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TOPIC- Exploring the Geographical and Psychological Dimensions of PCOS/PCOD: Bridging Gaps in Diagnosis and Treatment

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Abstract

The aim of this study was to examine geographic psychological parameters in polycystic ovary syndrome (PCOS) or polycystic ovarian disorder (PCOD). Researchers sought ways to bridge the gap between PCOD/PCOS diagnosis and treatment**.** Researchers also investigated the impact of geographical factors on the PS, MW, and QOL of PCOS/PCOD patients. The research employs a mixed-methods approach, utilizing structured questionnaires hosted on Google Forms to gather data. The sampling strategy includes purposive sampling to ensure representation from both rural and urban areas. Descriptive statistics and t-test was the statistical technique used to evaluate the data using SPSS software analysis to compare geographical locations on PS, MW, and QOL.

Key Words: *PCOS, PCOD,Urban, Rural, Mental Well-being, Quality of life, Stress, Patient-centered care*

Introduction

Polycystic ovary syndrome and polycystic ovary disease are terms that are often used interchangeably in the scientific literature, reflecting historical and terminological developments in the understanding of this complex endocrine disorder. PCOS, originally undergone a revision of its diagnostic criteria over the years, leading to a broader conceptualization that includes not only the ovarian morphology associated with the presence of cysts, but also the myriad of metabolic, hormonal, and psychological disturbances observed in affected individuals (Leventhal, 1935). Genome-wide association studies identified 16 PCOS loci, some of which have genes involved in reproductive and metabolic abnormalities. The challenge is to identify the genes and causative variations involved in the pathogenesis of PCOS. Although more laboratory work is needed, gene discovery could improve diagnosis and therapy (Goodarzi et al., 2011).Polycystic ovary syndrome and polycystic ovary disease represent complex medical conditions that transcend traditional medical perspectives. This survey delves into the multifaceted dimensions of PCOS/PCOD, revealing the geographic and psychological complexities that influence diagnosis and treatment. By bridging the gaps in understanding, we aim to improve a holistic approach to these conditions, recognizing the interplay between geographic factors and psychological aspects to pave the way for more effective and personalized interventions. On this journey, we traverse the intersection of medical science and individual experience to uncover insights that may revolutionize PCOS/PCOD care. An article explores public debates about PCOS and living elements of the condition in India, as a point of convergence into patterns of globalization with a narrow sociocultural embedded body. PCOS is an endocrine problem that affects

many Indian women. It has been associated with "Westernization", modernization, stress, and lifestyle changes (Pathak, 2015).

This research accepts the common practice of treating PCOS and PCOD as synonymous terms while acknowledging the historical context and ongoing developments in the field. By treating PCOS and PCOD interchangeably, we aim to encapsulate the entire spectrum of manifestations associated with this syndrome, examining not only the physiological aspects but also delving into the psychological dimensions that often coexist with endocrine and metabolic disorders. This approach allows for a comprehensive examination of the geo-psychological implications of PCOS, recognizing its multifaceted nature and providing a more holistic understanding of the syndrome's impact on the well-being of affected individuals. According to Ghosh, infections due to maladaptive lifestyles and mortality are increasing, with weight being a major concern. Genetic and epigenetic factors such as diet, stress, and addictions significantly influence disease outcomes. Controlling these factors can reduce the risks of CVD, T2DM, and PCOD (Ghosh et al., 2023).

The synonymous use of PCOS and PCOD in research is rooted in the recognition that PCOD/PCOS is described by the presence of numerous ovarian cysts, was an earlier description of what we now include in the broader framework of PCOS. As diagnostic criteria have evolved to include both morphological aspects and clinical and biochemical features, the terminological transition from PCOD to PCOS has reflected an understanding that goes beyond ovarian morphology to include the various metabolic and psychological manifestations of the syndrome.

“A study by Balachandar et al., (2023) highlights the importance of polycystic ovary disorder (PCOS) in women of childbearing age, which affects one in five. It highlights its clinical implications, including conceptual, metabolic, and mental issues. Treatment includes lifestyle changes, dietary consolidation, and social mediation.”As we traverse the intersection of geography and psychology in our research on PCOS and PCOD, adopting this inclusive terminology allows us to explore geographic variation in the prevalence and psychological correlates of this syndrome, contributing to a nuanced understanding of these psychological effects in urban and rural areas and also "patient-centered care" reflects an approach to health care that prioritizes the needs, experiences, and preferences of individual patients. It is a concept that focuses on providing medical care that responds to the specific values and circumstances of each patient. In the context of our research, "patient-centered care" is a keyword that represents our goal of bridging the gap between diagnosis and treatment of PCOS and PCOD by considering patients' unique needs and experiences, especially in different geographic settings.

The psychological dimensions that are considered for doing this research include Percieved Stress, Mental Well-Being and Quality of life to identify if there is any difference found in Rural and Urban female residents who are already diagnosed with PCOS/PCOD where a comparison has been done between Rural and Urban PCOS/PCOD patients in order to check whether these psychological dimensions differentiate these two groups any way due to their Geographical settings. According to research by Phillips, (2015)Perceived stress means an individual's personal evaluation of the stress level they experience at a specific moment or over a defined period. This includes their perceptions of life's uncontrollability and unpredictability, the frequency of dealing with bothersome hassles, the extent of changes happening in their life, and their confidence in handling problems. Unlike measuring the occurrence and frequency of specific stressful events, perceived stress focuses on how a person feels about the overall stressfulness of their life and their ability to cope. Similar negative life events may impact individuals differently due to factors like personality, coping resources, and support. Therefore, perceived stress reflects the dynamic interplay between an individual and their environment, which they perceive as threatening or as exceeding their resources and affecting their well-being (Lazarus & Folkman, 1984). Commonly, perceived stress is checked through tests such as the perceived stress scale (Cohen, Kamarck, & Mermelstein, 1983), which measure the frequency of these personal evaluation and feelings.

