Polycystic Ovarian Syndrome (PCOS) in Adolescent Girls: Delayed Diagnosis, Stigma, and Quality of Life in Senior High School in Makassar City

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Abstract

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder in women of reproductive age with a global prevalence of 5–15%. In Indonesia, especially in Makassar City, evidence on delayed diagnosis of PCOS in adolescents is limited, while the lack of school-based screening and low reproductive health literacy are suspected to hinder early detection. This study aimed to identify factors associated with delayed diagnosis of PCOS, explore social stigma, and assess the quality of life of adolescent girls. A mixed-methods study with a sequential explanatory design involved 37 female students in the quantitative phase and 10 participants in the qualitative phase. Quantitative data were collected using SF-36, PCOS-Q, and social stigma scales, while in-depth interviews were conducted to explain quantitative findings. Integration of results used a joint display approach. A total of 27 of 37 respondents (73.0%) experienced a delay in PCOS diagnosis of more than 12 months. The mean social stigma score was 68.4 (scale 0–100), while the SF-36 quality of life score was 52.3 and lower than that of the healthy population (mean difference = −27.7; 95% CI: −34.5 to −20.9; $p < 0.001$; Cohen's $d = 1.31$). Integration through joint display showed that normalization of symptoms by families, limited knowledge of school health workers, and internalization of stigma related to changes in physical appearance explained the high delay in diagnosis and low quality of life. The delay in PCOS diagnosis in adolescents in Makassar is still high and is influenced by individual, family, and school service system factors. These findings support the integration of PCOS symptom screening into UKS programs, training of UKS teachers and officers, and strengthening referral systems to improve early detection.

Keywords: Adolescent PCOS, Delayed Diagnosis, Social Stigma, Quality of Life

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder in women of reproductive age, with a global prevalence ranging from 5% to 15% depending on the diagnostic criteria used (Neven et al., 2024). In adolescents, the diagnosis of PCOS becomes more complicated because symptoms such as irregular menstrual cycles and hyperandrogenism are often similar to the physiological changes of puberty (Meczekalski et al., 2023). Research shows that many adolescents are not diagnosed at an early stage, so treatment is only done after symptoms have worsened. Recent diagnostic criteria recommend not using polycystic ovary morphology as the basis for diagnosis in adolescents, but instead focusing on irregular menstrual cycles and hyperandrogenism (Teede et al., 2024). This aims to avoid overdiagnosis and ensure that at-risk adolescents get follow-up evaluations (Neven et al., 2024).

Delayed diagnosis of polycystic ovary syndrome (PCOS) in adolescents can have a serious impact on physical and psychosocial health. Research shows that PCOS diagnosis is often delayed between two and five years after the first symptoms appear, which increases the risk of metabolic disorders, type 2 diabetes mellitus, and cardiovascular disease (Conlon et al., 2021). Clinical symptoms such as hirsutism and central obesity can damage body image and self-esteem, as well as increase anxiety and depression (Meczekalski et al., 2023). In developing countries, low reproductive health literacy and limited access to specialist services exacerbate this situation (Trent & Gordon, 2020). Therefore, it is important to increase awareness and access to the diagnosis and management of PCOS to prevent adverse long-term impacts for adolescent girls (Conlon et al., 2021; Trent & Gordon, 2020).

In Indonesia, research on Polycystic Ovary Syndrome (PCOS) in adolescents is still limited, with a primary focus on clinical characteristics and prevalence in hospitals and fertility clinics. At the same time, aspects of delayed diagnosis, social stigma, and quality of life are almost understudied, especially in Eastern Indonesia (Savira et al., 2025). PCOS, which affects 6-10% of adolescent girls, is characterized by menstrual cycle irregularities and hyperandrogenism that can trigger long-term health problems such as metabolic syndrome and infertility (Oberfield, 2022). The quality of life of adolescents with PCOS tends to be lower compared to healthy adolescents, with significant impacts of physical and psychological symptoms (Saei Ghare Naz et al., 2020). Therefore, it is important to integrate PCOS screening in adolescent health programs in schools to detect cases early, reduce stigma, and improve quality of life (Savira et al., 2025)

