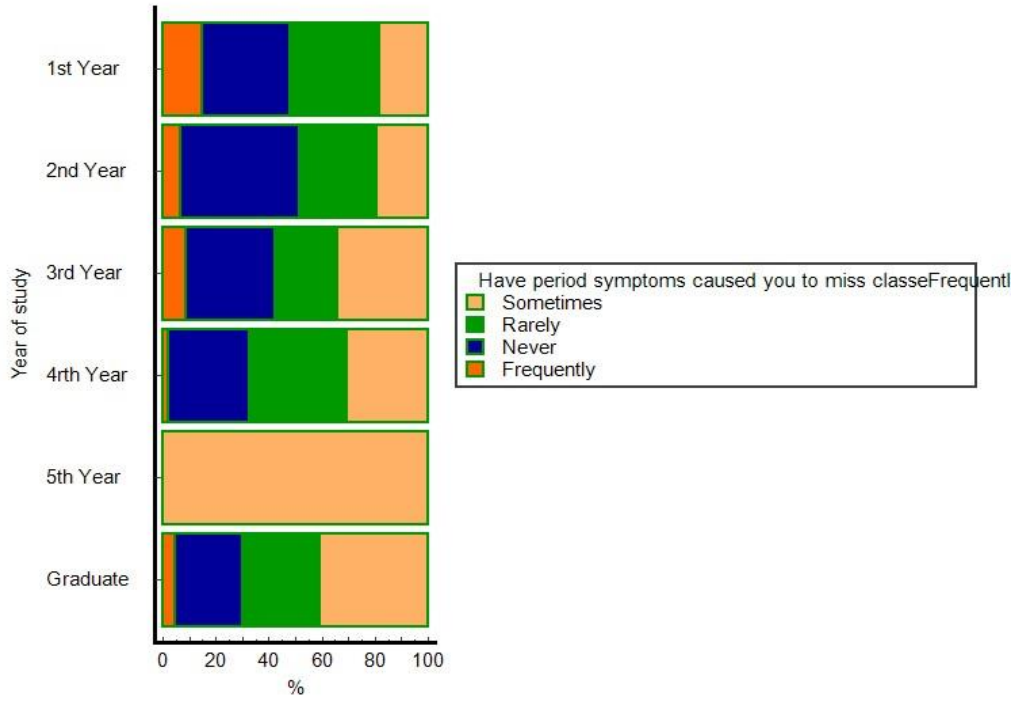
Table 13 shows no significant association between academic year and missing classes due to period symptoms (p = 0.3756). Most students never, rarely, or sometimes missed classes, while frequent absence was low (6.4%).

	Year_of_study						
Have_period_symptoms_caused_you_to_miss_classes_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
Frequently	4	2	4	1	0	3	14 (6.4%)
Never	9	14	16	14	0	17	70 (32.1%)
Rarely	9	9	11	17	0	19	65 (29.8%)
Sometimes	5	6	16	14	1	27	69 (31.7%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	16.098
DF	15
Significance level	P = 0.3756
Contingency coefficient	0.262

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593



The graph shows that frequent class absence due to period symptoms was uncommon. The pattern of class absence was mostly similar across academic years.

TABLE 14

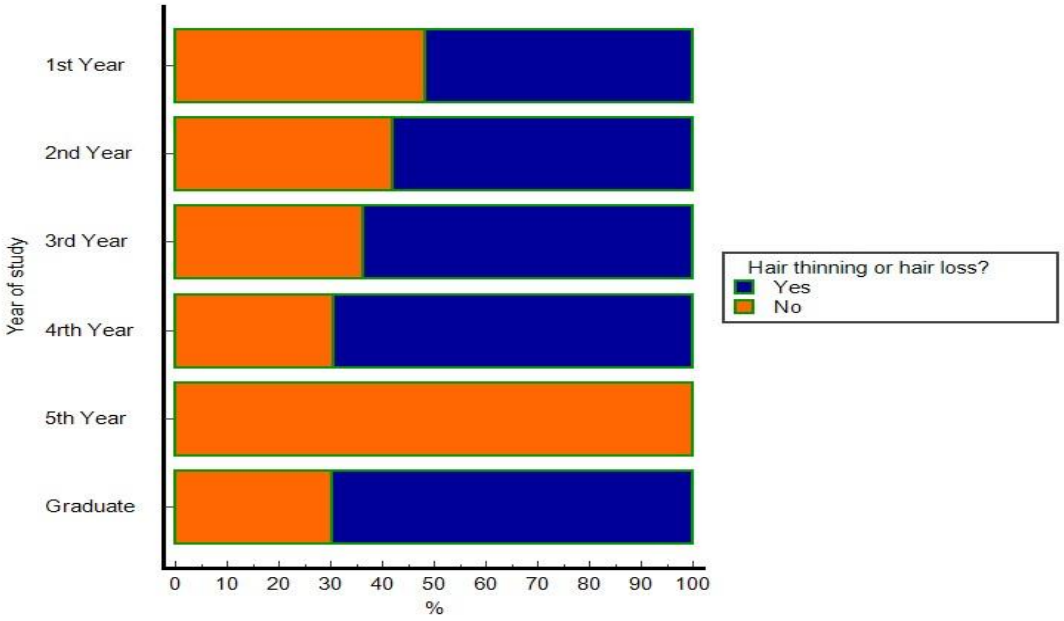
Table 14 shows no significant association between academic year and hair thinning or hair loss (p = 0.3536). However, most participants reported hair thinning or hair loss (64.2%).