Mental health of a person or mental wellbeing is often referred to as subjective well-being. Subjective well-being means our perception and evaluation of our life (Keyes, 2006). Subjective well-being is made up of two elements: eudaimonia and hedonia.Similar to the word "hedonism," "hedonia" denotes happiness and pleasure. It refers to having a positive outlook on life and relishing happy experiences when it comes to mental health.

Any happy-making activities are examples of hedonia. This could be reading a book or watching a movie for some people, or it could be eating and drinking wine for others.While eudaimonia is a little more difficult to define, it basically means living a purposeful life and making an effort to realize one's full potential. Eudaimonia can be characterised by a sense of purpose, challenge, accomplishment of goals, feeling that one makes a contribution to society, and finding meaning in life. These two ideas work together to further our knowledge of mental health and well-being.

Quality of life (QoL) serves as a comprehensive concept, striving to encapsulate the holistic well-being of individuals or populations at a specific moment. This encompasses positive and negative aspects across the spectrum of existence. Elements such as personal health, spanning physical, mental, and spiritual dimensions, coalesce with considerations of relationships, educational attainment, work environment, social standing, financial prosperity, a sense of security, freedom, autonomy in decision-making, social connectedness, and the physical environment. (Teoli, 2023)According to the WHO, quality of life is a subjective assessment reflecting an individual's perception of their reality in relation to their aspirations, filtered through the cultural and value frameworks they adhere to. The Quality-of-Life Research Unit at the University of Toronto articulates QoL as the extent to which an individual can derive enjoyment from the valued possibilities within their lives. It's crucial to distinguish QoL from related concepts like the standard of living, which predominantly hinges on economic factors and income.

QoL also diverges from health-related quality of life, a public health metric exploring the interplay between health and overall well-being. Given the challenge of establishing a universally accepted definition and measurement for QoL, recent studies have sought to re-conceptualize it by breaking it down into distinct domains. The "engaged theory" is one such approach, categorizing QoL into four primary domains: economics, culture, politics, and ecology.

According to the official definition of Urban and Rural, urban areas are heavily inhabited locations that typically function as administrative, cultural, and economic centers. Greater population density, more services available, a more vibrant way of life, and contemporary infrastructure are the characteristics of urban regions. Cities, towns, and metropolitan areas are included in this category as they are hubs of commerce and industry.

When compared to urban centers, Rural areas are usually characterised by a lower population density, an emphasis on agriculture, and a relative lack of developed infrastructure and services. These regions, which may include tiny villages or remote communities, are frequently found outside of large cities and towns. Rural communities are renowned for their traditional ways of life and intimate ties to the natural world.

While existing literature underscores the higher prevalence of PCOS in urban areas and acknowledges the challenges in diagnosis and treatment, our research aims to bridge the gap by challenging the residential differences in psychological dimensions (PS, QOL, MW) among PCOS/PCOD patients. Our hypothesis, supported by a patient-centered care approach, challenges conventional notions and highlights the need for a nuanced understanding of the biological and psychological dimensions of PCOS, especially in diverse geographical settings (urban and rural). In this paper some critical differences that has been missing from other studies so far is covered that insights into tailored interventions for effective diagnosis and treatment of PCOS/PCOD patients across different living environments.

Literature Review

According to Ghosh et al., (2023), maladaptive lifestyle infections and mortality rates are increasing, with weight being a major concern. Genetic and epigenetic factors, such as diet, stress, and addictions, significantly impact disease outcomes. Controlling these factors can reduce CVD, T2DM, and PCOD risks.

The objective of a study was to determine urban-rural differences in the burden of polycystic ovary syndrome (PCOS) among Indian adolescent girls aged 12-19 years. A pilot study including 126 participants from urban and rural areas. Fourteen percent of participants had identified PCOS, and the majority were between 16 and 12 years of menopause. The incidence of patients with PCOS was higher in urban areas (Balaji et al., 2015).

Vidya Bharathi et al., (2017) article says among females with polycystic ovarian syndrome (PCOS) who are of reproductive age, is a prevalent and complicated illness that primarily manifests as infertility, oligomenorrhea,

and hirsutism. According to socioeconomic research conducted in India, PCOS is a lifestyle condition that is far more common in middle-class and upper-class urban populations than in rural ones. To remind women about lifestyle changes, comprehensive ethnographic research that determines the incidence of PCOS across various socioeconomic categories would be very beneficial.

Ramesh & Dinesh, (2020) This study analyzed the female's experiences with PCOS (polycystic ovarian syndrome) in Kerala, India. Through in-depth interviews, it was found that factors that comes under psychological and social areas as a whole such as coping methods, attitudes, beliefs, consciousness levels, as well as the relationship between a doctor and patient significantly affect females. The findings suggest which effective behavioral interventions should consider these psychosocial aspects.

Pathak, (2015) article examines public discussions of PCOS and the lived elements of the condition in India as a point of convergence into patterns of globalization with a close sociocultural embedded body. PCOS is an endocrine problem that affects many Indian women. It has been associated with "Westernization", modernization, stress, and lifestyle changes.

Ganie et al., (2023) cross-sectional review assessed polycystic ovary condition (PCOS), anthropometric and segment qualities of sound Indian ladies of conceptive age, and contrasted these attributes with non-tainted types. 7107 tough ladies (18-40 years) from six delegate bone-dry districts of India took part in the review. Results showed that metropolitan regions had higher commonness of overweight, underweight, and hypertension, while South India had more significant levels of underweight. The chances of significance went from 8.1% to 40%.

Pathak, (2020) article examines public discourse about PCOS, a hormonal problem linked to weight, heart disease, and type II diabetes, in India since the economic boom of 1991. It highlights the socio-cultural, natural, and politico-financial changes resulting from globalization. The study suggests that understanding clinical semantics can counter the focus on diet and physical activity, emphasize the connection between the body and its current situation, and provide insights for biomedical and general health research.

