Sir Salimullah Medical College Journal

Sir Salimullah Med Coll J 2024; 32: 29-38

Original Article

DOI: https://doi.org/10.3329/ssmcj.v32i1.84503

Association of Socioeconomic Status and Lifestyle Factors of Polycystic Ovarian Disease among Women in a Tertiary Care Hospital in Dhaka

Bilkis Ferdous[1], Md Mostafizur Rahman[2], Nasrin Akhter[3], Romena Afroj[4], Kazi Nahid Morsheda[5], Walida Afrin[6]

Article information
Received: 16.08.2025
Accepted: 18.09.2025

Cite this article:
Ferdous B, Rahman MM, Akhter N, Afroj R, Morsheda KN, Afrin W. Association of Socioeconomic Status and Lifestyle Factors of Polycystic Ovarian Disease among Women in a Tertiary Care Hospital in Dhaka. Sir Salimullah Med Coll J 2024; 32: 29-37.

Key words:
Polycystic Ovarian Disease (PCOD), Socioeconomic Status, Lifestyle Factors

Abstract

Background: *Polycystic Ovarian Disease (PCOD) is a prevalent endocrine disorder affecting 5–18% of women of reproductive age worldwide, with South Asia showing particularly high rates. PCOD is associated with menstrual irregularities, infertility, hyperandrogenic symptoms, and long-term metabolic risks such as obesity, diabetes, and cardiovascular disease. Lifestyle factors, including sedentary behaviour, poor diet, inadequate sleep, and stress, play a central role in disease onset and progression, and urbanisation has contributed to the rising prevalence in the region.The study aim was to assess the association of socioeconomic status and lifestyle factors with the risk of Polycystic Ovarian Disease (PCOD) among women in a tertiary care hospital in Dhaka.* ***Methods:*** *This cross-sectional study included 50 women with clinically diagnosed PCOD attending the Outpatient Department of Obs and Gynae, Bangladesh Medical University, Dhaka, Bangladesh. The duration was 12 months, from July 2024 to June 2025. Data were collected through structured interviews, clinical assessments, and anthropometric measurements. Statistical analysis using SPSS 26 included descriptive statistics, chi-square tests, Pearson correlations, and logistic regression to identify significant predictors of PCOD.* ***Results:*** *Among 50 women with PCOD (mean age 24 years), all were overweight/obese, 92% reported a sedentary lifestyle, and 36% consumed fast food e"3 times weekly; 42% slept <6 hours daily. Menstrual irregularities (oligomenorrhea 78%, amenorrhea 50%) and infertility (42%) were typical. Women from the upper socioeconomic class showed the highest rates of unhealthy lifestyle factors. Regression analysis identified obesity, sedentary behaviour, frequent junk food intake, short sleep duration, and higher SES as strong independent predictors of PCOD risk.* ***Conclusion:*** *Socioeconomic status and lifestyle factors strongly influence PCOD among women in Dhaka, with obesity, sedentary behaviour, junk food consumption, and short sleep emerging as key modifiable predictors. Targeted lifestyle interventions are crucial for reducing the burden, particularly among young urban women.*

Introduction:

Polycystic Ovarian Disease (PCOD), also referred to as polycystic ovary syndrome (PCOS), is one of the most common endocrine disorders affecting women of reproductive age globally.[1] Estimates suggest that PCOD affects 5–10% of reproductive-aged women worldwide, though prevalence can reach up to 18% depending on diagnostic criteria such as the Rotterdam guidelines.[1,2] The World Health Organisation (WHO) has reported that approximately 116 million women were affected by PCOS in 2012, highlighting its substantial global burden [3]. Recent systematic reviews confirm that PCOD prevalence varies across regions, influenced by factors such as ethnicity, lifestyle, and diagnostic definitions.[2,4]

South Asia shows particularly high prevalence rates. In India, the reported prevalence ranges from 3.7% to 22%, depending on the study design and diagnostic standards.[5] In Bangladesh, evidence

1. Associate professor, Department of Obs & Gynae, Bangladesh Medical University, Dhaka, Bangladesh.
2. Professor, Department of Pediatrics, Sir Salimullah Medical College, Dhaka, Bangladesh,
3. Assistant Professor, Department of Haematology, Bangladesh Medical University, Dhaka, Bangladesh,
4. Assistant Professor, Department of Obs & Gynae, Bangladesh Medical University, Dhaka, Bangladesh.
5. Registrar, Paediatrics, Sir Salimullah Medical College, Dhaka, Bangladesh.
6. Assistant professor, Department of Obs & Gynae, Bangladesh Medical University, Dhaka, Bangladesh