	Year_of_study						
Hair_thinning_or_hair_loss_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	13	13	17	14	1	20	78 (35.8%)
Yes	14	18	30	32	0	46	140 (64.2%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	5.540
DF	5
Significance level	P = 0.3536
Contingency coefficient	0.157

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593



The graph shows that hair loss was reported by a higher proportion of students in most academic years. Overall distribution remained similar across study years.

TABLE 15

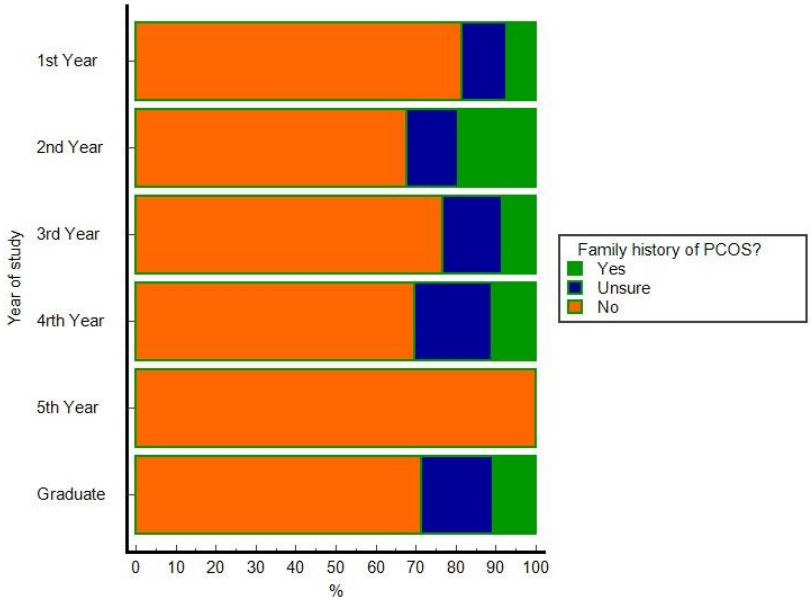
Table 15 shows no significant association between year of study and family history of PCOS (p = 0.9116). Most participants reported no family history of PCOS (72.9%).

	Year_of_study						
Family_history_of_PCOS_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	22	21	36	32	1	47	159 (72.9%)
Unsure	3	4	7	9	0	12	35 (16.1%)
Yes	2	6	4	5	0	7	24 (11.0%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	4.679
DF	10
Significance level	P = 0.9116
Contingency coefficient	0.145

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593



The graph shows that 'No family history' was the dominant response in all academic years. Only a small percentage reported positive family history or uncertainty.

TABLE 16

Table 16 shows no significant association between year of study and excess facial/body hair growth (p = 0.3694). Most participants reported none (35.8%) or mild hair growth (34.4%).