Kamrul-Hasan et al., (2023) think Polycystic ovary syndrome (PCOS) is a prevalent endocrinopathy affecting regenerative mature women in Bangladesh. It represents various issues including conception, correction, cardiometabolic, and mental conditions. Limited research on the prevalence of PCOS in Bangladeshi women reveals a high prevalence of clinical manifestations such as weight, insulin resistance, glucose resistance, dyslipidemia, metabolic disorders, thyroid irregularities, and common mental comorbidities.

Natin, (2022) study explores Polycystic ovary syndrome (PCOS) among women in Kerala, India, aiming to understand its prevalence, treatment barriers, and preventive measures. It aims to identify the best preventive measures and treatments for the increasing incidence of PCOS, diabetes, and weight.

Jasrotia et al., (2022)say the prevalence of stiffness is increasing in both developed and non-industrialized countries, especially in India. Women are more likely to develop stiffness due to packaged foods, hormonal changes during pregnancy and menopause, and an increased risk of metabolic conditions and PCOS. Weight affects women's physical, mental, social, and conceptual well-being. India has implemented various projects and interventions to address this problem.

Soumya, (2013) aim of the review is to map pretest information about polycystic ovary disease in adolescent girls, assess the effectiveness of an organized educational program, and determine its relationship to specific demographic factors. Youth aged 14-18 are essential for preventing serious diseases in adulthood. Promoting health education and its protection against health risks is essential for the national health and social foundation.

Veltman-Verhulst et al., (2012) for a variety of reasons, the results of past meta-analyses may not fully reflect the psychological well-being of the typical woman with polycystic ovary syndrome (PCOS) or the reasons for this misery. They aimed to look at the profound difficulties and associated highlights in women with PCOS.

Balachandar's (2023) study highlights the importance of polycystic ovary disorder (PCOS) in women of childbearing age, affecting one in five. It highlights its clinical consequences, including conceptual, metabolic, and mental issues. Treatment involves lifestyle changes, diet consolidation, and social mediation.

Mehrotra et al., (2023) study examines the prevalence of anxiety and dissatisfaction among women with polycystic ovary syndrome (PCOS) in tertiary care in Focal India. 100 women with PCOS with an average age of 25.42 years and mostly with 10-12 years of education participated in the study. In conclusion, brief pharmacological treatment, psychotherapy, and psychosocial support should be considered.

Legro et al., (1998) work tested the hypothesis that PCOS is a genetic condition caused by the familial occurrence of hyperandrogenaemia in related people. It was concluded that PCOS kindreds show familial overall hyperandrogenaemia regardless of oligomenorrhea.

Merkin et al., (2016) paper discusses ecological factors contributing to the development, prevalence, and treatment of polycystic ovarian disorder (PCOS), focusing on environmental toxins, diet, financial status, and geology. While natural pollutants can influence regenerative health, there is limited understanding of their impact on PCOS improvement. Further research is needed to explore weight loss strategies and healthy components to prevent or prevent PCOS.

Azziz, (2019) study explores the link between phenotypes of PCOS and increased risk of metabolic dysfunction and reproductive issues, highlighting the influence of environmental and genetic factors, and the potential for a deeper understanding of the evolutionary causes.

Rutkowska & Diamanti-Kandarakis, (2016) primary focus of this research is on the potential involvement of the most prevalent and most extensively investigated environmental toxins for this disease in the etiology of PCOS. The health of people living an industrialized life is affected by plasticizers such as bisphenol A (BPA) or phthalates, which fall under the categories of endocrine-disrupting chemicals (EDCs) and advanced glycation end products (AGEs). As a result, special care should be taken with such exposure.

Shahdadian et al., (2019) purpose of this study was to look at the relationship between eating habits and PCOS. The study in Isfahan, Iran, examined the link between eating habits and PCOS. It found that Western and plant-based diets were associated with higher PCOS risk, while moderate adherence to a varied diet was associated with lower risk.

Goodarzi et al., (2011) Genome-wide association studies have identified 16 PCOS loci, some of which have genes involved in reproductive and metabolic abnormalities. The challenge lies in identifying genes and causative variations involved in PCOS pathogenesis. Although more laboratory work is needed, gene discovery could improve diagnosis and therapy.

Diamanti-Kandarakis et al., (2012) show Polycystic ovary disorder (PCOS) is a complex condition with unclear etiopathogenesis. It combines anovulation and hyperandrogenism, affecting metabolism. Weight loss and overeating can worsen PCOS, while high-glycated foods can contribute to poor eating habits, highlighting the role of diet in the condition.

Farkas et al., (2013) literature review, an increasing number of psychological symptoms (such as depression, anxiety, body image problems, eating and sexual disorders, and low life satisfaction) may be associated with this gynecological disorder of endocrine origin. Consequently, the syndrome is also important from a therapeutic point of view. They examine the psychosocial basis of the condition, the potential for psychotherapy, and the psychological correlations of individual symptoms as well as their links to other psychological syndromes.

Newbold, (2010)says endocrine disruptors like diethylstilbesterol, bisphenol A, phytoestrogens, phthalates, and organotin are linked to weight development in animals and humans. These substances are causing negative health outcomes like stiffness and diabetes, which are rapidly becoming major global medical issues.

Diamanti-Kandarakis et al., (2009) study talks about how Endocrine-disrupting materials (EDCs) disrupt biosynthesis, control, and development, affecting reproduction, breast growth, prostate problems, neuroendocrinology, thyroid, and cardiovascular endocrinology. They also affect various particles like pesticides, plastics, and fillers.

Wolf et al., (2018) discover PCOS is a hormonal disorder affecting females that causes irregular menstrual cycles and increases the risk of conditions such as hirsutism, insulin resistance, dyslipidemia, and infertility. Prevalence ranges between 3 and 10%, but specific subpopulations are not widely identified geographically.