Correspondence: Dr.Bilkis Ferdous, Associate Professor, Department of Obs & Gynae, Bangladesh Medical University, Dhaka, Bangladesh, **E-mail:** drbilkis1975@gmail.com

is limited, but available data suggest PCOD is a rising health problem. A narrative review reported prevalence ranging from 6% among general gynecology outpatients to as high as 35–46% among infertile women.[5] One study even found a prevalence of 37% among medical students, indicating that young women may also be at high risk.[6] A recent community-based study in Mymensingh reported a prevalence of 12.5% among reproductive-aged women using sonographic evaluation.[7] Together, these findings suggest that PCOD is prevalent in Bangladesh, although national-level estimates are scarce.PCOD has significant clinical implications. It is the leading cause of anovulatory infertility, responsible for up to 80% of such cases.[8] Beyond infertility, affected women often present with menstrual irregularities, hirsutism, acne, and other hyperandrogenic symptoms, impairing quality of life.[3,9] Significantly, PCOD is associated with metabolic disturbances including insulin resistance, obesity, type 2 diabetes, dyslipidemia, and hypertension.[6,10] These conditions increase long-term risks of cardiovascular disease. Obstetric complications are also more common, with higher rates of gestational diabetes, hypertensive disorders of pregnancy, and miscarriage.[10]

Lifestyle factors play a crucial role in PCOD onset and progression. Sedentary behaviour, poor dietary habits, inadequate sleep, and psychological stress are strongly associated with disease risk.[9,10] Urbanisation and rapid lifestyle changes, particularly in South Asia, have been linked to the rising prevalence. Obesity exacerbates insulin resistance and hyperandrogenism, while modest weight reduction through diet and exercise improves ovulation and metabolic outcomes.[9] Stress has also been identified as a contributing factor, influencing hormonal balance and worsening PCOD symptoms.[10] Thus, modifiable behaviours are central to both prevention and management.Socioeconomic status (SES) is another factor that influences the risk of PCOD. Evidence suggests a social gradient in PCOD, where lower income, lower educational attainment, and unskilled occupations are associated with higher risk.[11] A Danish cohort study reported that women in the lowest income tertile had 1.5 times higher odds of a PCOD diagnosis compared with women in the highest tertile.[11] Similarly, studies in the Middle East and South Asia highlight that women from disadvantaged households are more vulnerable, partly due to poorer nutrition, limited healthcare access, and greater exposure to stress.[10] However, urban middle- and upper-class women are not exempt; sedentary occupations and consumption of calorie-dense foods may also elevate their risk.[9] The relationship between SES and PCOD is therefore complex and context-specific, influenced by both deprivation and affluence-related lifestyle changes. In Bangladesh, limited data exist on these associations, and the extent to which socioeconomic disparities shape PCOD risk remains poorly understood. The study aim was to assess the association of socioeconomic status and lifestyle factors with the risk of Polycystic Ovarian Disease (PCOD) among women in Dhaka.

Methods:

This cross-sectional study was conducted at the Outpatient Department of Obs and Gynae, Bangladesh Medical University, Dhaka, Bangladesh. Women with clinician-diagnosed polycystic ovarian disease (PCOD) attending outpatient services were invited to participate, and 50 cases were enrolled using purposive sampling according to predefined criteria, during 12 months, from July 2024 to June 2025. Inclusion required females aged ≥18 years with a clinician-confirmed PCOD diagnosis documented in the case record based on standard Rotterdam criteria.[12] Exclusion applied to women who were pregnant or within ≤6 months postpartum; had endocrine disorders that could mimic PCOD features; or had used within the past 3 months medications that significantly alter menstrual patterns or metabolic/androgen status.

PCOD cases were those with a clinician-documented diagnosis in the case record. Socioeconomic status (SES) was measured using a composite of education, occupation, and monthly household income of the household head (Modified Kuppuswamy adapted to Bangladesh) and categorised as upper, middle, lower-middle, or lower.[13] A sedentary lifestyle was defined as <150 minutes/week of moderate activity (or <75 minutes/week vigorous) or no planned exercise. Junk/fast-food intake ≥3/week meant consuming commercially prepared fast foods/snacks three or more times weekly. Short sleep duration was <6 hours of nocturnal sleep on average. Body mass index (BMI) was calculated as weight (kg)/height (m^2); overweight 25.0–29.9, obese ≥30.0, with obesity (BMI ≥30) used as the binary exposure in regression. Menstrual irregularities included oligomenorrhoea (cycle length >35 days) and amenorrhoea (no menses for ≤3 months). Hyperandrogenism comprised acne and hirsutism

assessed clinically (Ferriman–Gallwey where applicable).[14] Family history referred to first-degree relatives with PCOD, diabetes, infertility, or menstrual irregularity (present/absent). Comorbidity captured diabetes mellitus (DM).