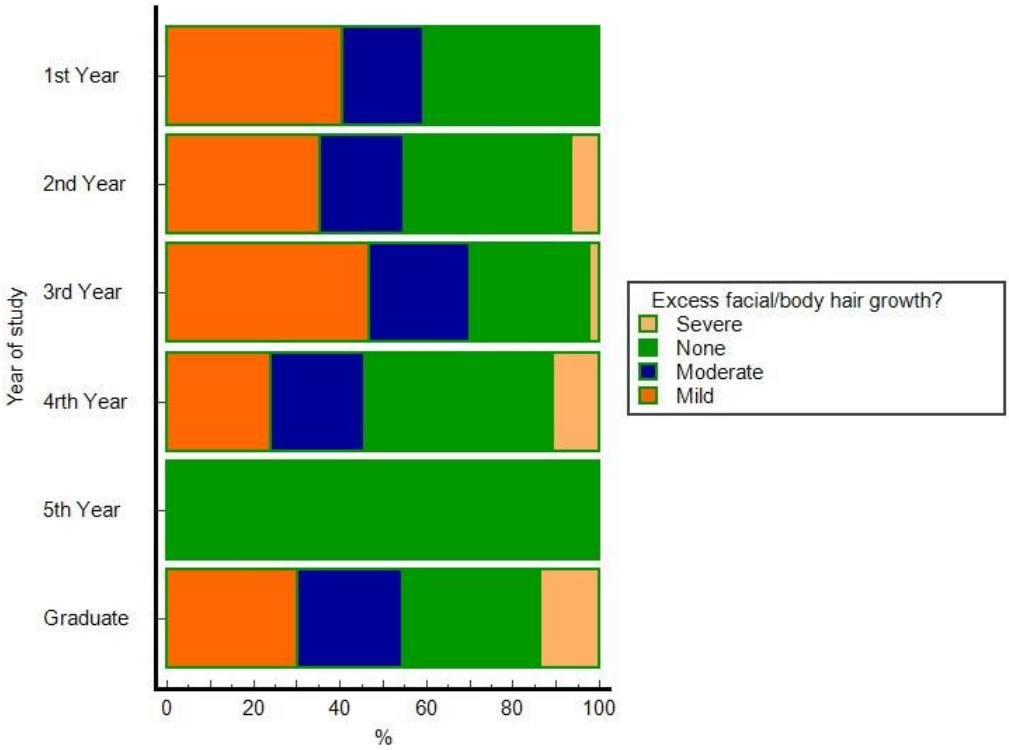
	Year_of_study						
Excess_facial_body_hair_growth_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
Mild	11	11	22	11	0	20	75 (34.4%)
Moderate	5	6	11	10	0	16	48 (22.0%)
None	11	12	13	20	1	21	78 (35.8%)
Severe	0	2	1	5	0	9	17 (7.8%)
	27 (12.4%)	31 (14.2%)	47 (21.6%)	46 (21.1%)	1 (0.5%)	66 (30.3%)	218

Chi-squared	16.192
DF	15
Significance level	P = 0.3694
Contingency coefficient	0.263

Volume 4, Issue 3, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593



The graph shows that none or mild hair growth was most common across academic years. Moderate and severe hair growth were less frequent.

TABLE 17

Table 17 shows no significant association between year of study and effect of symptoms on mental health (p = 0.0909). Most participants reported slight (36.2%) or moderate effect (28.9%).

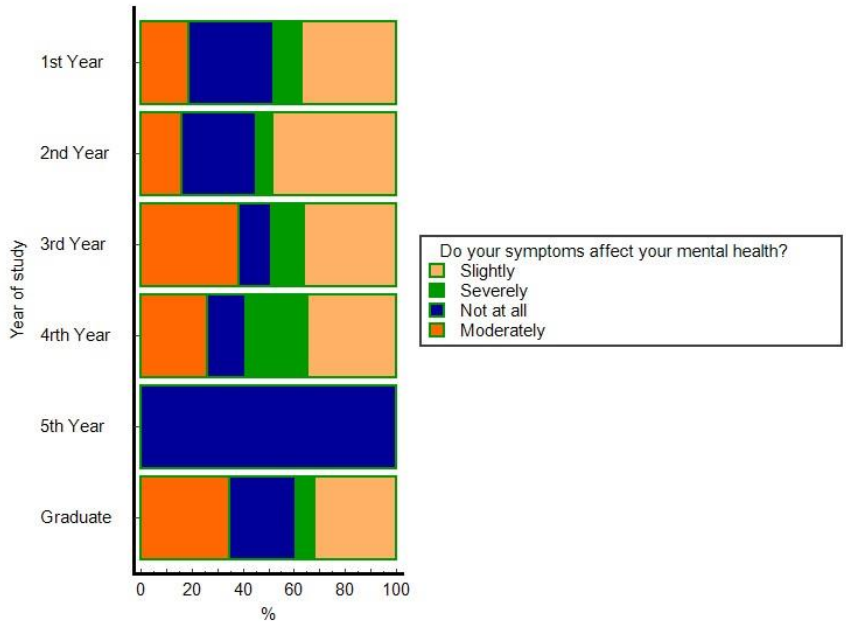
	Year_of_study						
Do_your_symptoms_affect_your_mental_health_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
Moderately	5	5	18	12	0	23	63 (28.9 %)
Not at all	9	9	6	7	1	17	49 (22.5 %)
Severely	3	2	6	11	0	5	27 (12.4 %)
Slightly	10	15	17	16	0	21	79 (36.2 %)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

	27 (12.4 %)	31 (14.2 %)	47 (21.6 %)	46 (21.1 %)	1 (0.5 %)	66 (30.3%)	218

Chi-squared	22.691
DF	15
Significance level	P = 0.0909
Contingency coefficient	0.307



The graph shows that symptoms mostly affected mental health slightly or moderately. Severe mental health effect was reported by a smaller group of participants.

