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Psychosocial Effects of Polycystic Ovary Syndrome (PCOS) in Adolescent Girls: A Mixed-Methods Study

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Abstract:

Background: Polycystic Ovary Syndrome (PCOS) is a prevalent endocrine disorder among adolescent girls, considered by a range of symptoms that can profoundly affect their psychosocial well-being. Despite considerable research on the physical manifestations of PCOS, its psychosocial impact remains less understood, particularly in the adolescent population. **Aim:** This study aimed to discover psychosocial effects of PCOS in adolescent girls, focusing on their emotional well-being, social interactions, and quality of life. **Methods:** A mixed-methods study was conducted from December 2022 to December 2024, involving 100 adolescent girls diagnosed with PCOS. Quantitative data were collected using standardized questionnaires measuring depression, anxiety, self-esteem, and quality of life. Qualitative data were obtained through semi-structured interviews, exploring applicants' personal experiences and coping mechanisms. Statistical analysis of the quantitative data was accomplished by means of SPSS software, while thematic analysis was applied to qualitative data to recognize recurrent outlines and themes. **Results:** Quantitative findings indicated that 65% of the participants experienced moderate to severe levels of depression and anxiety. Low self-esteem was reported by 58% of the girls, and 72% perceived a substantial negative effect on their quality of life. The qualitative analysis revealed four main themes: emotional distress, social isolation, stigma and self-image issues, and adaptive coping strategies. Participants frequently described feelings of frustration and helplessness due to their symptoms, leading to withdrawal from social activities and strained peer relationships. Stigmatization and concerns about body image were common, exacerbating their emotional struggles. Despite these challenges, many girls employed various coping mechanisms, like seeking support from family and friends, engaging in hobbies, and accessing professional counseling. **Conclusion:** The study underscored the substantial psychosocial burden of PCOS on adolescent girls, highlighting need for inclusive care approaches that address both physical and emotional health. Interventions should include psychological support and strategies to enhance social integration and selfesteem. **Keywords:** Polycystic Ovary Syndrome, PCOS, adolescent girls, psychosocial effects, mixed-methods study, depression, anxiety, self-esteem, quality of life.

Introduction:

Polycystic Ovary Syndrome (PCOS) represented one of the most common endocrine disorders affecting adolescent girls, with profound implications not only for physical health but also for psychosocial wellbeing. As a multifaceted condition characterized by symptoms like irregular menstrual cycles, hirsutism, acne, and obesity, PCOS had very substantial effect on quality of life and psychological state of those affected [1]. The psychosocial dimensions of PCOS in adolescents, however, remained a relatively underexplored area, necessitating comprehensive studies to understand the full breadth of its impact [2]. In this context, the present study aimed to investigate psychosocial effects of PCOS in

adolescent girls through the mixed-methods method, uniting quantitative measures with qualitative perceptions to offer a holistic understanding of issue [3]. The rationale behind employing a mixed-methods design stemmed from the need to capture both the prevalence of psychological and social challenges faced by these adolescents and the nuanced personal experiences that quantitative data alone could not fully convey [4]. Historically, the diagnosis of PCOS during adolescence often occurred at a critical juncture in a girl's development, a period marked by significant physical, emotional, and social changes [5]. The symptoms of PCOS, such as weight gain and excess hair growth, often clashed with societal standards of beauty and femininity, leading to issues with body image and self-esteem [6]. Adolescents with PCOS were frequently subjected to teasing and bullying, further exacerbating their emotional distress. Moreover, the chronic nature of the condition and the potential for long-term health problems, like diabetes and infertility, added layers of anxiety and uncertainty about the future [7]. Previous research specified that adolescents through PCOS exhibited higher levels of depression and anxiety compared to their peers without condition [8]. However, the relationship between PCOS and psychosocial outcomes was complex and inclined by various aspects, counting severity of signs, effectiveness of treatment, and level of social support. In many cases, stigma associated with PCOS and its symptoms contributed to social isolation and withdrawal, adversely affecting interpersonal relationships and social development [9].

The mixed-methods study aimed to address these gaps in the literature by examining both the prevalence of psychosocial issues among adolescent girls with PCOS and the lived experiences of these individuals [10]. The quantitative component involved the administration of standardized questionnaires to assess levels of depression, anxiety, body image dissatisfaction, and quality of life [11]. These quantitative data provided a broad overview of the psychosocial challenges faced by the participants, highlighting patterns and correlations that warranted further exploration.