Analyses were performed in SPSS (v 26.0) with two-sided α=0.05. Continuous variables were summarised as mean±SD (or median [IQR]); categorical variables as n (%). Bivariate associations between SES and lifestyle risks (sedentary behaviour, junk food ≥3/week, sleep <6 h) were tested using Chi-square, and inter-relations among SES and lifestyle factors were examined with Pearson correlations and displayed as a heatmap. Binary logistic regression modelled risk (PCOD status or, where no controls exist, a predefined high-risk PCOD phenotype), reporting unadjusted and adjusted odds ratios (AORs) with 95% CIs for SES, BMI ≥30, sedentary lifestyle, junk food ≥3/week, short sleep, and family history, adjusting for age; results were visualised in a forest plot.

Results:

The study population consisted largely of young women (mean age 24.14 years, 92% between 18 and 30 years), most of whom were married. The majority had at least a secondary-level education (88% secondary or above) and came from middle- or upper-class backgrounds (70%), with many being students or homemakers. All of the participants were either overweight or obese (80% overweight; 20% obese), highlighting a very high rate of adiposity in this group. 92% of the women reported a lack of exercise, indicating that almost all lead a sedentary lifestyle. While current diabetes was rare (2%), a substantial portion had a family history of diabetes (42%), and some had a family history of PCOD (18%), which may contribute to their risk profile.

Table 1: Distribution of study population based on basic characteristics (n=50)

Basic Characteristics	Category	Frequency (n)	Percentage (%)
Age	18–30	46	92%
	>30	4	8%
	Mean ± SD	24.14 ± 4.3	
	Range	17–36 yrs	
Education	None	2	4%
	Primary	4	8%
	Secondary	23	46%
	Graduate & above	21	42%
Occupation	Student	26	52%
	Housewife	19	38%
	Service holder	5	10%
Socio-economic Status	Lower class	5	10%
	Lower middle class	10	20%
	Middle class	15	30%
	Upper class	20	40%
Marital Status	Married	34	68%
BMI	Overweight (25–29.9 kg/m²)	40	80%
	Obese (e”30 kg/m²)	10	20%
Diabetes	Present	1	2%
Family History	PCOD	9	18%
	Diabetes mellitus	21	42%
	Mother’s irregular menstruation	5	10%
	Infertility	6	12%
Physical Exercise	Lack of exercise	46	92%

The study population had a mean age at menarche of 12.6 years (range, 10–15 years). Most women (70%) reported long menstrual cycles (>35 days), while the majority (74%) had menstrual periods lasting 3–7 days. Nearly half (48%) experienced average menstrual blood flow, with 32% reporting scanty and 20% heavier than average flow. In terms of reproductive history, 42% had never been pregnant, 40% had 1–3 pregnancies, and only 18% had more than three.

The clinical history of participants shows that oligomenorrhoea (78%) and amenorrhea (50%) were the most common menstrual disturbances. Acne (58%) was also highly prevalent, while nearly one-third (30%) reported hirsutism. Infertility affected 42% of women, predominantly primary infertility (30%), while 12% had secondary infertility. Hypertension was uncommon, reported in only 6% of participants.

Most women with PCOD in this study belonged to the upper (40%) and middle (30%) socioeconomic classes. Over half were students (52%), followed by housewives (38%). A striking majority (92%) led a sedentary lifestyle, with only 8% engaging in regular exercise. Fast food consumption was typical, with 36% eating it three or more times per week. Sleep deprivation was notable, as 42% reported sleeping less than six hours daily.

Table II: Distribution of study population based on Reproductive life events. (n=50)

Reproductive Life Events	Category	Frequency (n)	Percentage
Age at menarche	Mean ± SD	12.56 ± 0.86	(%)
	Range	10–15 yrs	
Average duration of the cycle	<21 days	1	2%
	21–35 days	14	28%
	>35 days	35	70%
Average duration of the menstrual period	<3 days	6	12%
	3–7 days	37	74%
	>7 days	7	14%
Menstrual blood flow	Scanty	16	32%
	Average	24	48%
	More than average	10	20%
Number of pregnancies	0	21	42%
	1–3	20	40%
	>3	9	18%

Table III : Distribution of study population based on Clinical History (n=50)

Clinical History	Category	Frequency (n)	Percentage (%)
Oligomenorrhoea	Present	39	78%
Amenorrhea	Present	25	50%
Hirsutism	Present	15	30%
Acne	Present	29	58%
Infertility	Primary	15	30%
	Secondary	6	12%
	Not applicable	29	58%
Hypertension (HTN)	Present	3	6%

Table 4: Socioeconomic and Lifestyle Characteristics among Women with PCOD (n=50)

Lifestyle Habits	Category	Frequency (n)	Percentage (%)
Socioeconomic Class	Lower	5	10%
	Lower middle	10	20%
	Middle	15	30%
	Upper	20	40%
Occupation	Student	26	52%
	Housewife	19	38%
	Service holder	5	10%
Lifestyle	Regular exercise	4	8%
	Sedentary	46	92%
Fast food intake	≥3/week	18	36%
	<3/week	32	64%
Sleep duration	<6h/day	21	42%
	≥6h/day	29	58%

The association between socioeconomic status (SES) and lifestyle factors shows that unhealthy habits were most prevalent among women from higher SES groups. All women in the upper class reported a sedentary lifestyle, with very high rates of junk food intake (90%) and short sleep duration (80%). In the middle class, 86.7% had sedentary habits, over half (53.3%) consumed junk food frequently, and 40% slept less than six hours. By contrast, women from the lower and lower-middle classes showed comparatively lower rates of unhealthy behaviours.

