



AWARENESS OF POLYCYSTIC OVARIAN SYNDROME AND ITS LIFESTYLE MODIFICATION IN WOMEN OF RURAL POPULATION

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Abstract

Introduction: Polycystic Ovarian Syndrome (PCOS) is a versatile clinical condition affecting 6%-10% of fecund women, having a notable adolescent predominance. Defined by disturbances in metabolism, endocrine function, and reproductive processes, PCOS stands as a primary factor contributing to infertility, comorbidities linked to obesity, and increased pregnancy-related risks. Lifestyle modification, focusing on calorie restriction, physical activity, and dietary changes, serves as the first-line therapy, demonstrating improvements in metabolic and reproductive aspects. However, adherence to these modifications poses challenges. This article delves in the complex landscape of PCOS, emphasizing the crucial role of physiotherapists in implementing effective lifestyle interventions and shedding light on the interplay between exercise, insulin sensitivity, and reproductive function.

Method

This study, conducted at Krishna Vishwa Vidyapeeth 'Deemed to be University' Karad, assessed awareness of PCOS and lifestyle modifications among rural women aged 18-35. Ethical clearance was obtained, and participants provided written consent. A validated questionnaire covered demographics, PCOS perceptions, information sources, symptom awareness, emotions, and understanding of a physiotherapist's role in exercise recommendations.

Results

The research findings elucidate that a significant portion of individuals, amounting to 53%, lack awareness of the term "PCOS," while 20% of women primarily rely on doctors for information. Moreover, a notable 54% of individuals lack information altogether, highlighting a disparity in awareness of treatment options, with a majority of 64% lacking awareness. Additionally, a substantial 52% of women demonstrate unfamiliarity with the term "lifestyle modification," and a significant 72% have not received any guidance on lifestyle changes. Furthermore, 67% of women assert lack of knowledge about the role of physiotherapists in recommending exercises for lifestyle modification. These findings underscore the pressing need for targeted efforts to enhance awareness and understanding of PCOS and its management among women.

Conclusion

It is imperative to raise awareness about polycystic ovarian syndrome (PCOS) and implement lifestyle modifications among rural women. This research underscores the urgent need to empower them with knowledge and tools to manage PCOS effectively, thereby enhancing their health and quality of life. Physiotherapists are pivotal in educating, motivating, and facilitating lifestyle changes, thereby contributing significantly to the well-being of rural women affected by PCOS. Recognizing the importance of this awareness and the role of physiotherapists can greatly address healthcare disparities in underserved populations.

Keywords

Polycystic ovarian syndrome, awareness, lifestyle modification, rural women, physiotherapist

INTRODUCTION

PCOS, or polycystic ovarian syndrome, is a multifaceted clinical condition that can result in endocrine, metabolic, and reproductive disorders. ⁽¹⁾ It is a pivotal and exceptionally prevalent obesity-related comorbidity, that manifests in women and girls who are genetically prone to its genesis. ⁽²⁾ It affects between 6%-10% of fertile women and typically appears during adolescence. ⁽²⁾ Seven to fifteen percent of women who are of reproductive age suffer from PCOS, a prevalent gynae-endocrine condition that is the primary cause of infertility. ⁽³⁾ Infertility, hyperandrogenism, menstruation dysfunction, pregnancy problems, and a higher prevalence of obesity and central obesity are all included in this multifaceted clinical presentation. ⁽¹⁾ The most prevailing PCOS linked complications include hyperinsulinemia, insulin resistance (40%) ovulatory dysfunction, polycystic ovaries, gonadotropin abnormalities, adipose tissue malfunction, difficulty to conceive and high-risk pregnancy. ⁽⁴⁾ PCOS is also reported to be associated with type II diabetes, dyslipidaemia, hypertension, cardiovascular disease, and endometrial carcinoma. ⁽⁵⁾ It is the most likely source of androgen surplus in women and leading cause of ovulatory failure. ⁽⁶⁾ Medically, the androgen excess presents as hirsutism and acne, whereas anovulation emerges as subfertility and irregular menses. ⁽⁶⁾ Furthermore, as obesity is linked with PCOS, women dealing with PCOS unsurprisingly experience mood swings and psychiatric issues to a greater extent as compared to women without PCOS. ⁽⁶⁾ Premature delivery, neonatal problems, fetal malformation, and miscarriages are among the pregnancy difficulties that are increased by PCOS. ⁽⁷⁾

PCOS has an intricate pathogenesis which is incomprehensible. Increased insulin and /or androgens combine to cause hormonal disruption. ⁽¹⁾ The pathogenesis of PCOS is significantly influenced by insulin resistance and hyperandrogenism; approximately 85% of cases—75% of lean and 95% of overweight—have insulin resistance. ⁽⁸⁾ Common characteristics of the syndrome include obesity, especially abdominal obesity, which seems to be crucial to the aetiology of the condition by fostering the emergence of insulin resistance (IR). ⁽⁷⁾ Two of the most frequent endocrine aberrations associated with PCOS are persistently high levels of luteinizing hormone (LH) and insulin resistance. ⁽⁴⁾ Even though the great majority of women have insulin resistance, evidence-based PCOS recommendations discourage routine assessment of insulin resistance. ⁽⁸⁾ In vitro and in vivo evidence provide credence to the idea that hyperinsulinemia and elevated LH collaborate to promote ovarian growth, androgen production, and the development of ovarian cysts. ⁽⁴⁾ The aetiology of PCOS involves a combination of genetic and environmental variables that cause hormonal imbalances, as well as other factors such as obesity, ovarian dysfunction, and hypothalamus pituitary abnormalities. ⁽¹⁾