PCOS research is limited due to sample size, selection bias, and lack of comparability between studies. This review aims to determine the prevalence of PCOS by geographic location and race/ethnicity.

Rzońca et al., (2018) aim of the review was to evaluate females' quality of life (QoL) & Satisfaction of life with PCOS in Poland. The study involved 504 women and used surveys and interviews. Results showed that women with PCOS had lower QoL and SwL compared to healthy controls. Factors affecting quality of life included financial status, time since PCOS diagnosis, BMI, age, and professional activity. More research is needed to understand PCOS and its effects on women.

Azizi &Elyasi, (2017) show PCOD is a common endocrine problem in women of childbearing age, causing various problems such as depression, anxiety, body dissatisfaction, and sexual dysfunction. However, there is uncertainty about the etiology of these problems. A review of the literature on the side effects of PCOS found that doctors mostly focus on the physical symptoms, neglecting the mental aspects. The study analyzed research from 1983 to 2016, focusing on mental health issues, psychosocial issues, and weight management.

Hoeger et al., (2020) PCOS is a general reproductive syndrome, but it faces challenges such as delayed diagnosis and inadequate treatment. The International PCOS network developed a multi-year guideline in 2018 and is promoting its translation. However, there are still challenges in understanding and treating PCOS, with clinicians and consumers dissatisfied with the timeliness of diagnosis and treatment options. This review aims to address these issues and guide clinicians and investigators in managing PCOS.

Homburg, (2002) article proposes a consensus for a unifying, practical definition of polycystic ovarian syndrome, aiming to bridge the gap between American biochemical marker-based diagnosis and European reliance on ultrasound. The proposal includes confirmation of diagnosis by clinical symptoms and hormonal estimations for subsets. It is simple, practical, and cheap, potentially contributing to future work on this prevalent syndrome.

Chopra et al., (2021) study explores the stigma and challenges of Polycystic Ovary Syndrome (PCOS), a condition causing hormonal imbalance and infertility in women. Through interviews with 10 women and analyzing a PCOS-specific forum, the researchers identify potential avenues for designing inclusive health technologies, such as personalized tracking, accelerated self-discovery, and co-management, to support diverse needs.

Pitchai et al., (2016) say since the prevalence of polycystic ovarian syndrome (PCOS) is rising, it is critical to emphasize preventative strategies, as PCOS negatively affects women at all stages of their lives. The purpose of this study is to investigate how people perceive PCOS, how much they know about changing their lifestyle, what emotional characteristics they have, how concerned they are about PCOS, and how often they use physiotherapy.

Soucie et al., (2022) discover there are frequent gaps in the medical treatment provided to patients with PCOS. They hurt women and are structural. In this study, diagnostic narratives from 72 Canadian women with PCOS diagnoses were analyzed to see how power and agency are juxtaposed. Three themes of power—physicians as gatekeepers, oppression as intersectional, and hostile provider messages that influence emotions and cognition—were developed through the use of Braun and Clarke's inductive codebook theme analysis. Themes of agency included group action, active resistance tactics, and education. The findings' ramifications for women's health equity are examined.

March et al., (2009) aim of this research project was to provide a community-wide prevalence estimate of PCOS based on the National Institutes of Health (NIH) criteria, as well as the more current Rotterdam consensus criteria and Androgen Excess Society (AES) criteria. Although polycystic ovarian syndrome (PCOS) is thought to be the most prevalent endocrine ailment among fertile women, disagreements over suitable diagnostic standards and restrictions on sample design have cast doubt on the condition's true prevalence in the general population.

Che et al., (2023) One of the most prevalent endocrine conditions affecting women who are fertile is polycystic ovarian syndrome, or PCOS. This syndrome raises the risk of obesity, diabetes, dyslipidemia, cardiovascular disease, psychiatric disorders, and other health issues in addition to impairing female fertility. In addition, the

present pathophysiology of PCOS remains unknown due to its high level of clinical variability. A significant gap remains in the specific diagnosis and tailored therapy. We provide an overview of current research on the genetics, epigenetics, gut microbiota, corticolimbic brain responses, and metabolomics of the pathogenesis mechanism of PCOS, point out unresolved issues with PCOS phenotyping and possible treatment strategies, and describe the vicious cycle of PCOS transmission between generations, which may inspire further ideas for improved PCOS management in the future.

Amiri et al., (2014) study was a qualitative study to explore and document perceptions of women with PCOS about their disorder and quality of life. Semi-structured interviews with open ended questions were conducted with 23 women with PCOS.

Sills et al., (2001) purpose of this study was to characterize the perspective and knowledge of patients regarding polycystic ovarian syndrome (PCOS), which is the most prevalent cause of oligoovulation and anovulation in women who are reproductive age.

Legro et al., (2013) suggest (PCOS) be diagnosed if two of the three criteria—androgen excess, ovulatory dysfunction, or polycystic ovaries (PCO)—are satisfied; conditions that resemble PCOS clinically are not included. These include non-classic congenital adrenal hyperplasia (mostly 21-hydroxylase deficiency by blood 17-hydroxyprogesterone [17-OHP]), hyperprolactinemia, and thyroid illness in all women. We recommend a more thorough examination ruling out other explanations in a subset of women with amenorrhea and more severe cases.

Gibson-Helm et al., (2016) This study looked at the experiences of women who were diagnosed with PCOS, the information that was given, the primary worries that these women had, and the support systems that these women, who were mostly from North America and Europe, needed. A multinational programme to enhance diagnosis and education to better meet women's needs and maximise early involvement with evidence-based management will be informed by the findings. This global approach explores how women's demands may vary in different areas and draws on earlier studies concerning PCOS diagnosis experiences in Australia.