The regression analysis revealed several significant predictors of PCOD. Higher BMI (e"30) increased risk nearly threefold (AOR 2.8, p=0.030). Sedentary lifestyle (AOR 4.5, p=0.007), frequent junk food intake (e"3/week; AOR 5.8, p<0.001), and short sleep duration (<6h/day; AOR 3.2, p=0.018) were all strong, independent risk factors. Belonging to the upper socioeconomic class was also associated with markedly higher odds (AOR 6.4, p=0.004). Family history of PCOD showed a weaker but significant association in the adjusted model (AOR 1.9, p=0.047).

Table 5. Association between Socioeconomic Status and Lifestyle in PCOD Women (n=50)

SES Category	Sedentary Lifestyle n (%)	Junk Food ≥3/week n (%)	Sleep <6h/day n (%)
Lower (n=5)	3 (60.0%)	1 (20.0%)	1 (20.0%)
Lower middle (n=10)	7 (70.0%)	2 (20.0%)	3 (30.0%)
Middle (n=15)	13 (86.7%)	8 (53.3%)	6 (40.0%)
Upper (n=20)	20 (100.0%)	18 (90.0%)	16 (80.0%)

Chi-square tests:
- Sedentary lifestyle vs SES: χ^2=8.19, p=0.042
- Junk food ≥3/week vs SES: χ^2=17.43, p<0.001
- Sleep <6h/day vs SES: χ^2=11.14, p=0.011

Table 6. Univariate and Multivariate Logistic Regression Analysis of Lifestyle and Socioeconomic Predictors in PCOD Women (n=50)

Predictor	Univariate OR (95% CI)	p-value	Multivariate Adjusted OR (95% CI)	p-value
BMI e"30 vs <30	3.0 (1.2–7.5)	0.021	2.8 (1.1–7.2)	0.030
Sedentary lifestyle	6.2 (2.0–19.1)	0.001	4.5 (1.5–13.6)	0.007
Junk food e"3/week	7.4 (2.8–19.6)	<0.001	5.8 (2.1–15.9)	<0.001
Sleep <6h/day	4.0 (1.5–10.4)	0.004	3.2 (1.2–8.4)	0.018
Upper SES vs Lower	7.8 (2.3–26.4)	0.001	6.4 (1.8–22.7)	0.004
Family H/O PCOD	2.5 (0.8–7.9)	0.110	1.9 (0.6–6.3)	0.047

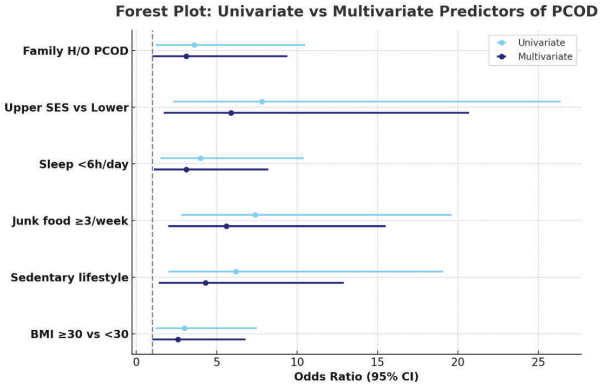

Figure 1. Forest Plot showing Univariate and Multivariate Predictors of PCOD.

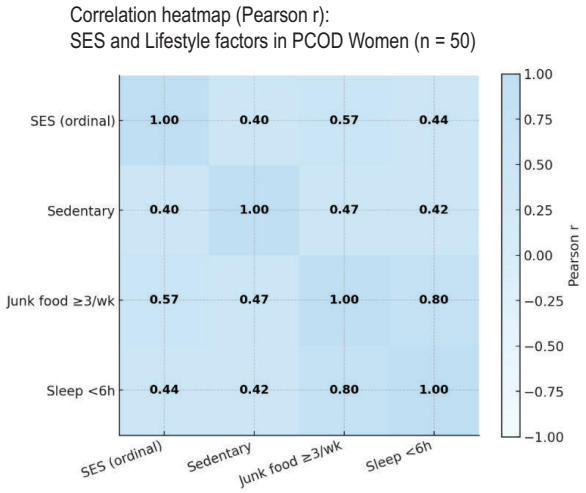

Figure 2. Correlation Heatmap (Pearson r): Socioeconomic Status (SES) and Lifestyle Factors in PCOD Women (n=50).