Lifestyle modification is the first line therapy in PCOS, but is associated with low adherence and sustainability. ⁽⁸⁾ Calorie restriction and weight loss through physical activity not only demonstrate enhancements in metabolic and reproductive manifestations but also ameliorate mood, anxiety, and boost self-esteem and psychological well-being, while concurrently reducing signs of depression, mitigating hyperinsulinemia, and improving PCOS's hyperandrogenic and reproductive features ⁽²⁾ A diet high in PUFA or MUFA (fat), low in carbohydrates and high in protein can aid with weight loss, regulate symptoms, and prevent diabetes. ⁽⁴⁾ Clinically significant improvements in the metabolic, hyperandrogenic, and reproductive aspects of PCOS, such as the restoration of ovulation, menstrual cyclicality, and fertility, can be achieved with modest weight loss of about 5%. ⁽²⁾

Optimized physical activity coupled with dietary change complements the weight loss through lifestyle modification ⁽²⁾ Physical exercise has been shown to improve insulin sensitivity, regardless of the PCOS status or degree of insulin resistance. ⁽²⁾ Exercise training has been reported to improve menstrual periods and ovulation, as well as improve body composition in 50% of women diagnosed with PCOS. ⁽⁸⁾ Engaging in physical activity enhances insulin sensitivity through the elevation of intramyocellular triacylglycerol concentration, facilitating muscle lipid uptake, utilization, oxidation and promotes improved insulin sensitivity by enhancing blood supply to skeletal muscles. ⁽⁹⁾

In women having PCOS, aerobic exercise can play a vital role in improvement of reproductive function, that includes regularization of menstrual period and ovulation. ⁽⁸⁾ Combining aerobic and Swiss ball exercise regimens increases insulin sensitivity and disease-related hyperandrogenism in PCOS patients while also strengthening muscles, delaying the loss of lean muscle mass, and lowering fat. ⁽⁹⁾ Distinctively exercise protocols and exercise prescription when aimed to maintain a minimum of 20 h of vigorous intensity exercise over 10 -12 weeks, equating to 120 minute per week, show greater health improvements. Resistance training also offers health benefits and could be considered for women with PCOS. ⁽¹⁰⁾ Progressive resistance training (PRT) as an adjunctive therapy for PCOS concluded that PRT, or strength training, promoted improvements

in body composition and related variables, particularly IR. ⁽¹¹⁾ This article aims to explore the perception of Polycystic Ovarian Syndrome and knowledge about lifestyle modification and awareness about physiotherapists role in it.

PROCEDURE

This study aims to evaluate the level of cognizance regarding polycystic ovarian syndrome (PCOS) and its associated lifestyle modifications among women residing in rural areas. The study was conducted in Krishna Vishwa Vidyapeeth ‘Deemed to be’ University, Karad with an ethical clearance certificate approval obtained by Institutional Ethical Committee. The objective and methodology of the study were thoroughly elucidated to the participants, ensuring a comprehensive understanding of the research. Those who met the specific inclusion and exclusion criteria voluntarily provided written consent to participate in the study, indicating their agreement. Inclusion criteria with age group of 18 to 35 years old women residing in rural areas. Exclusion criteria included male and un cooperative individuals, women with age less than 18.

Official consent was obtained from the local authorities in the designated study area. The sample population was chosen based on specific criteria for inclusion and exclusion. A comprehensive explanation of the study’s purpose and methodology was provided to the potential participants. A validated questionnaire, developed by an expert in the field, was utilized in this study. To accommodate cultural variances, the questionnaire was distributed among the participants who voluntarily agreed to take part in the study. Participants were instructed to indicate their preference by selecting the most appropriate option.

The questionnaire encompasses various aspects, including demographic information, individuals’ perceptions regarding PCOS, sources of information they rely upon, their awareness about PCOS symptoms, emotions associated with PCOS, and understanding of the role of a physiotherapist in providing exercise recommendations.

RESULT

This study specifically centers on evaluating the level of awareness of PCOS and its associated lifestyle modification in women of rural population. The study was executed within geographical vicinity of Karad. The outcomes were driven by self-validated questionnaire and a rating scale for participants to mark their responses. In this study total 300 subjects were screened for eligibility based on predefined exclusion and inclusion criteria. Three hundred consents were obtained in total, and the study proceeded as intended.