TABLE 18

Table 18 shows no significant association between year of study and severe menstrual pain (p = 0.5833). More than half of the participants reported severe menstrual pain (58.7%).

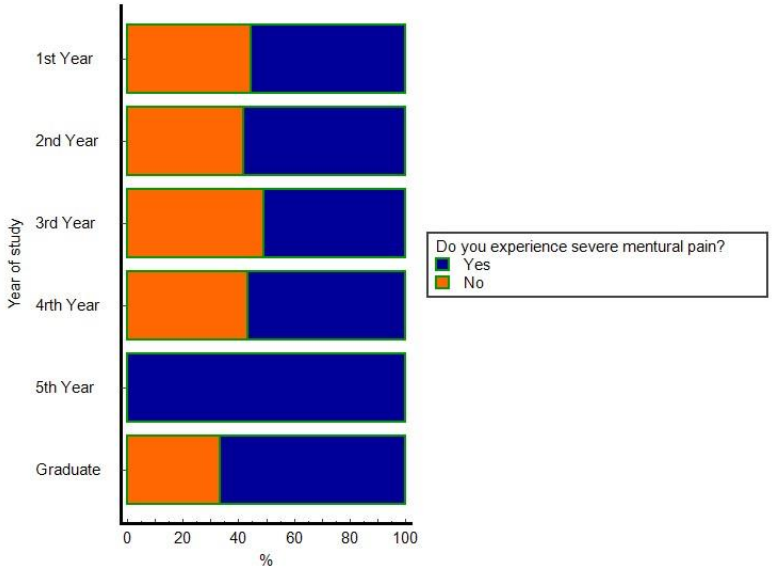
	Year_of_study						
Do_you_experience_severe_mentural_pain_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
No	12	13	23	20	0	22	90 (41.3 %)
Yes	15	18	24	26	1	44	128 (58.7 %)
	27	31	47	46	1	66 (30.3%)	218

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

	(12.4 %)	(14.2 %)	(21.6 %)	(21.1 %)	(0.5%)		

Chi-squared	3.768
DF	5
Significance level	P = 0.5833
Contingency coefficient	0.130



The graph shows that severe menstrual pain was common across academic years. 'Yes' responses were generally higher than 'No' responses, but differences by year were not significant.

TABLE 19

Table 19 shows the most common age at first menstruation was 13 years (22.5%), followed very closely by 14 years (22.0%).

Classification X	Year_of_study Year of study
Classification Y	Age_at_first_menstruation Age at first menstruation

	Year_of_study						
Age_at_first_menstruation	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
8	0	0	1	0	0	0	1 (0.5%)
9	0	0	0	0	0	1	1 (0.5%)
10	0	1	1	1	0	0	3 (1.4%)