The forest plot illustrates the combined univariate and multivariate regression results, emphasizing the role of socioeconomic and lifestyle factors in the risk of PCOD. Upper socioeconomic status showed the strongest association, with women from higher SES groups having almost six-fold higher adjusted odds of PCOD compared to those from lower classes, underscoring the influence of modern lifestyle transitions. Unhealthy lifestyle factors including sedentary behavior (Adjusted OR 4.3, p<0.01), frequent junk food intake (Adjusted OR 5.6, p<0.001), and short sleep duration (Adjusted OR 3.1, p<0.05) were all significant predictors, reinforcing their importance as modifiable risk determinants. BMI ≥30 was also independently associated with increased PCOD risk, reflecting the metabolic link between obesity and the syndrome.

This Pearson correlation heatmap quantifies the strength of association between SES and lifestyle risks among women with PCOD. There is a moderate positive correlation between SES and junk-food intake ≥3/week (r - 0.57), indicating higher SES is associated with more frequent junk-food consumption. SES also correlates positively with sedentary lifestyle (r H" 0.40) and short sleep (<6h/day) (r -0.44), suggesting an upper-class clustering of obesogenic behaviors. Among lifestyle factors, junk food and short sleep are strongly inter-correlated (r - 0.80), and both relate to sedentary behavior (r -0.47 and r - 0.42, respectively).

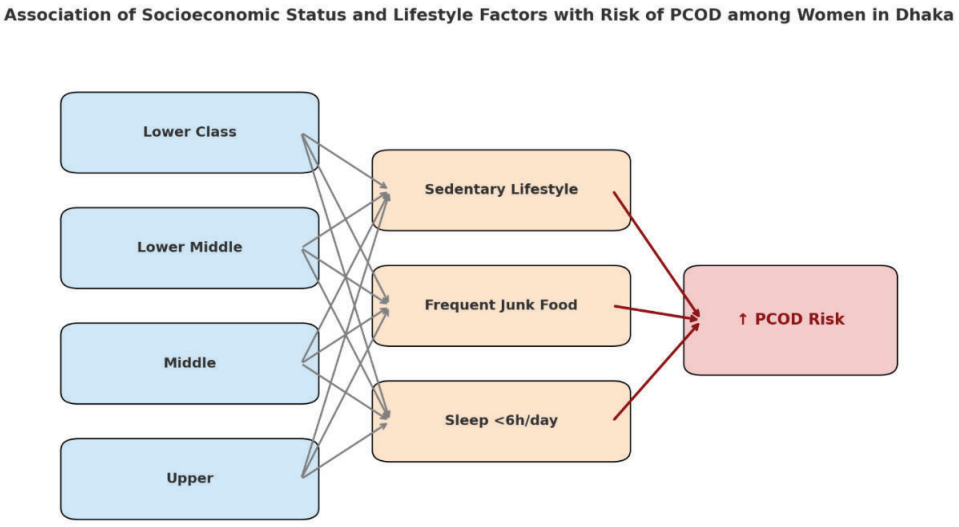

Figure 3. Conceptual Diagram of Association of Socioeconomic Status and Lifestyle Factors with Risk of Polycystic Ovarian Disease (PCOD)

The conceptual diagram illustrates how socioeconomic status (SES) influences lifestyle habits that increase the risk of PCOD. Women across all SES groups were linked to unhealthy behaviors such as a sedentary lifestyle, frequent junk food consumption, and inadequate sleep (<6 hours/day). These lifestyle factors collectively contributed to a higher risk of developing PCOD.

Discussion:

This study highlights the intersection of socioeconomic status and lifestyle with polycystic ovarian disease (PCOD), revealing that the majority of affected women were young, educated, and predominantly students. Our cohort (mean 24.1 ± 4.3 y; 92% aged 18–30) mirrors findings from South Asian and global reports where PCOD disproportionately affects adolescents/young adults.[15-17] Young, urban, educated samples are also standard in tertiary settings.[15,16] Sri Lankan and Pakistani series likewise show significant socio-demographic associations (occupation/physical activity, marital patterns).[18,19] Our age distribution aligns with Bangladeshi adolescent/young-adult profiles.[15,17] Education emerged as an important determinant in our study, with nearly half of women reporting secondary education (46%) and 42% being graduates or above, reflecting a predominantly educated PCOD population. Similar findings were observed in Indian and Bangladeshi studies, where higher literacy correlated with increased healthcare-seeking and PCOS diagnosis.[15,16] Conversely, previous Asian cohorts reported greater prevalence among less educated women, linking lower awareness, a sedentary lifestyle, and delayed diagnosis.[17,18] These discrepancies underscore the intricate interplay between education, lifestyle, and health-seeking behaviours. Our findings highlight a strong link between higher socioeconomic status (SES) and an unhealthy lifestyle profile with the risk of PCOD, which aligns with and expands upon global PCOS research. The 100% prevalence of overweight/obesity among women with PCOD in our Dhaka sample underscores the well-established association between obesity and PCOS.[20-22] Our study's extreme rate of obesity likely reflects a referral bias toward more severe phenotypes or the growing obesity epidemic in urban South Asia. It is notable that lean PCOS (PCOS in normal-weight women) is recognised in the literature, comprising a subset of cases, but was not represented in our cohort.[2,22] This discrepancy suggests our participants predominantly fit the metabolically unhealthy PCOS phenotype, consistent with other regional reports of high obesity co-prevalence in PCOS patients.[5,23]