DATA ANALYSIS

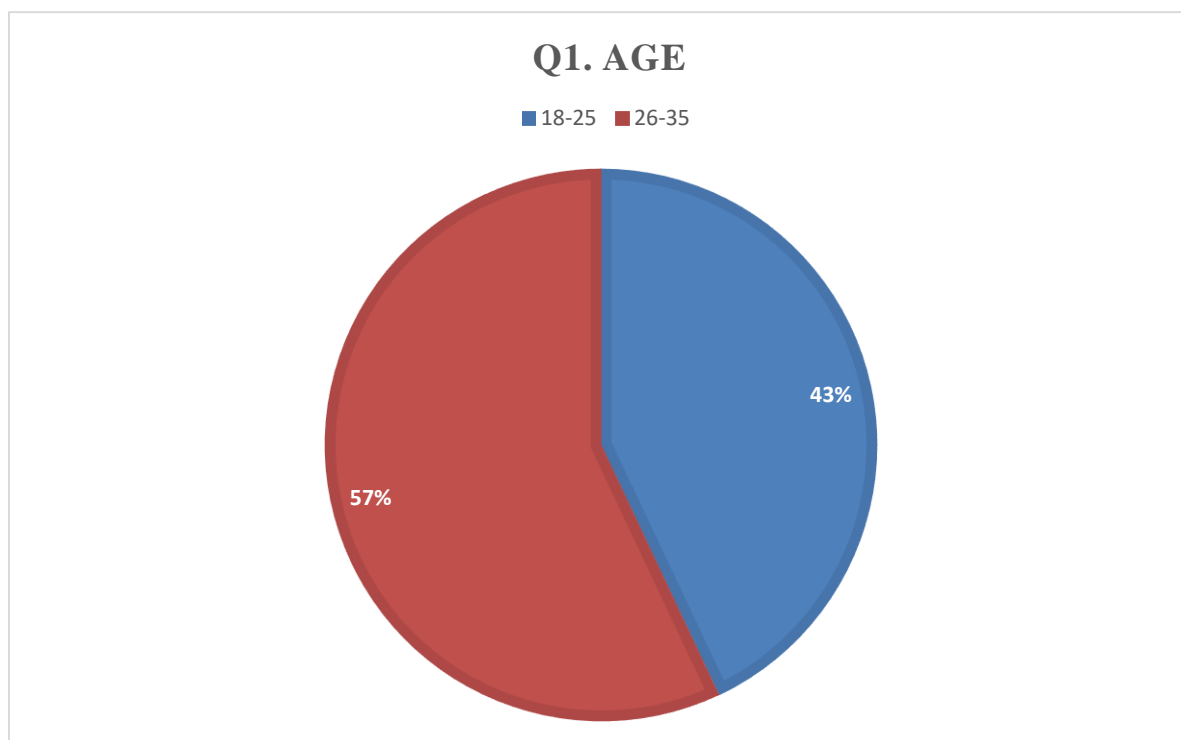


Fig 1. Illustration of participants’ age distribution

Interpretation: Of the maximum number of participants i.e., 57% participants belonged to age group of 26 - 35 years and 43% belonged to age group of 18- 25 years.