Frontier in Medical & Health Research

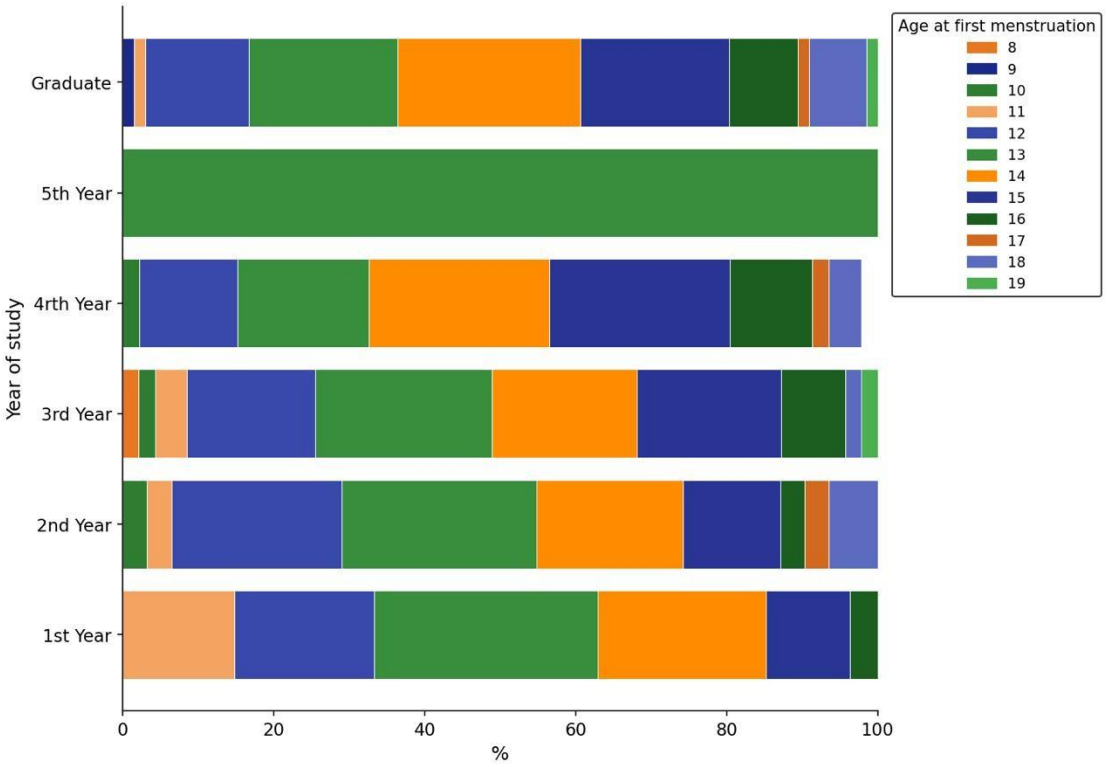
ISSN: (e) 3007-1607 (p) 3007-1593

11	4	1	2	0	0	1	8 (3.7%)
12	5	7	8	6	0	9	35 (16.1 %)
13	8	8	11	8	1	13	49 (22.5 %)
14	6	6	9	11	0	16	48 (22.0 %)
15	3	4	9	11	0	13	40 (18.3 %)
16	1	1	4	5	0	6	17 (7.8%)
17	0	1	0	1	0	1	3 (1.4%)
18	0	2	1	2	0	5	10 (4.6%)
19	0	0	1	0	0	1	2 (0.9%)
nill	0	0	0	1	0	0	1 (0.5%)
	27 (12.4%)	31 (14.2%)	47 (21.6 %)	46 (21.1 %)	1 (0.5%)	66 (30.3%)	218

Chi-squared	42.414
DF	60
Significance level	P = 0.9585
Contingency coefficient	0.404

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593



The graph shows that students from all years of study reported a mostly slight to moderate impact of symptoms on mental health. Overall, there is no significant difference across years of study, as the pattern remains consistent in all groups

TABLE 20

Table 20 shows that most participants reported that their symptoms affected their mental health slightly (36.2%), followed by moderately (28.9%), indicating a predominantly mild to moderate impact.

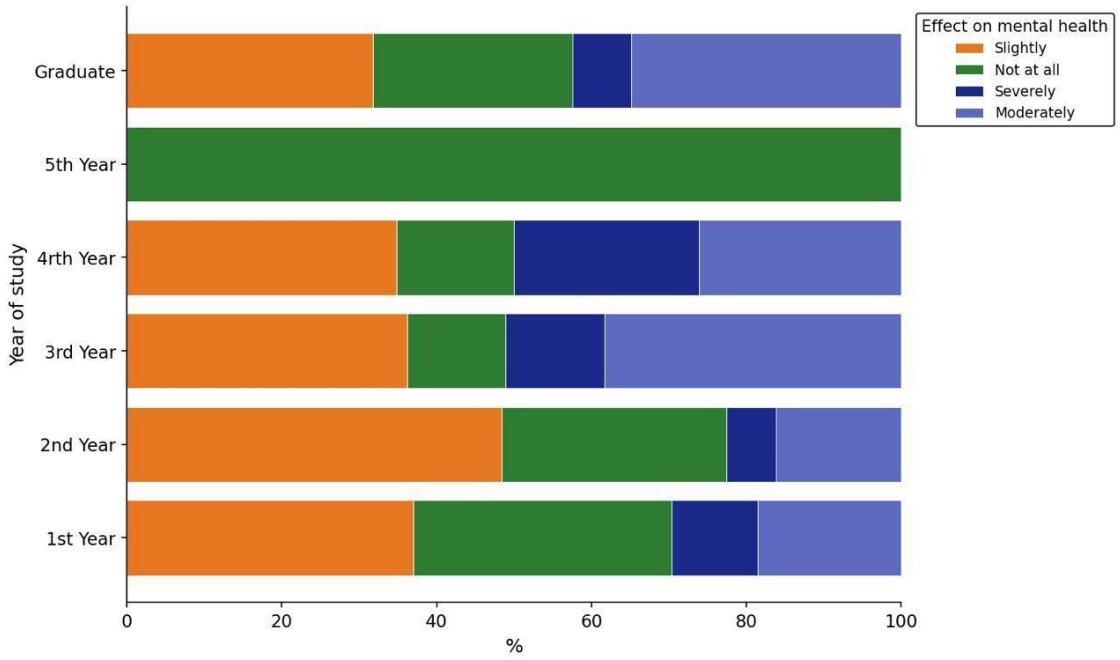
	Year_of_study						
Do_your_symptoms_affect_your_mental_health_	1st Year	2nd Year	3rd Year	4rth Year	5th Year	Graduate	
Moderately	5	5	18	12	0	23	63 (28.9 %)
Not at all	9	9	6	7	1	17	49 (22.5 %)
Severely	3	2	6	11	0	5	27 (12.4 %)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Slightly	10	15	17	16	0	21	79 (36.2 %)
	27 (12.4 %)	31 (14.2 %)	47 (21.6 %)	46 (21.1 %)	1 (0.5 %)	66 (30.3 %)	218