The city of Makassar, which is the center of education and health services in Eastern Indonesia, faces challenges in the diagnosis and management of Polycystic Ovary Syndrome (PCOS) in adolescents, which are often late and affected by social stigma. Research shows that PCOS can be detected during puberty, but proper diagnosis is often hampered by a lack of understanding of diagnostic criteria (Indonesia, 2022). Therefore, this research offers novelty through a *mixed-methods sequential explanatory* design that integrates quantitative analysis and qualitative exploration using the *Joint Display*, thus not only measuring the magnitude of the problem but also explaining the social and cultural mechanisms behind it (Yin et al., 2022). This contribution is expected to enrich the evidence on PCOS in school adolescents in Indonesia, especially in Makassar City, as well as provide a scientific basis for the development of school-based early detection programs.

In the context of adolescents with chronic conditions such as PCOS, stigma can affect their social interactions, treatment-seeking behaviors, and quality of life, as found in studies

exploring the experience of stigma in adolescents with other chronic illnesses. The study also shows that the stigma experienced can cause adolescents to hide their condition and develop negative feelings about themselves, which ultimately affects their quality of life (Thomas & Lipps, 2025).

In addition, the experience of this stigma can vary based on the social and cognitive development of adolescents, which points to the need for a holistic approach in healthcare to support their quality of life. Thus, stigma is an important basis for developing research instruments and exploring qualitative data related to PCOS (Tworek et al., 2023). Based on this evidence gap, this study aims to analyze the delay in PCOS diagnosis in adolescent girls at Cokroaminoto Tamalanrea High School, Makassar City, and the factors that influence it, explore the social stigma experienced, and evaluate its relationship with quality of life through a mixed-methods approach that integrates quantitative and qualitative findings.

METHOD

This research uses a mixed-methods sequential explanatory design that begins with collecting and analyzing quantitative data before proceeding to a qualitative phase to provide a more in-depth explanation of the quantitative results. The research process consists of four stages: quantitative data collection, participant selection for the qualitative phase, qualitative data collection, and integration of results using the *Joint Display* (Papageorgiou et al., 2023). Thus, this approach not only provides statistical data but also in-depth insights from the perspective of the participants (Guest et al., 2020).

The research population is 186 students in grades X–XII for the 2025/2026 school year. Participant selection was carried out by *purposive sampling*. The inclusion criteria included students aged 15–18 years who showed at least one symptom that leads to PCOS (menstrual cycle disorders, hirsutism, or persistent acne) and provided written consent from participants and parents/guardians. The exclusion criteria were students with endocrine disorders, undergoing hormonal therapy, or not participating in the entire research series. From the results of the initial screening, 37 participants were obtained who met the criteria for the quantitative phase. There were no participants who refused to participate after meeting the inclusion criteria, so the potential for selection bias could be minimized.

The qualitative phase used *purposeful maximum variation sampling*. A total of 10 participants were selected based on quantitative results by taking into account variations in quality of life scores, levels of social stigma, and late diagnosis status (>12 months and ≤12 months). This strategy allows for the exploration of experiences that represent various

characteristics of participants. In addition to in-depth interviews, *Focus Group Discussions* (FGD) were held, consisting of 8–10 participants each to confirm and enrich the ideas that emerged during the interviews. Quantitative data were collected using PCOS symptom screening questionnaires, *Short Form-36* (SF-36), *Polycystic Ovary Syndrome Health-Related Quality of Life Questionnaire* (PCOSQ), and *PCOS Social Stigma Scale*. The stigma instrument consists of 20 items in four dimensions, namely *perceived stigma*, *enacted stigma*, *internalized stigma*, and *Disclosure Concerns* (Yendewa et al., 2023).

Quantitative data were collected through a questionnaire that participants filled out for 35–45 minutes. After the initial analysis was completed, the qualitative phase was carried out for about one week, using in-depth interviews (30–60 minutes) and FGDs (60–90 minutes). Quantitative analysis was carried out using SPSS version 26 through descriptive statistics and Pearson or Spearman correlation tests according to the distribution of data assessed by the Shapiro–Wilk test. Scores with $p < 0.05$ are considered statistically significant. Qualitative data is analyzed using thematic analysis through the stages of familiarization, initial coding, theme development, theme review, theme definition, and report preparation. The integration of the two phases is carried out after the entire analysis is completed using a *Joint Display Matrix* to compare, confirm, or explain quantitative results through qualitative findings (Sukarya et al., 2021).