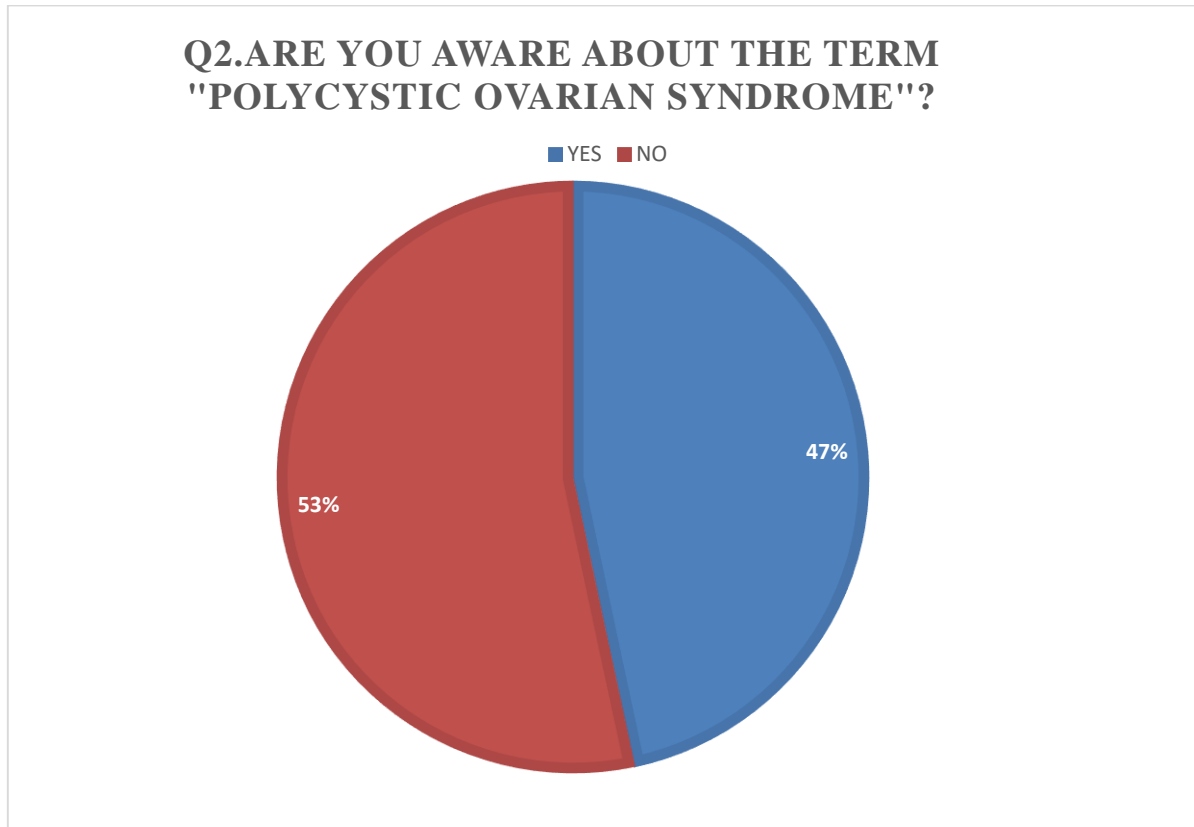


Fig.2 Awareness about PCOS

Interpretation: The illustration above in Figure 2 reveals that 53% of individuals lack awareness of the term "PCOS," while 47% are familiar with it.

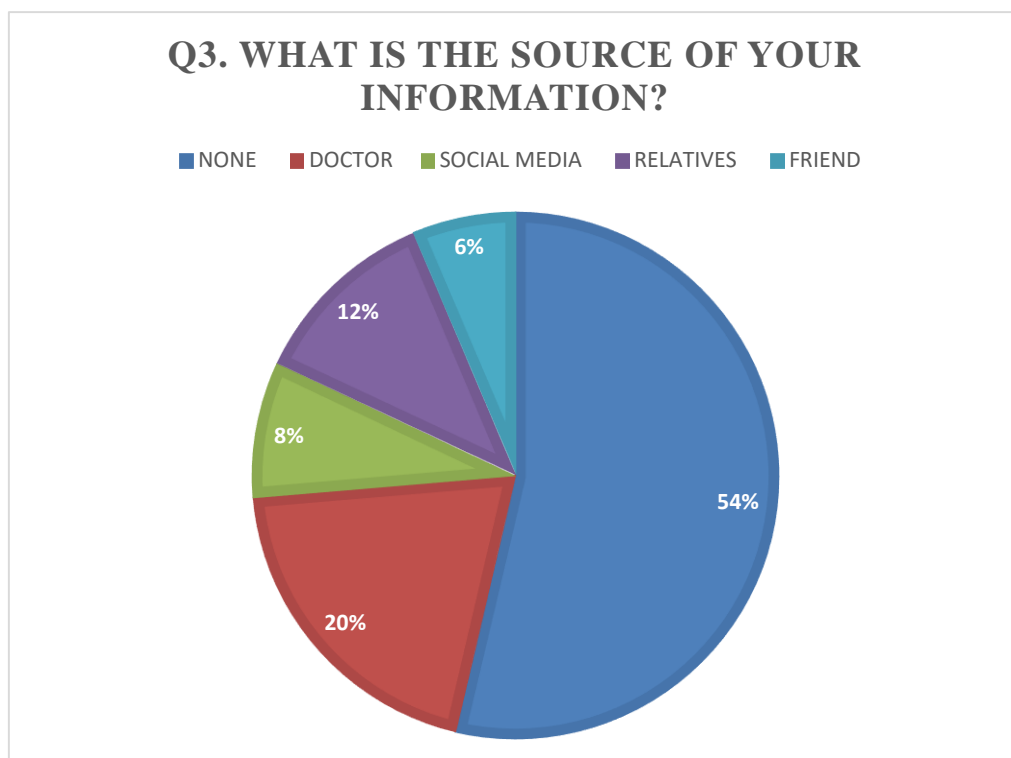


Fig. 3. Source of Information

Interpretation: Data indicates that 20% of women rely on doctors as their source of information, 8% acquire knowledge through social media, 12% through relatives, and 6% through friends. Notably, 54% of individuals either lack awareness or do not possess any information about PCOS.

