



EFFECTIVENESS OF MINDFULNESS BASED INTERVENTION ON POLYCYSTIC OVARY SYNDROME PATIENT: A RANDOMIZED CONTROLLED STUDY

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ABSTRACT The present study is an attempt to examine the efficacy of mindfulness-based stress reduction intervention on Anxiety, Depression, Quality of life and stress level of PCOS. Women with Polycystic Ovary Syndrome (PCOS) often experience mental health challenges like anxiety, depression, and low self-esteem and quality of life due to hormonal imbalances, weight gain, infertility, and body image concerns. These emotional struggles can impact their overall quality of life. Addressing these issues is crucial for improving both mental health and treatment adherence. Mindfulness practices offer effective ways to manage stress, build resilience, and enhance well-being in women with PCOS. Mindfulness practices, such as meditation, deep breathing, and body awareness, help reduce stress, a key trigger for hormonal imbalances in women with PCOS. They promote emotional resilience, improve mood, and alleviate anxiety or depression. A purposive sample of 52 patients who practice mindfulness and 52 patients who do not practice mindfulness, between age group of 18-30 yrs was taken Pre and Post experimental research. Depression, Anxiety and stress scale (DASS21), Quality of life (QOL16 items).

KEYWORDS : Mindfulness, PCOS, Anxiety, Depression, Stress, Quality of Life, MBSR

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a common hormonal and metabolic disorder affecting many women worldwide. It not only impacts physical health but also affects mental well-being, social life, and self-image. The exact cause of PCOS is still unknown, making diagnosis and treatment challenging.

PCOS symptoms include irregular periods, high levels of androgens (male hormones), and cysts on the ovaries. However, these symptoms vary greatly among individuals, leading to confusion and delayed diagnosis. Hormonal imbalances, especially high insulin and androgen levels, play a major role in the condition. Insulin resistance often leads to issues like obesity, diabetes, and heart disease.

Contributing factors include poor lifestyle habits, lack of exercise, stress, and genetics. Management usually involves healthy eating, regular physical activity, and weight control. In some cases, medications are used to regulate hormones and support fertility. While these help physically, they may not fully address emotional challenges. Stress worsens PCOS symptoms by affecting hormonal balance and increasing emotional strain. Women with PCOS are more likely to face depression and anxiety, often due to body image issues, fertility concerns, and social pressure.

Quality of life (QoL) is often reduced in women with PCOS. To manage the condition effectively, both physical and psychological aspects must be addressed for overall well-being.

Need of study

Polycystic Ovary Syndrome (PCOS) is a common gynecological and endocrine disorder affecting women of reproductive age, often starting in adolescence. It is characterized by hormonal imbalance leading to irregular periods, acne, hirsutism, acanthosis nigricans, and infertility. PCOS significantly impacts both physical and psychological health, contributing to high levels of stress, anxiety, poor quality of life, and strained relationships.

As a metabolic disorder, the first line of treatment includes lifestyle changes like weight loss, diet, and behavioral modifications, followed by medications such as insulin sensitizers and hormonal therapy when needed.

Recently, **psychological interventions** like mindfulness, meditation, deep breathing, and yoga have shown promise in improving emotional well-being in women with PCOS. **Mindfulness-Based Stress Reduction (MBSR)**, which includes practices like guided imagery and breathing exercises, helps reduce stress, anxiety, and depression. Some evidence suggests MBSR may also positively influence hormone regulation.

psychological distress and improving quality of life in women with PCOS, with the goal of enhancing overall care and support for this complex condition.

Aim

To Examine the Effect of mindfulness-based stress reduction intervention on the stress, depression, anxiety, quality of life of PCOS.

Objectives

- To determine the effect of mindfulness-based stress reduction intervention on the level of stress in patient with PCOS.
- To determine the effect of mindfulness-based stress reduction intervention on the level of depression in patient with PCOS.
- To determine the effect of mindfulness-based stress reduction intervention on the level of anxiety in patient with PCOS.
- To determine the effect of mindfulness-based stress reduction on the level of quality of life in patient with PCOS.

Hypothesis

H01: There exists significant difference between the pre intervention and post intervention scores on level of depression, anxiety, stress and quality of life of PCOS patients who practice mindfulness.

H02: There exists no significant difference between the pre intervention and post intervention scores on level of depression, anxiety, stress and quality of life of PCOS patients who do not practice mindfulness.

Method

Study Design

The study follows a pre-test and post-test Experimental Design. Participants are divided into Two group: One group receive only Pharmacotherapy and second group will receive both pharmacotherapy and mindfulness therapy.

Sample: A purposive Sample of 104 PCOS Patients will be selected. The sample is divided into two groups:

- 52 will receive pharmacotherapy
- 52 will receive pharmacotherapy +Mindfulness therapy

Tools Used:

DASS 21: A 21-item self-report questionnaire measuring the severity of depression, anxiety, and stress symptoms over the past week. Each item is scored from 0 (not at all) to 3 (most of the time).