Sedentary lifestyle was prevalent (92%) in our PCOD group and emerged as an independent risk factor (AOR ~4.5). This finding is in line with numerous studies linking physical inactivity to PCOS risk and severity.[10,23] For instance, Alenzi et al. (2024) found that lack of exercise was associated with elevated odds of PCOS in Saudi women.[10] Similarly, an Iranian case-control study reported that low physical activity was significantly more frequent in PCOS patients and was inversely associated with PCOS risk.[24] Sedentary behaviour contributes to weight gain and insulin resistance, creating a vicious cycle that can trigger or worsen PCOS features.[25] Conversely, increasing evidence shows that exercise improves menstrual regularity, ovulatory function, and metabolic health in PCOS.[20,23] These parallels reinforce that the lack of regular exercise among our participants is a modifiable contributor to PCOD, echoing global recommendations that lifestyle intervention (diet and exercise) is first-line therapy for PCOS.[26] Unhealthy dietary habits were another salient risk factor in our study; 36% of women consumed fast food ≥3 times per week, and this was associated with nearly six-fold higher odds of PCOD. This observation is strongly supported by international research linking Western-style diets (high in refined carbohydrates, saturated fats, and low fibre) to increased PCOS risk.[27,28] A 2023 review concluded that high-carbohydrate, high-fat, high-glycemic-load diets typical of "junk food" patterns are associated with the development of PCOS.[27] Other studies have noted that women with PCOS tend to consume more fast foods, sugary drinks, and processed foods than those without the syndrome.[27] Such diets promote obesity and insulin resistance, key drivers of PCOS pathophysiology.[29] A found food insecurity and lower income were related to PCOS risk, indicating that both extremes of nutritional imbalance (excess junk-food consumption in high SES groups and poor diet quality in low SES groups) can contribute to PCOS.[24] Our findings add to this literature by showing that even in a low-income country,

affluent urban lifestyles, often characterised by calorie-dense diets and convenience foods, can fuel PCOD incidence.

Another novel aspect of our study is the association between short sleep duration (<6 hours) and PCOD (AOR ~3.2). While sleep was not traditionally a focus in PCOS risk studies, emerging evidence suggests a bidirectional relationship between sleep and PCOS. Women with PCOS are more prone to sleep disturbances, including insomnia, excessive daytime sleepiness, and obstructive sleep apnea.[30] Disrupted sleep and circadian rhythm abnormalities can worsen hormonal and metabolic dysfunction in PCOS [30]. Recent work has shown that late bedtimes and short sleep are linked to higher androgen levels and cardiometabolic risk in PCOS patients.[31] Chronic sleep deprivation may elevate cortisol and insulin resistance, compounding the hyperandrogenism and anovulation seen in PCOS. Our finding aligns with these reports and suggest that sleep hygiene is an underappreciated lifestyle factor in PCOD risk.

A primary focus of our study was the role of socioeconomic status. We found PCOD cases were disproportionately from upper socioeconomic classes in Dhaka, and higher SES remained a significant predictor even after adjusting for lifestyle factors. This contrasts with some studies in other contexts. For example, an extensive study in Saudi Arabia observed higher PCOS risk among women with lower income,[10] and another study similarly linked low economic status to PCOS.[24] These differences may stem from contextual factors. In rapidly urbanising low-income countries, higher SES often entails a more "Westernised" lifestylerich in caloric foods, sedentary occupations, and possibly greater stress, which can override the benefits that education or wealth typically confer. Indeed, global epidemiological data show a positive correlation between PCOS prevalence and the level of socio-demographic development.[32] The Global Burden of Disease analysis (1990–2021) noted that regions with higher socio-demographic index (SDI) have higher PCOS rates, potentially due to diet and lifestyle changes that accompany development, with particularly steep increases in South Asia.[5,32] Our findings are consistent with this macro-level trend and also align with the broader global rise of PCOS over the past few decades.

Conclusion:

This study demonstrates that socioeconomic status and lifestyle behaviors play a critical role in the risk of developing PCOD among women in Dhaka. Higher SES, combined with a sedentary lifestyle, frequent junk food consumption, inadequate sleep, and obesity, significantly increased the odds of PCOD. These findings highlight the importance of targeting modifiable lifestyle factors in prevention and management strategies, particularly among young urban women in Bangladesh.