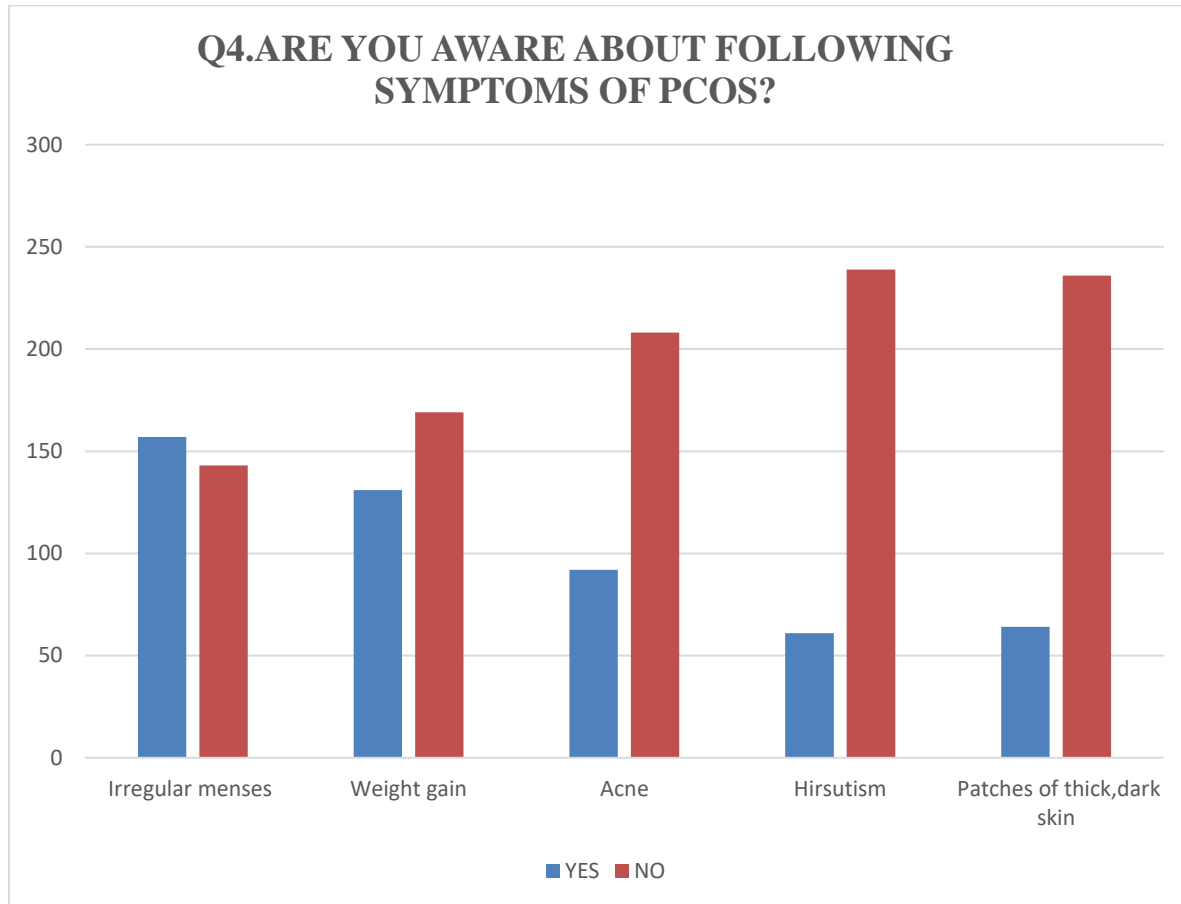


Fig. 4. Awareness regarding Symptoms of PCOS

Interpretation: In this study, it was found that 157 women, constituting 52.29%, were aware of irregular menses, while 143, accounting for 47.71%, were not. Regarding weight gain, 131 women (43.67%) acknowledged awareness, while 169 (56.33%) were uninformed. For acne, 92 women (30.69%) marked "yes," while 208 (69.31%) marked "no." In terms of hirsutism, 61 women (20.35%) marked "yes," while 239 (79.65%) marked "no." Furthermore, 64 women (21.36%) affirmed the presence of patches of thick dark skin, contrasting with 236 (78.64%) who denied it

Q5. ARE YOU AWARE THAT ANXIETY AND DEPRESSION ARE ASSOCIATED WITH PCOS?

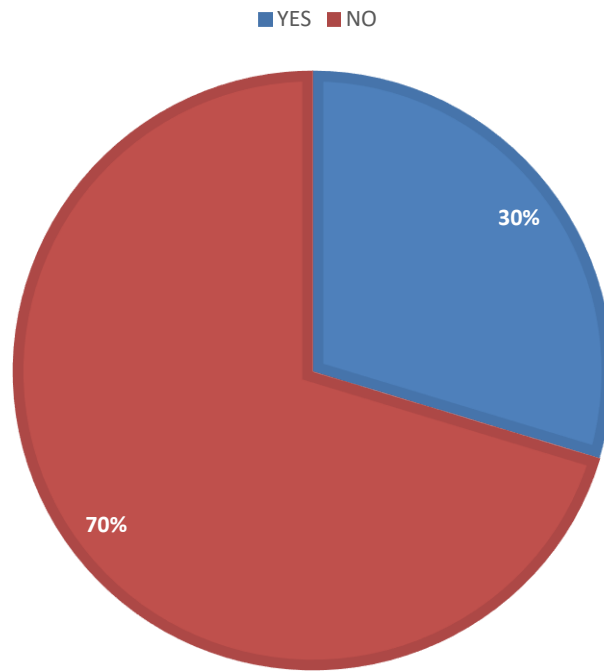


Fig.5 Awareness of association of Anxiety and Depression with PCOS

Interpretation: A noteworthy observation from the data reveals that 70% of individuals expressed a lack of awareness by responding negatively, while the remaining 30% demonstrated familiarity with the subject.

Q6. ARE YOU AWARE THAT TREATMENT OPTIONS ARE AVAILABLE TO TREAT PCOS?