This research has received ethical approval from the Ethics Committee of the Muslim University of Indonesia Makassar City, with reference number: 912/B.6/KEP-UMI/IX/2026. All respondents were informed about the purpose of the study, the benefits, procedures, and potential risks, as well as their right to withdraw at any time without affecting the health services they received. The confidentiality of the respondents was maintained throughout the research process.

RESULTS

Respondent Characteristics

In general, the characteristics of the respondents describe the diversity of age backgrounds, grade levels, and socioeconomic conditions regarding the condition of adolescent girls who experience PCOS symptoms at Cokroaminoto Tamalanrea High School, Makassar City. Based on the results of the study, as many as 13 students (35.1%) came from class X, 14 students (37.8%) came from class XI, and 10 students (27.0%) came from class XII. Respondents ranged in age from 15–18 years, with an average age of 16.5 ± 0.9 years. Judging from the socioeconomic conditions of the family, as many as 19 people (51.4%) came from

families with lower middle-income levels. Furthermore, 12 people (32.4%) came from middle-income families, while 6 people (16.2%) came from families with middle-to-upper income levels.

Table 1. Demographic Characteristics of Respondents (n=37)

Features	n	%	Network ± SD
Age (years)			
15 years	8	21,6	-
16 years old	12	32,4	-
17 years	11	29,7	-
18 years old	6	16,2	-
Total	37	100,0	16.5 ± 0.9
Classes			
Class X	13	35,1	-
Class XI	14	37,8	-
Class XII	10	27,0	-
Total	37	100,0	-

Source: Primary data of the study, Cokroaminoto Tamalanrea High School, Makassar City, 2026

Delayed Diagnosis of PCOS

Based on the results of the study, as many as 14 people (37.8%) had received an official diagnosis of PCOS from a specialist, including an obstetrician, gynecologist, and pediatrician. Meanwhile, another 23 respondents (62.2%) had never received a formal diagnosis, despite showing symptoms that suggested PCOS and potentially requiring further examination.

Table 2. Distribution of PCOS Diagnosis Delay

Duration of Delay	n	%
Dominant Symptoms of PCOS	37	100
Irregular menstrual cycles	32	86,5
Chronic Acne	28	75,7
Hirsutism	18	48,6
Unnatural weight gain	22	59,5
PCOS Diagnosis Status (doctor-confirmed)	14	37,8
Undiagnosed (>0 months without diagnosis)	23	62,2
< 6 months	2	5,4
6 – 12 months	5	13,5
13 – 24 months	5	13,5
> 24 months	2	5,4
Total delay ≥12 months (diagnosed & undiagnosed)	27	73

Source: Primary data of the study, Cokroaminoto Tamalanrea High School, Makassar City, 2026

Further analysis showed that the problem of delayed diagnosis was still quite serious. A total of 27 respondents (73.0%) experienced a delay in diagnosis of more than 12 months from the first symptoms they experienced. These findings show that most adolescent girls with PCOS symptoms take a long time to get certainty of diagnosis and proper treatment. The

average time of delay in diagnosis experienced by respondents reached 18.4 ± 7.2 months. In other words, most respondents had to wait more than a year from the onset of symptoms to get an adequate diagnosis or medical evaluation. The quantitative data was reinforced by the results of in-depth interviews that showed the same pattern. One of the informants (Informant 3, age 17) said the following:

"Na said my mother was normal, because she was young; her periods weren't smooth either. So I thought there was no need to go to the doctor."

The statement describes a tendency to normalize symptoms that are inherited between generations, where experiences experienced by mothers are considered common, so that PCOS symptoms in adolescents are not seen as a condition that requires medical attention. As a result, adolescents and their families tend to delay or not have early health checkups.