Tay et al., (2018) says polycystic ovary syndrome (PCOS) affects one in seven women worldwide, with diverse healthcare needs throughout life. Diagnosis and management are challenging, with one-third experiencing a 2-year delay. Current clinical services lack education and support, leading to dissatisfaction among women and general practitioners. An evidence-based patient-centered clinical model, co-developed by consumers and health professionals, is crucial for holistic care and lifestyle management.

Methodology

Objectives

A. Bridging the gap in diagnosis and treatment for PCOS/PCOD patients through a patient-centered care approach

B. Investigate how living in rural or urban areas affects the perceived stress, mental well-being, and quality of life of PCOS/PCOD patients.

Hypothesis

1. There will be no residential difference in PS among PCOD/PCOS patients.
2. There will be no residential difference in QOL among PCOD/PCOS patients.
3. There will be no residential difference in MW among PCOD/PCOS patients.
4. Patient-centred care approach will help bridge the gap in the diagnosis and treatment of PCOD/PCOS.

Analysis

A. Bridging gap in diagnosis and treatment for PCOS/PCOD patients through a patient-centred care approach

Patient-centered care: In the planning, coordinating, and provision of care, the patient's life experience, values, needs, desires and preferences are respected under the patient-centered care model. A key element of this model is the therapeutic alliance that develops between the patient and the medical staff (Balen et al., 2016). It has been demonstrated that putting a patient-centered care model into practice improves patient outcomes, makes better use of resources, lowers costs, and raises satisfaction with care. All healthcare decisions and quality measures in patient-centered care are based on the unique health demands and desired health outcomes of the individual patient. Healthcare professionals and patients work together as partners to treat patients' physical needs, as well as their emotional, mental, spiritual, social, and financial needs. To create and oversee a personalized and all-encompassing care plan, patient and family centered care brings active cooperation and shared decision making between families, patients, and clinicians.

Several common features are found in most definitions of patient-centered care, which influence how healthcare facilities and systems are planned, run, and provided. Patient-centered goals are in line with the healthcare system's purpose, vision, values, leadership, and drivers of quality improvement.

• Care is coordinated, accessible, and collaborative. The appropriate care is given in the appropriate setting at the appropriate time.

• Preferences, values, cultural customs, and socioeconomic circumstances of the patient and family are honored; the focus of care is on both physical comfort and emotional well-being.

• Families and patients are an expected component of the care team and are involved in systemic and patient-level decision-making.

• It is encouraged and supported for family members to be present in the care environment.

• Complete and prompt information sharing is provided so that patients and their families can make knowledgeable choices.

Benefits of Patient-Centered Care: Although community health outcomes may potentially improve, the main objective and advantage of patient-centered treatment is to enhance individual health outcomes. Patients gain advantages, but healthcare systems and providers also gain from

• A better reputation among patients for the providers.

• Increased productivity and morale among medical professionals and support personnel.

• Better distribution of resources.

• Lower costs and higher profit margins across the whole care spectrum.

Patient-centered care and PCOS: Around one in seven women globally suffer from PCOS starting in early adulthood, and their healthcare needs vary throughout their lives. Diagnoses for PCOS can be difficult to come by, and one-third of women report waiting at least two years for a diagnosis. With services fragmented across healthcare providers, present medical services don’t adequately give proper knowledge and support women with their different psychological, metabolic and reproductive care needs. Women are unhappy with the care they get, and general practitioners who see PCOS patients for the first time frequently feel unprepared to identify and treat the condition. National evidence-based guidelines that advocate for unified multidisciplinary services have not been fully implemented, leading to wide variations in practice and the absence of ideal care models. The cornerstones of care for PCOS patients are lifestyle management and psychological support. Healthcare professionals who treat PCOS patients most frequently, general practitioners, dermatologists, endocrinologists, and gynecologists need exact resources and multidisciplinary support (Tay et al., 2018). To help patients with PCOS, a multidisciplinary, holistic, evidence-based patient centered medical model of care that ismutually developed by patients and medical professionals and offers good knowledge and resources is essential.

Since hyperandrogenism is linked to a worse prognosis and a high threat of metabolic and cardiovascular disease, it is a crucial clinical term of the syndrome. About 60 to 80% of cases meet the Rotterdam criteria for hyperandrogenism diagnosis (Rocha et al., 2019). IR is so prevalent in PCOS patients that it can be regarded as a necessary component of the illness. IR and dysregulation of glucose metabolism are thought to be pathogenic

factors in the illness. Due to compensatory hyperinsulinemia caused by IR, ovarian androgen synthesis is increased. This is achieved through both direct ovarian actions and stimulation of LH secretion. Regardless of obesity, PCOS is linked to an increased risk of NAFLD, indicating that additional characteristics of PCOS, such as androgen excess and IR, may also contribute to the association between NAFLD and PCOS.

In addition to addressing symptoms, PCOS treatment should be recommended to stop long-term complications from developing. The usual treatment to lower androgen levels, treat symptoms, and protect the endometrium is to combine oral contraceptives with antiandrogens. Nonetheless, the diagnostic ideas should be customized based on the patient's desire to become pregnant (or not), the requirement for a visual approach, and the existence of concurrent metabolic changes.

The overall goals of therapy for women with PCOS include preventing endometrial hyperplasia, managing metabolic abnormalities, reducing risk factors for type 2 diabetes and cardiovascular disease, planning and achieving a safe pregnancy, if desired, and improving overall well-being and quality of life (Rocha et al., 2019). In an ideal world, a multidisciplinary team offering patient-centered care would accomplish these goals which are.

