

# Impact of Lifestyle Modifications on Morbidities Associated With PCOS

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**Abstract:** *Introduction:* PCOS is the most prevalent endocrine condition affecting women of reproductive age, affecting 5-10% of women globally. It is characterised by a combination of clinical or biochemical hyperandrogenism (HA), chronic anovulation, and polycystic ovaries. It is commonly linked to insulin resistance (IR) and obesity. It is likely polygenic and/or multifactorial in nature. *Objectives:* The aim of this study was to systematically review the efficacy of long term (6 to 9 months) lifestyle modifications in the form of dietary modifications, weight loss interventions and psychosocial behavioural changes. *Materials and Methods:* A Observational study in Department of Obstetrics & Gynaecology, Moti Lal Nehru Medical College, Prayagraj. *Conclusion:* The primary aim of the present study was to review and observe the efficacy of long-term (6 to 9 months) lifestyle changes in the form of dietary modifications, weight-loss interventions and psychosocial behavioural changes.

**Keywords:** PCOS, lifestyle modifications, dietary changes, weight loss, psychosocial behavior

## 1. Introduction

PCOS is the most prevalent endocrine condition affecting women of reproductive age, affecting 5-10% of women globally. It is characterised by a combination of clinical or biochemical hyperandrogenism (HA), chronic anovulation, and polycystic ovaries. It is commonly linked to insulin resistance (IR) and obesity. It is likely polygenic and/or multifactorial in nature. PCOS is the most prevalent endocrine condition affecting women of reproductive age, affecting 5-10% of women globally. This common condition appears to

The specific cause of PCOS is unknown. However, genetics and family history appear to have a role. Lifestyle Modifications (LSM) are regarded as an effective and safe first-line therapeutic strategy. Changing additional lifestyle factors, such as alcohol use, psychological stresses, and smoking, is also essential for the long-term management of PCOS.

### Inclusion Criteria

- Age of 18-45 years.
- Women were coming with PCOS-like symptoms.

### Exclusion Criteria

- Patients below 18 years and above 45 years.
- Patients with any other chronic metabolic disease.
- Not willing participate in the study

## 3. Tables and Results

Among all the patients [n=110], the majority of the patients were in the age group of 23-27 years [60(54.55%)], and 18-22 years [41(37.27%)].

Before lifestyle and psychosocial modifications, most of the patients [89(80.91%)] had a Sedentary lifestyle, while after modifications, most of the population started doing regular exercise and started having active lifestyle [77(70.00%)].

Statistically, a significant difference [p<0.0001\*] was observed

be a complex genetic feature that is inherited. It is characterised by a combination of clinical or biochemical hyperandrogenism (HA), chronic anovulation, and polycystic ovaries. It is commonly linked to insulin resistance (IR) and obesity. Due to its high prevalence and probable reproductive, metabolic, and cardiovascular effects, PCOS draws substantial attention. It is the leading cause of hyperandrogenism (HA), hirsutism, and anovulatory infertility. Stein and Leventhal described the link between amenorrhea, bilateral polycystic ovaries, and obesity for the first time in 1935. It is likely polygenic and/or multifactorial in nature. <sup>[1]</sup>

## 2. Materials and Methods

Study Area: Department of Obstetrics & Gynaecology, Moti Lal Nehru Medical College, Prayagraj.

Study Population: All women came with PCOS-like symptoms.

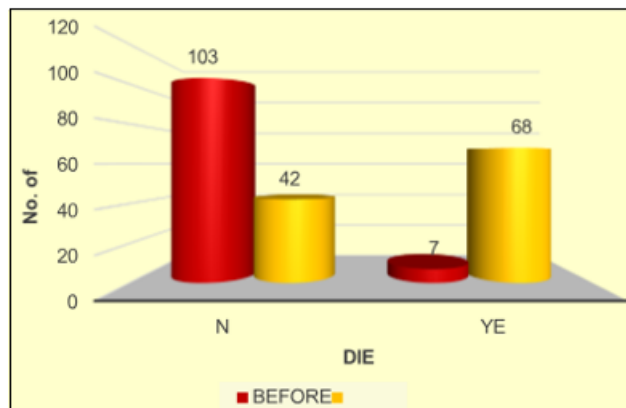
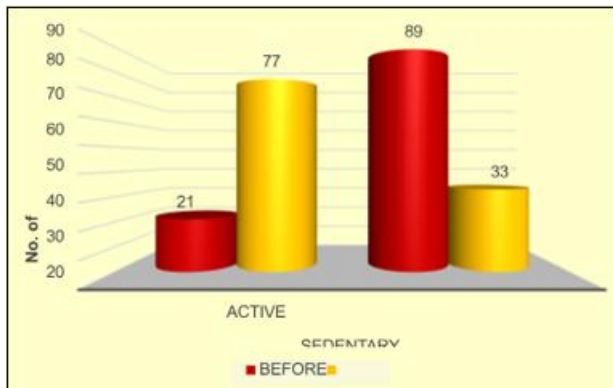
Study Design: Observational study.