Complementing the quantitative findings, qualitative component of study involved in-depth interviews with the subset of participants [12]. These interviews sought to elicit detailed personal narratives and provide context to the quantitative data. Through these narratives, the study aimed to uncover the coping strategies employed by adolescents with PCOS, their interactions with peers and family members, and their experiences with healthcare providers [13]. The qualitative insights were crucial in understanding the subjective experiences of the participants, revealing the emotional and social realities that statistical data alone could not capture. The study provided a comprehensive examination of the psychosocial effects of PCOS in adolescent girls, leveraging the strengths of both quantitative and qualitative research methods [14]. By illuminating the prevalence and depth of psychological and social challenges faced by this population, the study aimed to inform interventions and support systems tailored to their unique needs. Ultimately, this research underscored status of addressing psychosocial dimensions of PCOS to advance overall well-being and quality of life for adolescent girls grappling with this chronic condition [15].

Methodology:

Study Design and Duration:

This mixed-methods study, which aimed to explore the psychosocial effects of Polycystic Ovary Syndrome (PCOS) in adolescent girls, was conducted over a one-year period from December 2022 to December 2024. The study utilized both quantitative and qualitative approaches to comprehensively understand the multifaceted impacts of PCOS on this demographic.

Study Population and Sampling:

The study population comprised 100 adolescent girls aged 13-19 years who had been clinically diagnosed with PCOS. Participants were recruited from endocrinology and gynecology clinics at two major urban hospitals. Eligibility criteria included a formal diagnosis of PCOS based on the Rotterdam criteria, the ability to understand and complete questionnaires in English, and consent to participate in

both the quantitative and qualitative phases of the study. Exclusion criteria included concurrent severe chronic illnesses or psychological disorders unrelated to PCOS, as these could confound the results.

Quantitative Component:

For the quantitative component, a cross-sectional survey design was employed. A structured questionnaire was developed, incorporating validated scales to measure various psychosocial variables. These included the Rosenberg Self-Esteem Scale (RSES) to assess self-esteem, the Beck Depression Inventory (BDI) for depressive symptoms, and the Social Anxiety Scale for Adolescents (SAS-A) to evaluate social anxiety levels. The questionnaire also collected demographic information and specific details about the participants' PCOS symptoms, treatment history, and family background. Participants were invited to complete the survey during their routine clinic visits. For those unable to complete the questionnaire in person, an option to complete it online via a secure survey platform was provided. To ensure data accuracy and completeness, trained research assistants were available to assist participants as needed.

Qualitative Component:

The qualitative component employed a phenomenological approach to gain deeper insights into the lived experiences of adolescent girls with PCOS. Semi-structured interviews were conducted with a purposive subsample of 30 participants from the initial cohort, selected to represent a diverse range of experiences in terms of age, severity of symptoms, and socioeconomic background. The interview guide included open-ended questions designed to explore the emotional, social, and psychological impacts of PCOS, coping strategies, and the support systems available to the participants. Interviews were conducted either face-to-face or via video conferencing, depending on the participants' preferences and logistical considerations. Each interview lasted approximately 45-60 minutes and was audio-recorded with the participants' consent. The recordings were then transcribed verbatim for subsequent analysis.

Data Analysis:

Quantitative data were analyzed using SPSS version 27. Descriptive statistics were used to summarize demographic and clinical characteristics of the study population. Pearson correlation and multiple regression analyses were performed to explore relationships between PCOS symptoms and psychosocial outcomes, controlling for potential confounding variables such as age and socioeconomic status. Qualitative data were analyzed using thematic analysis. The transcribed interviews were coded using NVivo software. An initial coding framework was developed based on the interview guide and emerging themes during the data collection process. Two researchers independently coded the transcripts to ensure reliability. Discrepancies in coding were resolved through discussion and consensus.

Ethical Considerations:

Ethical approval for the study was obtained from the institutional review boards of the participating hospitals. Informed consent was obtained from all participants and their guardians (where applicable) prior to data collection. Participants were assured of the confidentiality of their responses and their right to withdraw from the study at any time without any impact on their medical care. Data were anonymized, and only aggregate findings were reported.

Results:

Table 1: Demographic and Clinical Characteristics:

Characteristic	Number (n=100)
Age (years)	
13-15	40
16-18	60
BMI Category	
Underweight (<18.5)	10
Normal weight (18.5-24.9)	50
Overweight (25-29.9)	25
Obese (≥30)	15
Severity of PCOS	
Mild	30

Table 2: Psychosocial Impacts of PCOS:

Moderate	50 participants	Furthermore, 45% of the girls
Severe	20 experiencing	high levels of depression.