Chi-squared	22.691
DF	15
Significance level	P = 0.0909
Contingency coefficient	0.307



The graph shows that most participants experienced menarche between 12–15 years, with the highest frequency at 13–14 years, indicating a normal early adolescent clustering pattern.

6 DISCUSSION

The purpose of the present study was to identify the presence of symptoms of Polycystic Ovary Syndrome (PCOS) among female students from The University of Lahore, to establish the prevalence of such symptoms among the women and to determine the possible influence of the symptoms on health and academic performance of female students. PCOS is a hormone issue that affects many women in their early twenties and can lead to hormone imbalances, irregular periods and psychological issues. A higher risk of developing or exacerbating symptoms of PCOS could occur in a university environment, as this may place students under additional academic stress, make them increasingly irregular, and not get as much exercise and physical activity as they might otherwise need, and not eat well. Thus, an early identification and prevention of patterns of symptoms and lifestyle behaviors in this population is important.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Prevalence revealed by the study showed that there was a significant percentage of students with symptoms suggestive of PCOS. These were menstrual irregularities, extreme cramping periods, heavy facial and bodily hair, baldness and rapid weight gain. While 65.1% of the participants had a normal cycle of 21–35 days, there was a significant number with shorter (less than 21 days, 20.6%) or less regular period (highly irregular, 7.8%). Menstrual irregularity is one of the most frequent clinical signs associated with PCOS and is a sign of potential hormone imbalance and ovulation disorders.

Other symptoms included menstrual cycles abnormalities, alopecia, hirsutism, and weight gain. Such symptoms are usually related to androgen excess and metabolic dysfunction two major symptoms of PCOS. These physical changes could also impact on self esteem, body image and mental health of students. As the symptoms increase with higher academic years, either the hormone imbalance increases over time or the stress and lifestyle that it may have developed over multiple years has a cumulative effect.

In the current research, lifestyle analysis revealed that the health behaviors of the subjects were mostly poor as overall. Over half (52.3%) stated that they had low physical activity indicating a sedentary lifestyle. No stay is a risk element for gaining weight, insulin resistance, and getting even worse polycystic ovarian syndrome symptoms. No stay may lead to weight increase, insulin resistance and worsening of symptoms associated with PCOS. Fast food was also consumed regularly the majority of students ate it on between one and two occasions per week and a minority ate it regularly. These eating habits can lead to metabolic disruptions and worsen hormonal issues. Another feature of life omission was also prevalent, especially with senior students, many of whom admitted sleep of less than six hours a day. The hormonal, stress and metabolic regulation aspects of sleep are important. This prolonged lack of sleep might raise cortisol levels, and exacerbate metabolic and reproductive health issues. This may be explained by the fact that sleep deprivation seems to be more prevalent than in final year students; due to the high level of academic burden and stress in the Final Year students, possibly.

There was no significant association between academic year and physical activity (χ^2 = 10.347, p = 0.7974) and fast food consumption (χ^2 = 18.649, p = 0.2301) respectively based upon chi square tests. This means unhealthy lifestyle patterns were not limited to a specific year, but were common across all academic years. The results indicate that lifestyle related risk factors are prevalent among university students and are also in need of institution wide interventions instead of interventions for specific year levels. One of the important observations of this study was the difference between the symptoms and clinical diagnosis. Many of the participants described symptoms that could someway be linked to PCOS, but most of them have not been tested—for example, having hormone testing or an ultrasound of the pelvis. The percentage of 'suspected but not diagnosed' seemed to have risen in the higher academic years; this may indicate an increased awareness of symptoms over the years, but it does not necessarily ensure consultation with medical care or diagnosis. This could be a result of unawareness, social stigma, inability to access health care services, or ignoring symptoms. This gaps in diagnosis is a concerning situation due to the onset of long lasting diseases that could occur such as diabetes mellitus type 2, infertility, obesity, cardiovascular diseases, and psychological diseases. These risks can be decreased by lifestyle changes and medical therapies if they are managed early. So, if cases are not identified and managed early, there's a risk of poor health outcomes in the longer term.