1. Lifestyle plan and support
2. Treatment of hyperandrogenic symptoms
3. Endometrial protection
4. Contraception
5. Fertility counseling
6. Psychological and behavioral support
7. Nutritional counseling
8. Metabolic Screening and Intervention

Making lifestyle changes should be the first step in treating PCOS patients. When patients who are overweight or obese lose weight through diet and exercise, their serum insulin and androgen levels drop, which lowers their threat of increasing glucose control and type 2 diabetes. When lifestyle changes are not enough to alleviate insulin resistance/glucose intolerance or dyslipidemia, pharmacological interventions become necessary. The most often prescribed medication for these patients' metabolic control is metformin 41. Metformin's therapeutic benefits as a hypoglycemic and insulin sensitizing treatment have been thoroughly demonstrated in PCOS affected females.During reproductive age, when problems like finding a partner, starting a sexual relationship, and starting a family are frequently highly relevant, PCOS manifests in women. Anxiety-inducing things that negatively affect physical appearance, femininity, or fertility can also bring imbalances in the psychosexual realm. PCOS may even have a greater psychological impact than long-term conditions like diabetes, asthma, rheumatoid arthritis, and coronary heart disease. The most prevalent symptoms included changes in appetite, sleep disturbances, daily fatigue, and loss of interest in routine activities. Therefore, to provide these patients with better care and clinical management, it is imperative to assess females' QOL with PCOS.

Goals for evaluating the QoL of PCOS patients.

1. Enhance patient communication
2. Increased compliance with dietary modifications
3. Boost your self-care
4. Boost the standard of living
5. Evaluate the effect of symptoms and your quality of life.

The first step in preconception counseling for heavy weight or obese PCOS patients who want to get pregnant should be making lifestyle changes that will help them lose weight. Five to seven percent of body weight loss may be sufficient to encourage regular menstrual cycles and spontaneous ovulation (Balen et al., 2016).

Treatment should be tailored to the woman's specific needs, taking into account her age, the length of her infertility, the threat of getting pregnant at this time, and any potential contributing problems to her inability to lose weight, if she is not able to lose weight or inability to bring back her menstrual cycles.

The second line of treatment (after lifestyle modifications) is ovulation induction. Before doing this, it is important to carefully consider other infertility causes, such as male factor or tubal obstruction, which may coexist with PCOS and require IVF. The ideal time to get pregnant should be discussed with women with PCOS due to the possibility of obstetric, metabolic, and cardiovascular risks. Safe contraception is thus an essential part of integral care in order to achieve not just a pregnancy but a successful full-term pregnancy with both mother and baby in good health. Pregnancy can be delayed while lifestyle modifications are put into place to lower body fat percentage and enhance metabolic homeostasis.

Obesity and insulin resistance (IR) contribute to the inflammatory and metabolic disturbances connected to PCOS, but androgen extra amplifies these effects. The treatment strategy ought to be customized based on the complaints, phenotype, and reproductive desire of the patient. A multidisciplinary team's integral management may assist patients in adhering to lifestyle interventions, which may help them lose weight and improve their reproductive and metabolic health.Polycystic ovarian syndrome, or PCOS, is one of the most common endocrine disorders affecting fertile women, according to research by Che et al. (2023). In addition to decreasing female fertility, this syndrome increases the risk of obesity, diabetes, dyslipidemia, cardiovascular disease, psychiatric disorders, and other health problems. Additionally, because of the great degree of clinical variability in PCOS, the current pathophysiology of the condition is still unknown. There is still a large gap in the precise diagnosis and customized treatment. Furthermore, the distribution of self-reported emotional reactions to the PCOS diagnosis could not be predicted by any clinical criterion, and there was no age-specific pattern in the sentiments associated with PCOS (Sills et al., 2001).

In the context of our study "Exploring the Geographical and Psychological Dimensions of PCOS/PCOD: Bridging Gaps in Diagnosis and Treatment," which examined rural and urban groups of PCOS/PCOD patients using three scales—perceived stress, quality of life, and mental well-being between the different groups we found no important differences in these psychological dimensions. However, our review of the existing literature revealed several bridging gaps in the diagnosis and treatment of PCOS/PCOD which could benefit from a psychological perspective. These gaps include issues related to patient awareness and reporting, the psychosocial impact of PCOS, effective patient-physician communication, and addressing psychological barriers to health-seeking behavior. Bridging these gaps requires a holistic approach that integrates psychological assessments, promotes awareness, and emphasizes the interconnectedness of physical and psychological well-being. Our findings underscore the importance of considering these psychological dimensions in the comprehensive management of PCOS/PCOD in diverse geographic settings.

Polycystic ovary syndrome is a very serious disease in women of reproductive age, but most cases are undiagnosed. This can be demonstrated by Patel's case study, An Autobiographical Case Report of a Forten Forgotten Disorder (2022), which illustrates the importance of a forgotten diagnosis by telling the story of a young doctor experience with PCOS. In addition to the endocrine system, PCOS also affects women's and women's metabolism, reproduction, mental health and psychosocial health. The real difficulty is dealing with the underlying issues; The symptoms that appear are only the tip of the iceberg. Undiagnosed and untreated forms of the disease can lead to a number of co-morbidities such as obesity, infertility, diabetes, cardiovascular disease and cancer. In addition, PCOS women and emotional burden require special attention, because it seriously threatens their quality of life. PCOS is a serious problem that requires careful consideration because it has long-term effects on physical and mental health.

1. Education and Awareness Programs:

Develop educational materials or workshops that provide comprehensive information about PCOS/PCOD, its management, and the importance of a healthy lifestyle.

2. Support Groups:

Establish support groups, either in-person or online, where PCOS/PCOD patients can share experiences, receive emotional support, and exchange tips for managing their condition.

3. Healthy Lifestyle Promotion:

Encourage and support the adaptation of a very healthy lifestyle, with regular exercise, a balanced diet, and techniques for management of stress.

4. Mental Health Services:

Provide access to mental health services, counseling, or therapy for those who may need additional support in managing the psychological aspects of PCOS/PCOD.

5. Telehealth Services:

Implement telehealth services to ensure continued access to healthcare professionals, especially in areas where in-person visits may be challenging.

6. Personalized Treatment Plans:

Work with individuals to make personalized treatment plans which consider their unique needs, preferences, and circumstances.