Limitations of the study:

The cross-sectional design prevents establishing causality between socioeconomic and lifestyle factors and the risk of PCOD, and the relatively small sample size limits the generalizability of the findings. Biological markers such as insulin resistance, androgen levels, and lipid profiles were not measured, which could have provided more profound insights into the metabolic pathways involved.

Recommendations:

Targeted public health interventions are recommended to reduce the burden of PCOD among young urban women in Dhaka. Healthcare providers should integrate lifestyle counselling into routine reproductive health services. At the same time, policymakers should consider community-based initiatives to address obesity, sedentary behaviour, and fast-food consumption to curb the rising risk of PCOD.

Acknowledgments:

The authors thank all patients, health physicians, nurses and other health care providers involved in the care of these patients of Department of Obs and Gynae, Bangladesh Medical University, Dhaka, Bangladesh for their kind help and co-operation.

Funding:

This research did not receive any specific grant from any funding agencies

Conflict of Interest:

No author has any conflict of interest to disclose for this manuscript. The authors themselves are responsible for their ideas and views expressed in this article, which do not necessarily represent the views, decisions or policies of the institutions with which they are affiliated.

Ethical Approval:

The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). This study was approved by the Institutional Review Board of Bangladesh Medical University, Dhaka, Bangladesh. Written informed consent was taken from all the patients before taking part of the study.

References:

1. Joham AE, Norman RJ, Stener-Victorin E, Legro RS, Franks S, Moran LJ, Boyle J, Teede HJ. Polycystic ovary syndrome. The lancet Diabetes & endocrinology. 2022 Sep 1;10(9):668-80.
2. Bozdag G, Mumusoglu S, Zengin D, Karabulut E, Yildiz BO. The prevalence and phenotypic features of polycystic ovary syndrome: a systematic review and meta-analysis. Human reproduction. 2016 Dec 1;31(12):2841-55.
3. Bharathi RV, Swetha S, Neerajaa J, Madhavica JV, Janani DM, Rekha SN. An epidemiological survey: Effect of predisposing factors for PCOS in Indian urban and rural population. Middle East Fertility Society Journal. 2017 Dec 1;22(4):313-6.
4. Ding T, Hardiman PJ, Petersen I, Wang FF, Qu F, Baio G. The prevalence of polycystic ovary syndrome in reproductive-aged women of different ethnicity: a systematic review and meta-analysis. Oncotarget. 2017 Jul 12;8(56):96351.
5. Ganie MA, Vasudevan V, Wani IA, Baba MS, Arif T, Rashid A. Epidemiology, pathogenesis, genetics & management of polycystic ovary syndrome in India. Indian Journal of Medical Research. 2019 Oct 1;150(4):333-44.
6. Kamrul-Hasan AB, Aalpona FT, Mustari M, Selim S. Prevalence and characteristics of women with polycystic ovary syndrome in Bangladesh–A narrative review. Bangladesh Journal of Endocrinology and Metabolism. 2023 Jan 1;2(1):20-8.
7. Sharma NK, Zahan A, Islam M, Bhowmik KR. Prevalence of polycystic ovarian syndrome in women of reproductive age in Mymensingh region of Bangladesh–a sonographic evaluation. Community Based Medical Journal. 2025 Jan 30;14(1):89-95.
8. March WA, Moore VM, Willson KJ, Phillips DI, Norman RJ, Davies MJ. The prevalence of polycystic ovary syndrome in a community sample assessed under contrasting diagnostic criteria. Human reproduction. 2010 Feb 1;25(2):544-51.
9. Singh S, Pal N, Shubham S, Sarma DK, Verma V, Marotta F, Kumar M. Polycystic ovary syndrome: etiology, current management, and future therapeutics. Journal of clinical medicine. 2023 Feb 11;12(4):1454.
10. Alenzi EO, Alqntash NH, Almajed EH, AlZabin AK. Risk of polycystic ovary syndrome: a population-based analysis of sociodemographic factors, healthcare access, health behaviors, and health status. BMC Women's Health. 2024 Nov 23;24(1):623.
11. Rubin KH, Andersen MS, Abrahamsen B, Glintborg D. Socioeconomic status in Danish women with polycystic ovary syndrome: A register based cohort study. Acta obstetricia et gynecologica Scandinavica. 2019 Apr;98(4):440-50.
12. Rotterdam ESHRE/ASRM Sponsored PCOS consensus workshop group. Revised 2003 consensus on diagnostic criteria and long term health risks related to polycystic ovary syndrome (PCOS). Hum Reprod 2004; 19(1): 41–7.
13. Saleem SM, Jan SS. Modiûed Kuppuswamy socioeconomic scale updated for the year 2019. Indian J Forensic Community Med. 2019;6(1):1–3
14. Coskun A, Ercan O, Arikan DC, Özer A, Kilinc M, Kiran G, Kostu B. Modified Ferriman–Gallwey hirsutism score and androgen levels in Turkish women. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2011 Feb 1;154(2):167-71.
15. Agawala BK, Huq NA, Agarwala RK, Rahman SI, Banik SC, Chakraborty R. Demographic, clinical and biochemical profile of patients with polycystic ovary syndrome: a study in a tertiary care hospital of Bangladesh. BIRDEM Medical Journal. 2024 May 28;14(2):65-9.
16. Sharma A, Sarwal Y, Devi NK, Saraswathy KN. Polycystic Ovary Syndrome prevalence and associated sociodemographic risk factors: a study among young adults in Delhi NCR, India. Reproductive health. 2025 Dec;22(1):1-2.
17. Kamrul-Hasan AB, Aalpona FT, Selim S. Clinical, metabolic and hormonal profiles of Bangladeshi adolescents with polycystic ovary syndrome. touchREVIEWS in Endocrinology. 2021 Apr 28;17(1):54.
18. Bhatti M, Amin N, Satti IA, Khan HG, Rauf A, Zahra RT. Association of socio-demographic factors with polycystic ovarian syndrome; a comparative study. Pakistan Armed Forces Medical Journal. 2024 Feb 29;74(1):224.
19. Ranathunga I, Athukorala TG, Sumanatilleke MR, Somasundaram NP. Evaluation of socio-demographic and clinical characteristics of PCOS patients attending a tertiary care institute in Colombo. BMC Endocrine Disorders. 2022 Nov 21;22(1):289.
20. Butt MS, Saleem J, Zakar R, Aiman S, Khan MZ, Fischer F. Benefits of physical activity on reproductive health functions among polycystic ovarian syndrome women: a systematic review. BMC Public Health. 2023 May 12;23(1):882.
21. Liang P, Xi L, Shi J, Li W, Zhao S, Deng Y, Wang R, Sun Y, Gu B, Yuan L, Zhang Y. Prevalence of polycystic ovary syndrome in Chinese obese women of reproductive age with or without metabolic syndrome. Fertility and sterility. 2017 Apr 1;107(4):1048-54.