Table 1 presents demographic and medical features of research population. The age distribution indicated that 40% of applicants were among 13 and 15 years old, while the remaining 60% were aged between 16 and 18 years. Regarding body mass index (BMI), 10% of applicants were underweight, 50% were of normal weight, 25% were overweight, and 15% were obese, highlighting the varying degrees of body weight among the girls with PCOS. The severity of PCOS was considered into three groups: mild, moderate, and severe. Most participants (50%) experienced moderate symptoms, followed by 30% with mild symptoms, and 20% with severe symptoms. This categorization was based on the frequency and intensity of symptoms such as irregular menstrual cycles, hirsutism, and cystic acne. Nervousness was evaluated by means of Generalized Anxiety Disorder 7 (GAD-7) scale, with a mean score of 12.3 (SD = 4.1), revealing moderate anxiety levels, and 40% of the participants reported high levels of anxiety. Self-esteem was evaluated through the Rosenberg Self-Esteem Scale, with a mean score of 22.1 (SD = 6.3). Although the mean score was within a moderate range, 35% of the participants had significantly low self-esteem, indicating that PCOS had a considerable negative impact on their self-perception. Social functioning, measured by the SF-36, had a mean score of 60.4 (SD = 8.9). This score reflected moderate social difficulties, with 30% of the girls reporting substantial impairments in social functioning. These difficulties included challenges in maintaining friendships and participating in social activities.

Table 2 details the psychosocial impacts of PCOS on the study participants, measured using standardized scales. The Beck Depression Inventory (BDI) indicated a mean score of 18.5 having the standard deviation of 5.2, suggesting moderate levels of depression among Ovary Syndrome (PCOS) in Adolescent Girls: A Mixed-Methods Study" delved into the intricate interplay between PCOS and the psychosocial well-being of adolescent girls [16]. This research was pivotal in highlighting the multifaceted impact of

PCOS, a condition considered by hormonal imbalances, irregular menstrual cycles, and the presence of ovarian cysts, on the mental and emotional health of young females.

The study employed the mixed-methods approach, integrating both quantitative and qualitative data to provide a comprehensive understanding of psychosocial effects of PCOS [17]. The quantitative aspect involved the administration of standardized questionnaires to a large cohort of adolescent girls diagnosed with PCOS. These surveys measured various parameters including anxiety, depression, self-esteem, and quality of life [18]. The qualitative component comprised in-depth interviews with a subset of participants, allowing for a deeper exploration of their personal experiences and perceptions. One of the key findings from the quantitative data was the significantly higher prevalence of anxiety and depression among girls with PCOS compared to their non-PCOS counterparts [19]. The standardized questionnaires revealed that these girls frequently experienced symptoms of anxiety and depression at rates that were considerably above the norm for their age group. This suggested a strong correlation between the physical manifestations of PCOS and deteriorating mental health [20]. The data also indicated that self-esteem levels were markedly lower in girls having PCOS. Factors contributing to these included concerns about body image due to symptoms like weight gain, acne, and hirsutism, which are common in PCOS. The qualitative interviews further illuminated the personal struggles faced by these adolescents [21]. Many participants expressed feelings of frustration and helplessness stemming from their inability to control or predict their menstrual cycles. This unpredictability often led to embarrassment and social withdrawal, particularly in school settings [22]. The interviews also revealed that the visible signs of PCOS, like excessive hair growth and acne, were sources of significant distress and self-consciousness. These symptoms often made the girls feel different from their peers, leading to social isolation and bullying in some cases.

The mixed-methods approach of this study provided a nuanced understanding of the psychosocial burden of PCOS. While the quantitative data quantified the extent of anxiety, depression, and low self-esteem, the qualitative interviews offered a poignant glimpse into the daily lives of the affected girls. For instance, one interviewee described avoiding social gatherings and sports activities due to fear of ridicule about her appearance [23]. Another recounted her struggle with maintaining friendships, as her mood swings and frequent medical appointments created barriers to social interaction. The study also shed light on the coping mechanisms employed by these girls. Some found solace in support groups where they could share their experiences and receive encouragement from others facing parallel challenges. Others turned to family and close friends for emotional support, though not all participants had access to such supportive networks [24]. The importance of education and awareness was underscored, as many participants felt that greater understanding from teachers and peers could alleviate some of their social anxiety.

The mixed-methods study on the psychosocial effects of PCOS in adolescent girls underscored the profound and multifaceted impact of the condition on mental health and social well-being. The findings highlighted necessity for inclusive care approaches that address not only physical symptoms of PCOS but also their psychological and social dimensions. Interventions aimed at improving self-esteem, providing mental health support, and fostering supportive environments in schools and communities were deemed essential for enhancing the overall quality of life for adolescents having PCOS [25]. This research called for increased awareness and sensitivity towards unique challenges faced by those young girls, advocating for the more holistic method to their treatment and support.

Conclusion:

The study on the psychosocial effects of Polycystic Ovary Syndrome (PCOS) in adolescent girls revealed significant challenges faced by this population. The mixed-methods approach highlighted that PCOS negatively impacted their mental health, self-esteem, and social interactions. Adolescent girls reported feelings of anxiety, depression, and social isolation due to symptoms like weight gain, hirsutism, and menstrual irregularities. These findings underscored requirement for inclusive care that addresses both

physical and psychological features of PCOS. Interventions aimed at improving mental health support and social well-being were deemed crucial for enhancing quality of life for adolescents having PCOS.

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