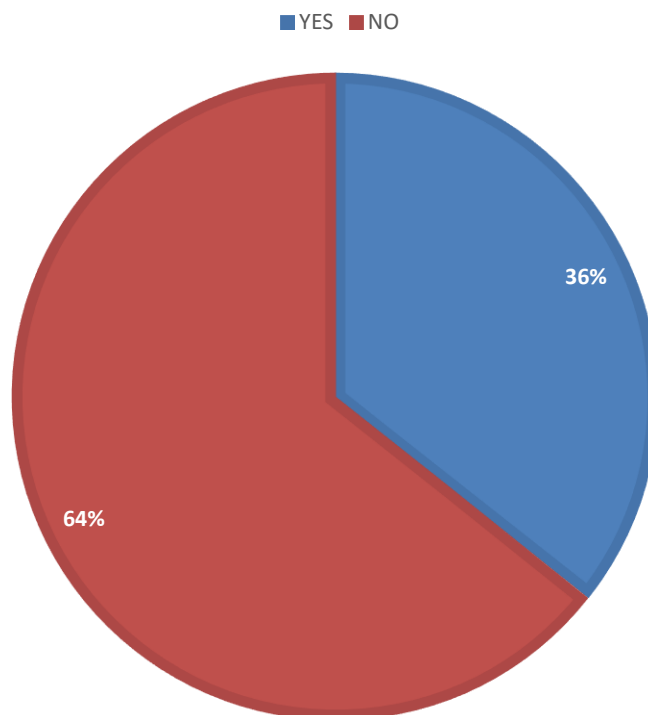


Fig. 6 Awareness of treatment options for PCOS

Interpretation: The awareness of treatment options for PCOS among women is observed to be disparate, with 36% being cognizant of the available treatments and a notable majority of 64% lacking awareness.

Q7. ARE YOU AWARE ABOUT THE TERM 'LIFESTYLE MODIFICATION'?

■ YES ■ NO

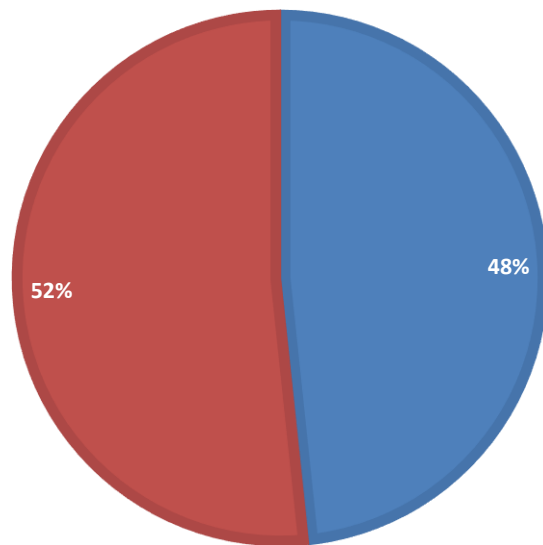


Fig.7 Awareness regarding the term "Lifestyle Modification"

Interpretation: A substantial 52% of women exhibited a lack of familiarity with the term "lifestyle modification," while a discerning 48% demonstrated awareness.

Q8. ARE YOU AWARE ABOUT THE FOLLOWING LIFESTYLE MODIFICATIONS LIKE DIET MODIFICATION ,REGULAR PHYSICAL ACTIVITY ,ADEQUATE SLEEP AND STRESS RELIEF THAT HELP IN REDUCTION IN SYMPTOMS OF PCOS?

■ YES ■ NO

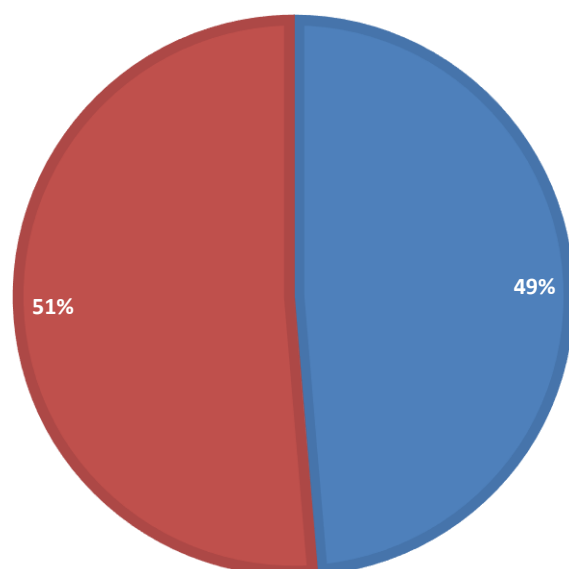


Fig 8. Awareness of lifestyle modification in detail

Interpretation: Awareness of lifestyle modifications, including diet adjustment, regular physical activity, sufficient sleep, and stress relief, crucial for mitigating PCOS symptoms, indicates 51% unawareness and 49% awareness