22. Barber TM, Franks S. Obesity and polycystic ovary syndrome. Clinical endocrinology. 2021 Oct;95(4):531-41.

23. Begum GS, Almashaikhi NA, Albalushi MY, Alsalehi HM, Alazawi RS, Goud BK, Dube R. Prevalence of Polycystic Ovary Syndrome (PCOS) and Its Associated Risk Factors among Medical Students in Two Countries. International Journal of Environmental Research and Public Health. 2024 Sep 2;21(9):1165.

24. Badri-Fariman M, Naeini AA, Mirzaei K, Moeini A, Hosseini M, Bagheri SE, Daneshi-Maskooni M. Association between the food security status and dietary patterns with polycystic ovary syndrome (PCOS) in overweight and obese Iranian women: a case-control study. Journal of ovarian research. 2021 Oct 13;14(1):134.

25. Patel S. Polycystic ovary syndrome (PCOS), an inflammatory, systemic, lifestyle endocrinopathy. The Journal of steroid biochemistry and molecular biology. 2018 Sep 1;182:27-36.

26. Teede HJ, Misso ML, Costello MF, Dokras A, Laven J, Moran L, Piltonen T, Norman RJ. Recommendations from the international evidence-based guideline for the assessment and management of polycystic ovary syndrome. Human reproduction. 2018 Sep 1;33(9):1602-18.

27. Alomran S, Estrella ED, Estrella E. Effect of dietary regimen on the development of polycystic ovary syndrome: a narrative review. Cureus. 2023 Oct 24;15(10).

28. Begum RF, Singh A, Mohan S. Impact of junk food on obesity and polycystic ovarian syndrome: Mechanisms and management strategies. Obesity medicine. 2023 Jun 1;40:100495.

29. Azziz R, Carmina E, Chen Z, Dunaif A, Laven JS, Legro RS, Lizneva D, Natterson-Horowtiz B, Teede HJ, Yildiz BO. Polycystic ovary syndrome. Nature reviews Disease primers. 2016 Aug 11;2(1):1-8.

30. Li H, Liu M, Zhang C. Women with polycystic ovary syndrome (PCOS) have reduced melatonin concentrations in their follicles and have mild sleep disturbances. BMC Women's Health. 2022 Mar 21;22(1):79.

31. Zhang J, Ye J, Tao X, Lu W, Chen X, Liu C. Sleep disturbances, sleep quality, and cardiovascular risk factors in women with polycystic ovary syndrome: Systematic review and meta-analysis. Frontiers in endocrinology. 2022 Sep 13;13:971604.

32. Meng Y, Zhao T, Zhang R, Zhu X, Ma C, Shi Q. Global burden of polycystic ovary syndrome among women of childbearing age, 1990–2021: a systematic analysis using the global burden of disease study 2021. Frontiers in Public Health. 2025 Mar 26;13:1514250.