The study also proposes that there is an indirect impact of the symptoms associated with PCOS on academic performance. Overall, pain, fatigue, sleep disturbance and psychological stress have a negative impact on concentration, attendance and on academic productivity of the pupil. Physical symptoms, including weight gain and hirsutism can also have a negative effect on confidence and social interaction, which may also impact on student life. In general, the results indicate that PCOS symptoms are relatively prevalent among female university students with unhealthy lifestyle

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

risk factors of low physical activity, poor dietary patterns and poor sleep quality. But academic year does not significantly relate to these issues, so it seems that they are common among all students. Lack of formal diagnosis for the symptomatic person emerges as the most important concern, indicating lack of awareness or better access to healthcare services for this group of people.

CONCLUSION

The study considered the presence of PCOS, as well as its implications and consequences among university female students. It was found that quite a few of the respondents experienced one or several PCOS related symptoms, including the irregular menstrual period, weight gain, hair loss, excessive hair growth on the face or other parts of the body, and mental distress which affected their studies and everyday life. There was no difference in prevalence of the symptoms under consideration across different educational levels. There were also respondents who experienced PCOS related health problems or those similar within their family members. Moreover, there were instances of undiagnosed PCOS. The results suggest that this is a critical problem since it shows a lack of PCOS knowledge and diagnostics among the female university population. PCOS is a serious health condition among university women as it can influence their health status and academic performance.

LIMITATIONS

- Data were self reported and may have been biased.
- PCOS was symptom based and was not clinically confirmed.
- The cross sectional design prevented causal inference.

REFERENCE

Abdelghani, A. (2023). Epidemiology, Risk Factors, Pathogenesis And Etiology Of Polycystic Ovarian Syndrome: Review Article.

Acharya, N. (2020). Polycystic Ovarian Syndrome (PCOS) In Obese Metabolic Phenotypes.

Al, H. E. (2025). Frequency Of Polycystic Ovarian Syndrome In Women Presenting With Infertility.

Al., R. R. E. (2023). Efficacy Of Vitamin D Supplementation And Metformin Compared To Metformin Alone In Infertile Females With Polycystic Ovary Syndrome: A Randomized Open Label Trial.

Al-Mulla, A. (2023). Clinical Phenotypes Of PCOS: A Cross-Sectional Study.

Amiri, M. (2025). MON-187 Global PCOS Prevalence: A Meta-Analysis Using The Recently Developed, PCOS Epidemiology And Phenotype Tool.

Andini, A. D. (2019). Factors Related To Polycystic Ovary Syndrome Among Women In Asia Population: A Systematic Review.

Awan, S. (2025). Comparison Of Metformin And Myoinositol In Improving Insulin Sensitivity Of Women With Polycystic Ovarian Syndrome.

Balogun, M. (2022). PMON245 Clinical Phenotypes Of Polycystic Ovary Syndrome (PCOS) In Nigerian Women: Preliminary Results Of The Nigeria PCOS Epidemiology & Phenotype (Nigeria-PEP) Study.

Butt, M. S. (2024). Comparison Of Physical Activity Levels And Dietary Habits Between Women With Polycystic Ovarian Syndrome And Healthy Controls Of Reproductive Age:
A Case-Control Study.

Chouhan, A. (2022). Advance Research On Polycystic Ovary Syndrome (PCOS).

Dong, J., & Rees, D. A. (2023). Polycystic Ovary Syndrome: Pathophysiology And Therapeutic Opportunities.

Dumesic, D. A. (2022). Polycystic Ovary Syndrome As A Plausible Evolutionary Outcome Of Metabolic Adaptation.

Eckert, D. (2023). Hormone Imbalance In Polycystic Ovarian Syndrome.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Elsa, E. (2025). Pengaruh Edukasi Terhadap Pengetahuan Tentang Perilaku Hidup Bersih Dan Sehat (PHBS) Siswa SDN 104 Kendari.

Farhana, A. (2024). A Narrative Review On Global Epidemiology Of PCOS And Its Hormonal Management.

Fatima, I. (2021). Relationship Between Loci Of Control And Health-Promoting Behaviors In Pakistani Women With Polycystic Ovary Syndrome: Coping Strategies As Mediators.

Fatima, M. (2024). Polycystic Ovary Syndrome: The Interplay Between Ovarian Morphology, Hyperandrogenism, And Metabolic Health.

Gul, U. (2023). Comparison Of Metformin And Orlistat In Anovulatory, Overweight And Obese Women With Polycystic Ovarian Syndrome.

Gul, Z. (2025). Polycystic Ovary Syndrome And Insulin Resistance: Comparative Analysis Of Obese And Non-Obese Women In A Tertiary Care Setting Pakistan.

Guo, Y. (2025). Analysis Of Factors Influencing Polycystic Ovary Syndrome In Women Of Reproductive Age Based On Directed Acyclic Graphs.