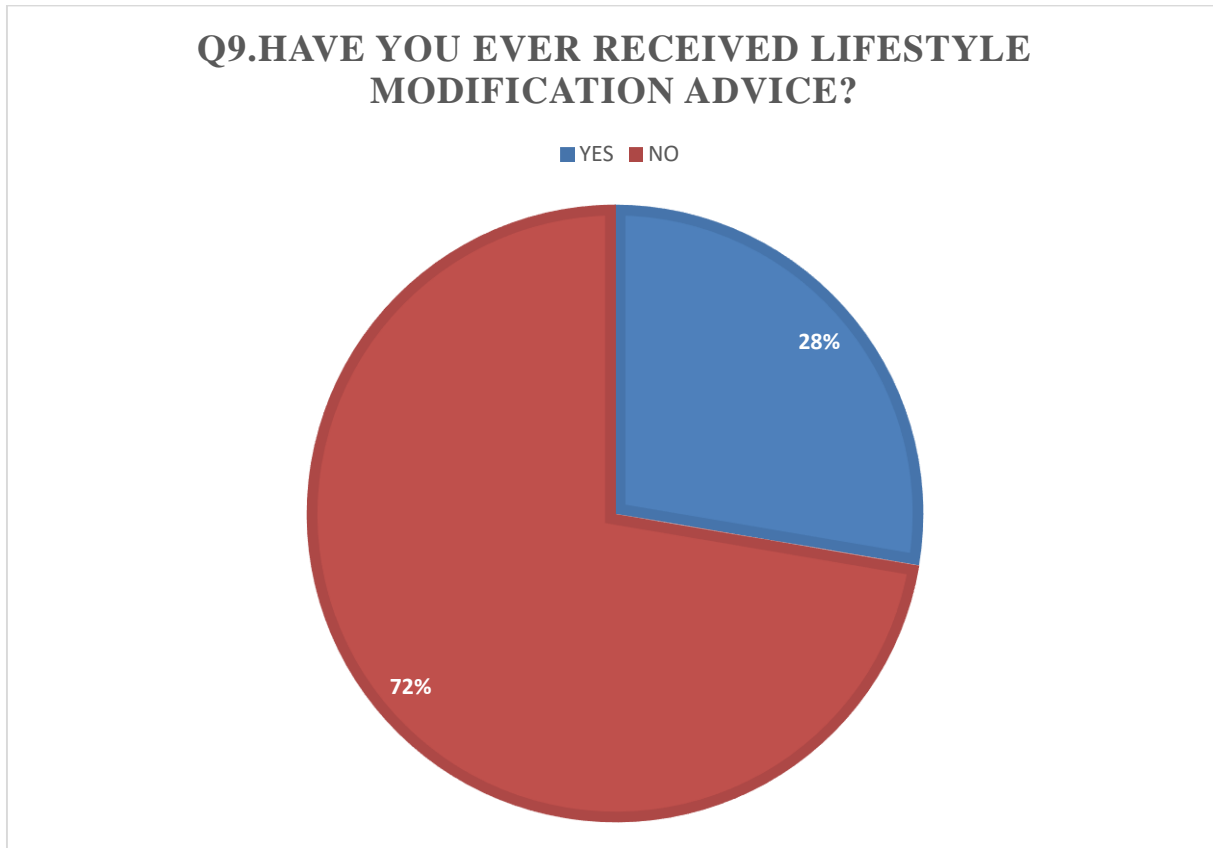


Fig. 9 Awareness regarding lifestyle modification advice

Interpretation: A significant 72% have not received any information or advice regarding lifestyle changes, whereas a mere 28% have affirmed receiving such guidance.