QOL 16: A 16-item Quality of Life Scale, adapted from the original 15-item version, with an added item on independence for better relevance to chronic illness groups.

Procedure

After obtaining written permission from the Principal of Geetanjali

This study aims to assess the effectiveness of MBSR in reducing

Medical College & Hospital, 104 PCOS-diagnosed patients were selected for the study conducted between April and July 2024. Informed consent was taken, and demographic details (name, age, gender, and college type) were collected.

Participants completed the DASS-21 (to assess depression, anxiety, and stress) and a 16-item Quality of Life (QOL) questionnaire, covering physical health, psychological well-being, social relationships, and environment.

Data were compiled into a master chart and analyzed using Chi-Square Test for associations and t-Tests (paired and unpaired) to evaluate group differences.

Inclusion Criteria:

Patients included in the study met the following criteria: they provided written informed consent, were within the 18 to 30-year age range, and were diagnosed with Polycystic Ovary Syndrome (PCOS) based on the Rotterdam criteria.

Exclusion Criteria:

Subjects with any major mental illness or major physical illness were excluded from the study.

Analysis Of Data

Data will be analyzed by using Chi-square test and t-Test (Paired and Unpaired)

RESULT

In the pre-test and post-test phases conducted over a period of three months, mindfulness techniques were found to be effective in significantly reducing levels of depression, anxiety, and stress, and in improving the overall quality of life among women with Polycystic Ovary Syndrome (PCOS). Statistical analysis revealed a significant difference between the two experimental phases. In the pre-experimental phase, the results were, depression ($t = 9.75, p < 0.001$), anxiety ($t = 14.27, p < 0.001$), and stress ($t = 7.77, p < 0.001$), indicating initial phase, before applying intervention. However, in the post-experimental phase, the impact of mindfulness techniques was even more substantial. The results demonstrated highly significant reductions in depression ($t = 47.45, p < 0.001$), anxiety ($t = 50.09, p < 0.001$), and stress ($t = 42.98, p < 0.001$). These findings suggest that mindfulness practices had a powerful and sustained effect in alleviating psychological distress in women with PCOS, particularly in the post-intervention stage.

The findings of the study reveal a substantial improvement in the quality of life related to depression, anxiety, and stress following the intervention. In the pre-experimental phase, the mean and standard deviation (SD) scores for all three domains—depression, anxiety, and stress—were consistently recorded at $M = 34.21$ and $SD = 9.12$. However, in the post-experimental phase, these scores significantly increased to $M = 66.92$ and $SD = 8.30$ across all domains. This consistent upward shift in mean scores indicates a marked enhancement in participants' perceived quality of life after the intervention, reflecting the effectiveness of the treatment approach in alleviating symptoms associated with depression, anxiety, and stress.

In the control group, where only pharmacotherapy was administered and no mindfulness techniques were used, no significant improvement was observed between the pre- and post-assessment scores of depression, anxiety, and stress. In the pre-assessment phase, the t -values for depression, anxiety, and stress were $t = 14.12$ ($p < 0.001$), $t = 19.12$ ($p < 0.001$), and $t = 12.61$ ($p < 0.001$), respectively. In the post-assessment phase, the t -values remained statistically significant—depression $t = 15.18$ ($p < 0.001$), anxiety $t = 19.00$ ($p < 0.001$), and stress $t = 12.58$ ($p < 0.001$)—but showed no substantial clinical improvement. These findings suggest that while pharmacotherapy may offer some level of symptom control, it is not sufficient on its own to produce significant positive changes in quality of life. In contrast, the experimental group, which received mindfulness techniques in addition to pharmacotherapy, showed marked improvement, underscoring the potential benefit of integrating mindfulness-based approaches into treatment for more effective psychological outcomes.

In the control group, where only pharmacotherapy was provided, a slight decline in quality of life was observed across depression, anxiety, and stress. The pre-control scores were $M = 38.42$, $SD = 7.89$

for all three variables, which decreased to $M = 34.57$, $SD = 10.73$ in the post-control phase. This suggests that pharmacotherapy alone showed limited effectiveness and may not significantly improve psychological well-being without additional therapeutic support.

The current findings reveal a significantly higher prevalence of Polycystic Ovary Disorder (PCOD) among women in urban areas compared to rural regions. A notable reduction in PCOD symptoms was observed in the urban experimental group after psychological and pharmacotherapy interventions.

The results of the study also revealed a significantly higher prevalence of Polycystic Ovary Disorder (PCOD) among women from nuclear families compared to those from joint families. However, a notable reduction in PCOD symptoms was observed in the post-experimental nuclear family group, following the application of combined psychological and pharmacotherapy interventions.