Study duration: 1 year

Sample Size- 110

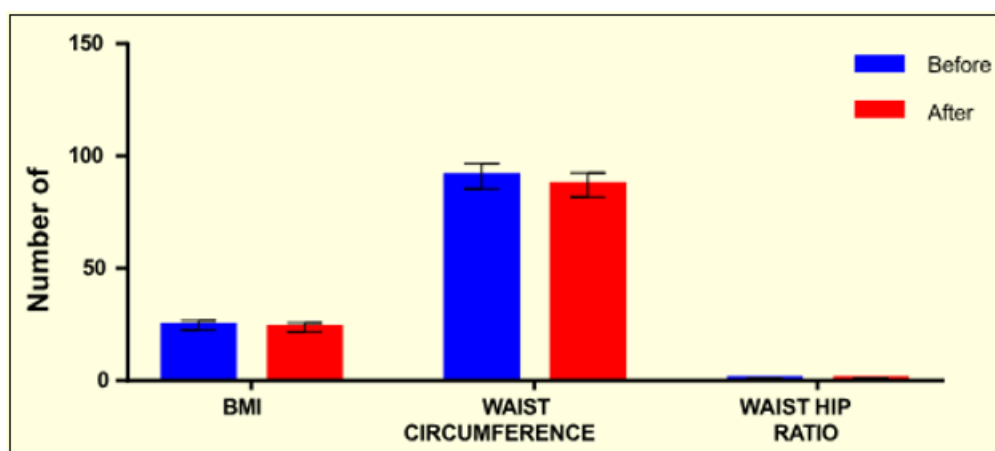
Among all the patients, majority belonged to lower class [60(54.55%)], and rest were middle class [42(38.18%)] and higher class [8(7.27%)].





Before lifestyle modifications, the majority of them were not able to have a balanced diet [103(93.64%)], while after modifications, most of them [68(61.82%)] started to have a balanced diet. This difference was statistically significant.

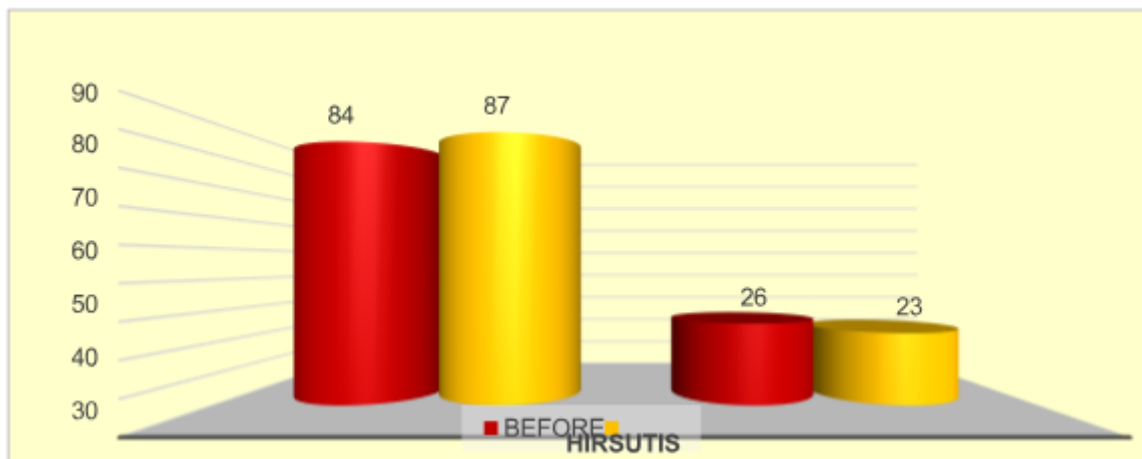
Before enrolling in the study, the mean BMI, waist circumference and waist-hip ratio were [24.56±2.08, 90.96±5.60 and 0.89±0.04], respectively. After enrollment patient was put on balanced diet, there was a significant decrease in all the measurements.