7. Holistic Wellness Programs:

Develop holistic wellness programs that describe not just the physical symptoms but also the mental health and emotional well-being of PCOS/PCOD patients.

8. Health Literacy Initiatives:

Implement initiatives to improve health literacy, ensuring that patients understand their condition, treatment options, and the importance of self-management.

9. Care Coordination:

Facilitate seamless coordination of care among healthcare providers, ensuring that patients receive comprehensive and coordinated support.

10. Patient Empowerment:

Empower patients to actively participate in their healthcare decision-making, fostering a sense of control and ownership over their well-being.

It's very significant to note that while there might not be significant rural-urban differences in psychological dimensions, individual variations still exist. Tailored interventions should consider the unique needs of each patient, and flexibility should be maintained in the approach to accommodate diverse preferences and circumstances.

B. How living in rural or urban areas affects the PS, MW, QOL of PCOS/PCOD patients

Sample

The test was done through a purposive sampling method. The total number of samples was 116 for the data collection purpose. Subjects from both urban and rural were approached to take part in the current study. Self-report questionnaires on psychological dimensions were filled out by the participants via Google Forms. The questionnaires were anonymous, and the subjects were informed about the purpose of the test. The sample target was 150 but 116 participants were accessible.

Psychometric Tools Used

Perceived Stress Questionnaire by **(**Levenstein, etal.,1993) is a 30- item scale that is a tool to estimate life events and situations. The questionnaire identified largely with measures of particularity anxiety and with scores on Cohen's perceived stress scale, relatively with depression, and inadequately with state anxiety. Responses are recorded over 4- point scale where 1 = Infrequently, 2 = occasionally, 3 = frequently, and 4 = generally which

indicates how constantlythey witness certain stress- related passions. High scores indicate higher situations of stress. A total score is set up by adding each item but questions 1, 7, 10, 13, 17, 21, 25, and 29 are positive and are scored according to the directions accompanying the scale. By deducting 30 from the raw score and dividing the result by 90, one can create a PSQ indicator that produces a score between 0 and 1. The scale's internal thickness ranged from 90 to 92, and the test-pretest trustability was established at 82. These results demonstrated the scale's validity and trustability. Levenstein and associates conducted a psychometric evaluation of the scale. The PSQ results were mostly associated with particularity anxiety and Cohen's Perceived Stress Scale scores.

The Mental Well- being Scale: This test is of fourteen particulars which is covering hedonic and eudaimonic aspects of well-being including positive effect (passions of sanguinity, gayness, relaxation), satisfying interpersonal connections, and positive functioning (energy, clear thinking, toneacceptance, particulardevelopment, capability, and autonomy). In this test subjects need to tick the box that explains their experience of each statement. This test is using a 5- point Likert scale. Each of the 14 item responses in mental well-being is scored from 1 none of the time to 5 all of the time and a total scale score is calculated by adding the 14 individual item scores. The minimum score is 14 and the outside is 70. All particulars are scored appreciatively. The overall score for this test is calculated by adding the scores for each item, with equal weights. An advanced mental well-being score indicates an advanced positionof internal well- being.

WHOQOL-BREF - This test is about checking the quality of life, health, or other areas of your life and this questionnaire is grounded on six disciplines which are physical, cerebral, position of independence, social connections, terrain, Spirituality/ Religion/ Personal beliefs with 5- point Lickert scale. This test is a field trial subset of 26 items taken from the WHOQOL-100. This test does not have facet scores. Mean substitutions are recommended for domain 1 and domain 4 if no more than one item is coded missing. Only three statements need to be reversed before scoring. The four sphere scores are gauged in a positive direction with advanced scores indicating an advanced quality of life.

Statistical Analysis

The following are the statistical methods that were used:

Descriptive statistics- The levels of demographic information were made of sense with the assistance of the mean and SD.

t-Test statistics- Statistical technique used to evaluate the data using SPSS software analysis to compare geographical locations on PS, MW, and QOL.

Result and Discussion

Figure 1

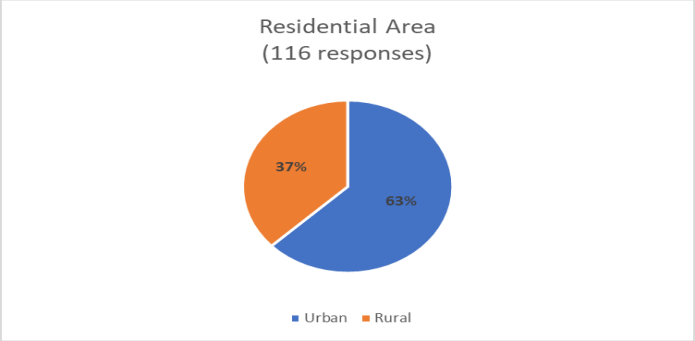

Figure 1 Displays the distribution of participants (PCOS/PCOD patients) in residential areas. Among 116 total responses, 37% are from rural areas, while 62% are from urban areas. Specifically, 43 participants are from rural settings, and 73 are from urban settings. This distribution highlights the need for considering the urban-rural composition when interpreting the study findings, recognizing potential influences on psychological dimensions, and acknowledging the importance of generalizability in future research.

Table 1Group Statistics for PS, MW, and QOL Based on GA

Scales	GA	N	Mean	Std. Deviation	Std. Error Mean
PS	URBAN	73	74.3699	16.88154	1.97583
	RURAL	43	73.6279	14.52588	2.21518
MW	URBAN	73	42.5753	11.52403	1.34879
	RURAL	43	40.0465	10.87144	1.65788
QOL	URBAN	73	82.3425	18.75294	2.19487
	RURAL	43	77.1860	19.46946	2.96906

This table provides a detailed overview of group statistics for key psychological dimensions - Perceived Stress (PS), Mental Well-being (MW), and QOL-amidst participants identified with (PCOS) and Polycystic Ovary Disease (PCOD). The data is stratified based on the participants' residential areas, distinguishing between Urban and Rural contexts.