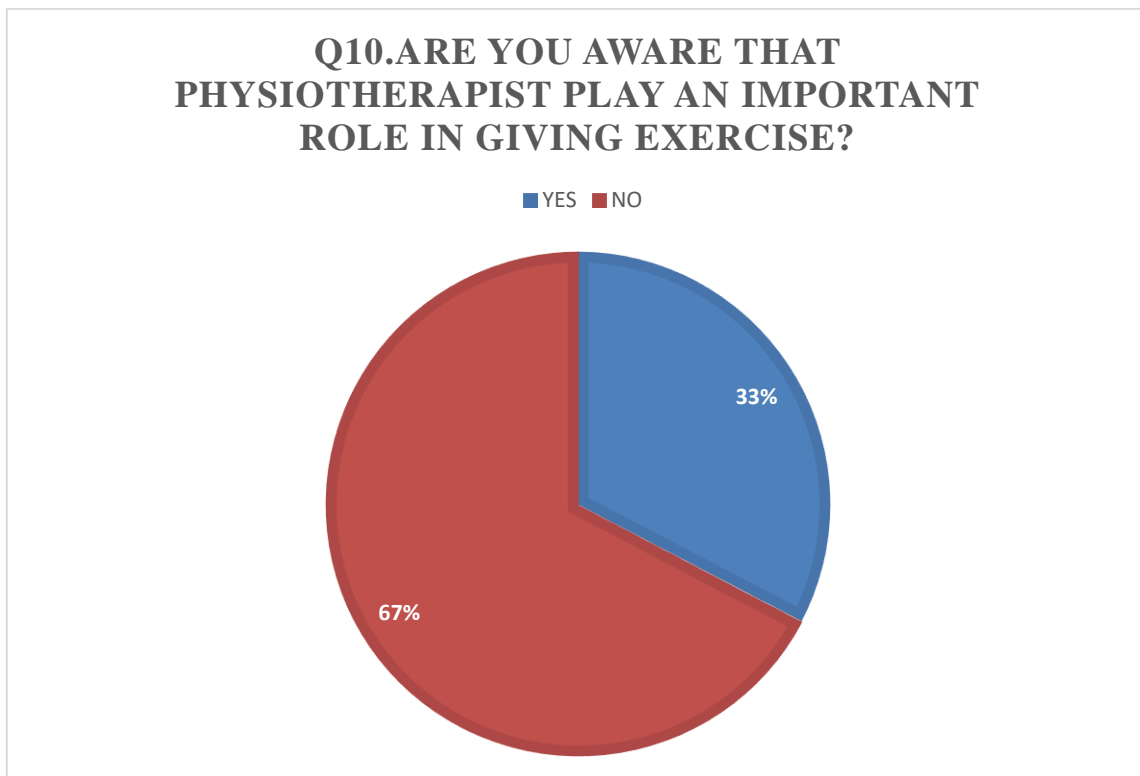


Fig. 10 Awareness concerning the pivotal role of physiotherapists in prescribing exercises for lifestyle modification

Interpretation: 33% of Women confirmed their awareness, while 67% women asserted that they categorically lacked knowledge regarding the fact that physiotherapists play a role in recommending exercises for lifestyle modification.

DISCUSSION

This research project aimed at investigating the awareness and knowledge of PCOS among rural women, reveals a profound and a concerning lack of understanding about the condition. This study brings to light a striking deficiency, highlighting a critical need for targeted interventions. The stark reality is that 53% of participants lack awareness of the very term “PCOS” underscoring a significant information gap that demands urgent attention with access to reliable information about PCOS, with the goal of empowering women to make informed decisions about their health and wellbeing.

The gravity of the issue is further accentuated when delving into specific PCOS symptoms. Alarming, substantial proportions of women are found to be uninformed about key symptoms, with 47.71% unaware of irregular menses, 56.33% lacking knowledge about weight gain, 69.31% uninformed about acne as a symptom, and a staggering 79.65% unaware of hirsutism. These findings underscore a critical need for educational initiatives focusing on symptom recognition and understanding among women. This profound ignorance impedes women's ability to recognize and manage their symptoms effectively, leading to delayed diagnosis and treatment, exacerbating the condition's impact on women's health and well-being.

Examining the sources of information, the study reveals a reliance on healthcare professionals by only 20% of participants, with a mere 8% acquiring knowledge through social media and 12% from relatives. This underscores the imperative for enhanced dissemination of information through healthcare channels and reliable sources to bridge existing knowledge gaps. The study's findings underscore the urgent need for targeted education and awareness campaigns to ensure that women are well-informed about the symptoms, treatment options, and lifestyle modifications necessary for managing PCOS.

The awareness of treatment options and lifestyle modifications for PCOS is notably low, with 64% lacking awareness of available treatments and 72% not receiving any information or advice regarding lifestyle changes. This underscores the pressing need for increased education and access to reliable information about the condition. Lifestyle modifications, such as diet adjustment, regular physical activity, sufficient sleep, and stress relief, are crucial for mitigating PCOS symptoms and improving overall health. However, a significant 72% have not received any information or advice regarding lifestyle changes, highlighting the need for targeted interventions to address this knowledge gap.

In conclusion, the research project's revelations underscore an urgent and compelling need for heightened awareness, education, and improved access to reliable information about PCOS. Addressing the identified knowledge gaps is imperative for empowering women to make informed decisions regarding their health, fostering a proactive approach to PCOS management. The study serves as a clarion call for concerted efforts in public health initiatives and healthcare communication to bridge the information divide and enhance overall reproductive health outcomes for women. By improving the dissemination of information through healthcare professionals and other reliable sources, we can help women better understand and manage their symptoms, ultimately improving their quality of life and overall health outcomes.

CONCLUSION

In conclusion, raising awareness about polycystic ovarian syndrome and the implementation of lifestyle modification in the rural female population is of paramount importance. This research was driven by the pressing need to empower women in rural areas with the knowledge and tools necessary to manage PCOS effectively, improving their overall health and quality of life. As rural women often face unique challenges and limited access to healthcare resources, spreading awareness about the condition and lifestyle modifications can help address these disparities and bridge the information gap. In this endeavor, physiotherapists play a crucial role as educators, motivators, and facilitators of lifestyle changes, contributing to better outcomes and well-being for women in rural communities affected by PCOS. By recognizing the significance of this awareness and the role of physiotherapists, we can take substantial steps towards addressing the healthcare needs of these underserved population.

ACKNOWLEDGEMENT:

I want to convey my gratitude and genuine appreciation to the KVV management for granting me permission to conduct this research by providing me with all the required resources and specifications. I am grateful to Dean Dr. G. Varadharajulu for his insightful advice and assistance.

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