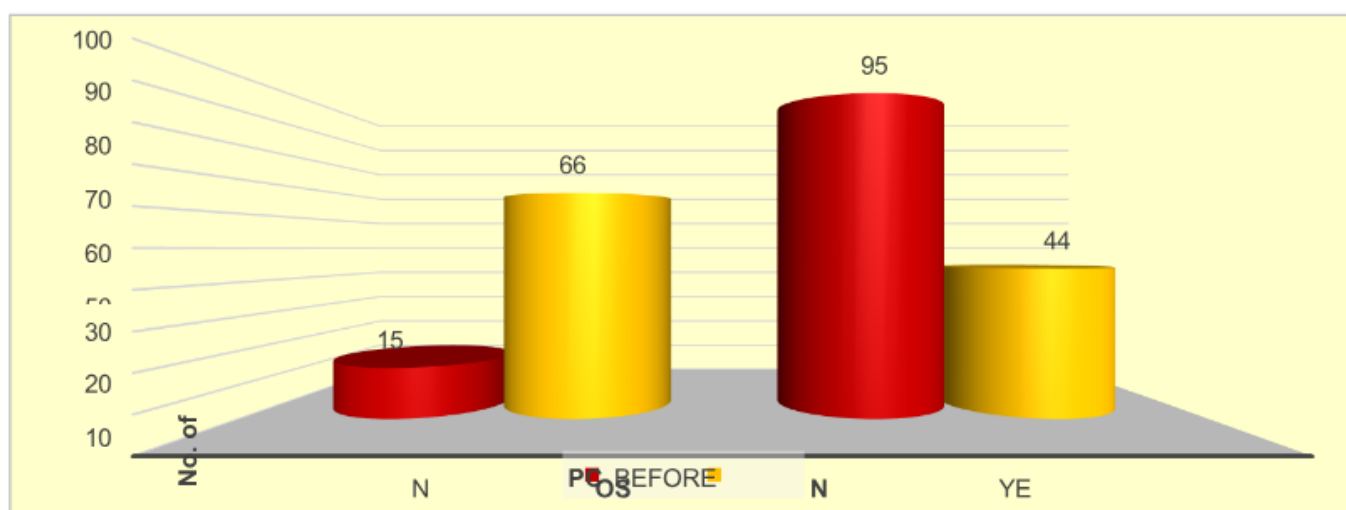
Before lifestyle modifications, most patients [93(84.55%)] had irregular menstrual cycles. After modifications, the number of patients with irregular menstrual cycles decreased [24(21.82%)]. A significant difference was observed among patients before and after modifications in the menstrual cycle



This shows before lifestyle modifications, [26(23.64%)] had hirsutism while after modifications, only slight reduction in hirsutism [23(20.91%)] and this difference was not significant as one hair cycle ranges from 6 months to 1 year, this study not able to conclude effect on hirsutism. Further, long follow-up studies needed to make it conclusive.



Before lifestyle and psychosocial modifications the majority of patients had Polycystic Ovarian Syndrome (PCOS) morphology on USG [95(86.36%)]. After modifications, most of the patients had no PCOS morphology on USG [66(60.00%)]. Statistically, a significant difference was observed [ $p < 0.0001^*$ ].



#### 4. Discussion

The present study represents all the female patients [ $n=110$ ]; the majority of the patients were in the age group of 23-27 years [60(54.55%)] and 18-22 years [41(37.27%)]. According to Rotterdam criteria, the prevalence of PCOS was 22.5%, while according to Androgen Excess Society standards, it was 10.7%. According to Rotterdam criteria, 71.8 per cent of PCOS cases were non-obese. The most common phenotype, representing 52.6% of patients, was mild PCOS (characterized by oligomenorrhea and polycystic ovaries on USG). In the present study, among all the patients, the majority belong to urban areas [60(54.55%)] and 47 (45.46%) belong to rural areas. This study represents before lifestyle modifications, most of the patients [89(80.91%)] had a Sedentary lifestyle, while after lifestyle modifications, most of the population started having an active lifestyle [77(70.00%)]. Statistically, a significant difference [ $p < 0.0001^*$ ] was observed before and after modifications in lifestyle.

#### 5. Conclusion

Based on the findings of this study, we can extrapolate that in our study the current conservative treatment emphasizes sustainable weight loss through exercise.

Modifying additional lifestyle factors, including alcohol consumption, psychosocial stressors, and smoking, are also crucial in long-term treatment of PCOS.

The main finding of this study is that the group that underwent lifestyle modifications, displayed significant improvement in menstrual and reproductive function.

However, further to enhance the accuracy of the present findings, we recommend a resilient, multicentric study with high descriptive sample size.

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