Habib, A. (2025). Frequency Of Polycystic Ovaries As A Causative Factor In Primary Infertility Of Patients Undergoing Laparoscopy In Lady Reading Hospital.

Hanedan, N. (2022). Effect Of The Presence Of Polycystic Ovary Syndrome-Related Features On Anti-Mullerian Hormone And Androstenedione Levels In Adolescents With Or Without Menstrual Irregularity.

Hanif, S. (2025). Frequency Of Phenotypic Features In Women Having PCOS Presenting In A Tertiary Care Hospital Of Azad Jammu & Kashmir.

Haq, I. U. (2025). Pattern Of Hyperandrogenemia In Patients With Polycystic Ovary Syndrome At A Tertiary Care Hospital.

Hteede. (2023). Exploring The Psychological Impact Of Polycystic Ovary Syndrome.

Iqbal, K. (2023). Association Of Polycystic Ovarian Syndrome With Endometrial Carcinoma Among Premenopausal Females.

Juanillo, K. I. (2023). Cervical Cancer Education And Prevention For Women In The Philippines.

K, H. (2025). Efektivitas Kampanye Promosi Kesehatan Dalam Meningkatkan Pengetahuan Dan Perilaku Sehat Masyarakat.

Kancherla, H. (2022). Diagnosis And Treatment Of PCOS – A Comparative Review.

Khan, S. H. (2021). Dehydroepiandrosterone Sulfate (DHEAS) Levels In Polycystic Ovarian Syndrome (PCOS).

Lazareva, L. M. (2020). Polycystic Ovary Syndrome In Women Of Reproductive Age:

Phenotypic Variety And Diagnostic Approaches. Review Of Literature.

Louwers, Y. V. (2020). Characteristics Of Polycystic Ovary Syndrome Throughout Life.

Makhija, N. (2023). Clinico-Metabolic Profile In Lean Versus Obese Polycystic Ovarian Syndrome Women.

Masoumeh. (2025). Polycystic Ovarian Syndrome: A Short Review.

Meczekalski, B. (2023). PCOS In Adolescents—Ongoing Riddles In Diagnosis And Treatment.

Muhyadin, K. J. (2020). Polycystic Ovary Syndrome In Duhok: Clinical And Biochemical Characterizion.

Murtaza, H. G. (2023). Measuring The Awareness Of Polycystic Ovarian Syndrome (PCOS) Among Women In Punjab, Pakistan.

Naeem, I. (2025). Polycystic Ovarian Syndrome: A Risk Factor For Non-Communicable Diseases—Insights Into Recent Research And Prevention Approaches.

Nautiyal, H. (2022). Polycystic Ovarian Syndrome: A Complex Disease With A Genetics Approach.

Panesar, G. K. (2023). Polycystic Ovary Syndrome (Multifactorial Endocrinopathy):

Manifestation And Treatment Strategies.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Robinson, M. (2023). Prevalence And Knowledge Of Polycystic Ovarian Syndrome Of Female Students At A University In Utah.

Roksana Haque. (2022). Polycystic Ovarian Syndrome: A Review On Etiopathology, Diagnosis And Treatment.

Saima Ashraf. (2025). Serum Testosterone And Menstrual Irregularity Among Reproductive-Age Pakistani Women: A Hospital-Based Cross-Sectional Study From Sialkot.

Sidra, S. (2019). Evaluation Of Clinical Manifestations, Health Risks, And Quality Of Life Among Women With Polycystic Ovary Syndrome.

Singh, S. (2023). Polycystic Ovary Syndrome: Etiology, Current Management, And Future Therapeutics.

Sumavia Shehzadi. (2025). Assessment Of The Awareness Regarding Polycystic Ovarian Syndrome Among Undergraduate Students At Lahore College Woman University.

Upadhya, J. P. (2020). Study Of Clinical Characteristics Of Women With Polycystic Ovarian Syndrome.

Wazir, S. (2022). Comparison Of The Effectiveness And Safety Of Myo Inositol With Metformin For The Treatment Of Polycystic Ovary Syndrome In Women.

Wójcik, J. (2020). Polycystic Ovary Syndrome (PCOS) – Risk Factor, Diagnostic And Current Treatment.

Zafar, U. (2019). Prevalence Of PCOS With Associated Symptoms And Complications At Tertiary Care Hospital Of Karachi.

Zeng, W. (2025). Global Trends And Health System Impact On Polycystic Ovary

Syndrome: A Comprehensive Analysis Of Age-Stratified Females From 1990 To 2021.

Zheng, X. (2025). Global Burden Of Polycystic Ovary Syndrome In Women Of Reproductive Age, 1990–2021: Analysis Of The Global Burden Of Disease Study 2021 With Projections To 2050.