This study demonstrates that Mindfulness-Based Stress Reduction (MBSR) significantly improves psychological well-being and quality of life in women with PCOS compared to pharmacotherapy alone. It also highlights higher PCOS prevalence in urban areas and nuclear families, suggesting the need for targeted public health interventions. Overall, MBSR proves to be an effective complementary approach to enhance PCOS treatment outcomes.

DISCUSSION

The present study focused on the assessment of pre-test and post-test outcomes of mindfulness techniques used to reduce stress, depression, and anxiety, and to improve the quality of life in individuals with Polycystic Ovary Syndrome (PCOS).

The study found a significant improvement in psychological well-being in the experimental group following mindfulness-based intervention. Participants showed sustained reductions in stress, anxiety, and depression from pre-test to post-test and 3-month follow-up. These results suggest that mindfulness helps improve emotional regulation, self-awareness, and reduces rumination, addressing psychological distress linked to PCOS and hormonal imbalances.

Mindfulness practice led to a significant improvement in quality of life, suggesting benefits beyond symptom relief. By promoting acceptance, self-compassion, and present-moment awareness, it enhanced coping and daily functioning. These findings support existing research on MBSR's effectiveness in managing the psychological burden of chronic conditions. For PCOS, which involves both physical and emotional challenges, mindfulness emerges as a valuable adjunctive therapy addressing both physiological and psychological needs.

The control group, which received only pharmacological treatment, showed no statistically significant changes across pre-test, post-test, and follow-up, indicating that pharmacotherapy alone may be insufficient to improve stress, anxiety, depression, or quality of life in women with PCOS over the short term. Research by Pehlivan et al. (2023) suggests that psychological interventions, especially theory-guided group therapies, may help reduce body image concerns in gynecological conditions, though further studies are needed to determine optimal duration and therapeutic methods.

The lack of significant psychological improvement in the control group supports evidence that pharmacotherapy alone, while helpful for symptom control, does not fully address the biopsychosocial complexities of PCOS. Issues like body image, infertility distress, and hormonal imbalance require interventions that go beyond medication to target underlying emotional and cognitive factors.

Table 1 illustrates the pre- and post-intervention mean scores, standard deviations (SD), t -value, and p -value for measures of depression and quality of life among PCOS patients in Group B, who received both psychotherapy and pharmacotherapy. The results indicated a significant reduction in depression levels and a notable improvement in quality of life following the intervention. Specifically, the t -test revealed a highly significant difference between pre- and post-treatment scores, suggesting that the integrated approach of psychotherapy and pharmacotherapy was effective in alleviating psychological distress and enhancing overall well-being in women with PCOS.

Women with PCOS often face hormonal imbalances, infertility, and body image issues, contributing to depression, anxiety, and low self-esteem. While pharmacotherapy addresses biological symptoms, psychotherapy—particularly mindfulness-based approaches—targets emotional and cognitive distress, improving self-perception and resilience, leading to better body image and quality of life.

Deeks (2010) studied mood disorder prevalence in women with PCOS, showing higher anxiety and depression rates, especially among those with infertility, highlighting the psychological impact of the condition. Table 2 presents pre- and post-intervention data for Group B (pharmacotherapy + psychotherapy), showing a significant reduction in anxiety and a notable improvement in quality of life. The large t -value indicates a strong treatment effect, supporting the effectiveness of a multidisciplinary approach for managing PCOS. As noted by Deeks et al. (2010), while anxiety is highly prevalent in women with PCOS, it is often underdiagnosed compared to depression.

Table No. 3 presents the mean, standard deviation (SD), t -value, and p -value for the pre- and post-intervention scores of participants in Group B, which included PCOS patients undergoing both pharmacotherapy and psychotherapy. The results of the paired samples t -test revealed a statistically significant difference between the pre- and post-intervention scores in relation to stress levels and quality of life. This significant improvement suggests that the combined treatment approach effectively reduced stress and enhanced the overall quality of life in women with PCOS. The findings further support the therapeutic value of integrating psychological interventions alongside pharmacological management in addressing the multifaceted impact of PCOS.

The study findings for Group B (pharmacotherapy + psychotherapy) showed a significant reduction in anxiety, depression, and stress, along with a notable improvement in quality-of-life post-treatment. This combined approach effectively enhanced psychological well-being and daily functioning in women with PCOS. As symptoms decreased, participants reported better relationships and greater emotional control. Saeid Ghare Naz et al. (2020) emphasized the importance of interventions to improve QoL and reduce the psychological burden of PCOS, especially in adolescence.

CONCLUSIONS

This study aims to assess the effectiveness of Mindfulness-Based Stress Reduction (MBSR) on anxiety, depression, stress, and quality of life in women with PCOS. Given the condition's biopsychosocial impact, integrating mindfulness as a complementary, non-pharmacological approach is timely and relevant. Using validated tools (DASS-21 and QOL-16) in a pre-post design, the study expects to show significant psychological improvement in the intervention group. The findings may support MBSR as a low-cost, sustainable strategy for enhancing mental health and overall well-being in PCOS management.

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