Perceived Stress (PS): Urban (N=73): PCOS/PCOD patients residing in urban areas reported a mean PS score of 74.37, with a SD of 16.88 and a SE of the mean of 1.98.Rural (N=43): Those in rural areas had a slightly lower mean PS score of 73.63, with a SDof 14.53 and a SE of the mean of 2.22.

Mental Well-being (MW): Urban (N=73): Urban PCOS/PCOD patients had a mean MW score of 42.58, a SD of 11.52, and SE of the mean of 1.35. Rural (N=43): Rural PCOS/PCOD patients had a mean MW score of 40.05, a SD of 10.87, and a SE of the mean of 1.66.

Quality of Life (QOL): Urban (N=73): The mean QOL score for urban PCOS/PCOD patients was 82.34, with SD of 18.75 and a SE of the mean of 2.19. Rural (N=43): Rural PCOS/PCOD patients reported a mean QOL score of 77.19, SD of 19.47, and SE of the mean of 2.97.

This table offers insights into the distribution and variability of Perceived Stress, Mental Well-being, and Quality of Life among PCOS/PCOD patients across different residential areas. It serves as a valuable reference for understanding how these psychological dimensions may vary based on the patients' urban or rural living contexts, providing a foundation for further analysis and discussion in the context of PCOS and PCOD.

Table 2

Scales	t-test for Equality of Means		
	t	Df	Sig. (2-tailed)
PS	.240	114	.810
	.250	98.898	.803
MW	1.165	114	.246
	1.183	92.388	.240
QOL	1.410	114	.161
	1.397	85.545	.166

Independent Samples t-test to find the difference between Urban and Rural PCOS/PCOD patients on PS, MW, QOL

The Autonomous samples t-Test was led to evaluate whether there are massive contrasts between Urban as well as Rural PCOS/PCOD patients on Perceived Stress (PS), Mental Well-being (MW), and Quality of Life (QOL)

Perceived Stress (PS): The t-test results for PS indicate a nonsignificant difference between Urban and Rural PCOS/PCOD patients:

- T-value: 0.240
- Degrees of Freedom (df): 114
- Significance (p-value): 0.810

This supports the hypothesis that there is no residential difference in PS among PCOS/PCOD patients. The small t-value as well as high p-value suggest that the means of the two groups are not statistically different.

Mental Well-being (MW): Similarly, the t-test for MW reveals no significant difference between Urban and Rural PCOS/PCOD patients:

- T-value: 1.165
- Degrees of Freedom (df): 114
- Significance (p-value): 0.246

The non-significant result aligns with the hypothesis that there is no residential difference in MW among PCOS/PCOD patients.

Quality of Life (QOL): The t-test for QOL also indicates no statistically significant difference between Urban and Rural PCOS/PCOD patients:

- T-value: 1.410
- Degrees of Freedom (df): 114
- Significance (p-value): 0.161

This supports the hypothesis that there is no residential difference in QOL among PCOS/PCOD patients.

Interpretation: The t-test for Quality of Life similarly did not find a statistically massive distinction among Metropolitan(U) and Countryside(R) PCOS or PCOD patients (p is greater than 0.05). The t-value is 1.410, and the p-value is 0.161.

In summary, based on these t-test results, there is no strong evidence to suggest that there are significant differences between Urban and Rural PCOS or PCOD sufferers in terms of Perceived Stress, Mental well-being, and QoL

Discussion:

Results of the independent samples t-tests provide valuable insights into the impact of residential areas based upon psychological dimensions of PCOS or PCOD patients. The non-significant findings across all three variables (PS, MW, and QOL) suggest that living in rural or urban areas does not have a discernible impact on the perceived stress, mental well-being, or quality of life among PCOS/PCOD patients.

Implications for Patient Care:

The non-significant differences between Urban and Rural PCOS/PCOD patients have practical implications for patient care. Healthcare interventions should be tailored based on individual needs rather than assuming that residential location alone is a key determinant of psychological well-being in PCOS/PCOD patients. Strategies to enhance coping mechanisms and social support may be particularly beneficial.

Study Restrictions and Future Exploration:

It is fundamental to recognize the impediments of this review, consisting potential confounding factors that were not explicitly addressed. Future research could delve deeper into specific individual and socio-economic factors that may influence the psychological dimensions of PCOS/PCOD patients, contributing to a more nuanced understanding of their experiences.

In conclusion, the non-significant results of the t-tests support the hypothesis that there is no residential difference in perceived stress, mental well-being, as well as QoL among PCOD or PCOS patients. It is underscoring importance of considering individual factors in providing patient-centered care for individuals with PCOS/PCOD, regardless of their urban or rural residence.Therefore, it is necessary to re-evaluate how people in rural and urban areas are traditionally perceived. Future studies could benefit from a deeper comprehension of the elements that really set rural and urban lifestyles apart. This might entail taking into account not just the environment's physical attributes but also the socioeconomic, cultural, and lifestyle elements that affect people's experiences. Campaigns to educate the public about the evolving nature of rural and urban living may also help to clear up misunderstandings and promote a more accurate perception of the variety of lifestyles that fall into these categories.

Conclusion

This study examined the effects of residential environments on perceived stress (PS), psychological well-being (MW), QOL and. Results revealed no significant differences between urban and rural participants on these psychological measures. The use of a patient-centered approach to patient care emerged as an important step in addressing the differences in diagnosis and treatment. Our findings support the hypotheses that residential differences do not significantly affect PS, MW, and QOL in PCOS/PCOD patients. This highlights the importance of personalized care, to improve the well-being of individuals affected by PCOS and PCOD. It is important to acknowledge the limitations of this study, including potential confounding factors that were not explicitly addressed. Future research could examine in more detail the specific individual socioeconomic factors that may influence the psychological outcomes of patients with PCOS/PCOD, thereby contributing to a better understanding of their experiences.

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