Social Stigma

The results of social stigma measurement using a 20-item stigma scale with a score range of 0–100 showed that all respondents (n=37) had an average score of 68.4 ± 12.7. Based on the criteria used, the score was included in the high stigma category because it was above *the 60 limit*. The results of this study showed that most adolescent girls who experienced PCOS symptoms felt pressure, negative judgment, or unpleasant treatment from the surrounding environment

Table 3. Distribution of Respondents' Social Stigma Score (n=37)

Stigma Dimension	Average	SD	Categories
Stigma based on physical appearance (hirsutism, acne, weight)	72,6	14,3	Height
Interpersonal social stigma (peers, family)	67,8	13,1	Height
Stigma from institutions (schools, health services)	61,2	15,8	Height
Total Stigma Score	68,4	12,7	Height

Source: Primary data of the study, Cokroaminoto Tamalanrea High School, Makassar City, 2026

Further analysis of each dimension of stigma showed that stigma associated with physical appearance had the highest scores, at 72.6 ± 14.3. The results showed that the physical changes that often accompany PCOS, such as acne, excess hair growth, or weight changes, were the main sources of the stigma experiences felt by respondents. The next dimension is interpersonal social stigma, with an average score of 67.8 ± 13.1. This form of stigma appears in daily interactions with peers, family, or social environments, for example, through negative comments, ridicule, or treatment that makes respondents feel different from others.

Meanwhile, institution-derived stigma obtained an average score of 61.2 ± 15.8. This dimension included respondents' experiences of interacting with various institutions or

systems, including schools and health services, which sometimes did not fully understand the condition of PCOS and the needs of adolescents who experienced it. Overall, the results showed that social stigma is still a considerable problem for adolescent girls with PCOS symptoms, especially stigma associated with changes in physical appearance.

The results of in-depth interviews and FGDs provided a deeper understanding of how social stigma is experienced by adolescent girls who have symptoms of PCOS. The thematic analysis yielded three main themes that shed light on their experiences.

Theme 1: Bullying/negative comments about physical appearance

All of the informants interviewed admitted that they had received negative comments or treatment related to the physical changes they experienced. This form of comment is generally related to excessive hair growth on the face, weight gain, and acne-prone skin conditions. Such negative comments come not only from peers but also from family members, and in some cases from teachers. One of the informants (Informant 7, age 16) said the following:

"In class, I am often called a woman with a mustache. I am so shy that I don't want to go to school."

The statement suggests that physical changes related to PCOS can be a reason for degrading ridicule, thus affecting the confidence and comfort of adolescents in activities in the school environment.

Theme 2: Reproductive health stigma and the idea that the topic is taboo

Most informants, eight out of ten people interviewed, revealed that they find it difficult to talk about menstruation, hormones, or reproductive health issues to those around them. Many of them find this topic embarrassing or inappropriate to talk about openly, whether with parents, guidance and counseling teachers, or other adults. As a result, adolescents tend to keep their complaints to themselves and do not seek the right information or help. This condition creates limited communication and access to information, which can ultimately slow down the process of seeking help and diagnosing PCOS.

Theme 3: Internalization of stigma and its impact on psychological conditions

Nine out of ten informants showed internalization of stigma (*self-stigma),* which is a condition in which negative judgments from the environment begin to be accepted and believed by individuals as part of themselves. This can be seen in the appearance of feelings of shame, inferiority, feeling worthless, fear of being rejected by others, and a tendency to avoid social interactions. Overall, the results of the study show that the impact of PCOS is not only felt in aspects of physical health, but also greatly affects the psychological well-being and social life of adolescent girls.

Quality of life measurements were conducted using the PCOS-Q instrument, which provides a more specific picture of the aspects of life that are most affected by PCOS symptoms. The aspect that obtained a low score was mental health-related issues, with an average score of 44.8 ± 15.6. This condition suggests that mental health issues due to PCOS can affect adolescents' confidence and comfort in their own bodies.

Table 4. Quality of life score (SF-36) per domain (n = 37)

Domain SF-36	Average	SD	Categories
Physical Function	63,4	14,1	Medium
Physical Role	58,7	16,3	Medium
Body pain	55,2	17,8	Medium
General Health	53,8	15,4	Medium
Vitality (Vitality)	50,6	14,7	Low
Social Functioning	47,3	16,2	Low
Emotional Role	49,1	18,4	Low
Mental Health	44,8	15,6	Low
SF-36 Total Score	52,3	13,8	Low-Medium

Source: Primary data of the study, Cokroaminoto Tamalanrea High School, Makassar City, 2026

The results showed a significant association between the duration of delayed diagnosis, social stigma, and quality of life in adolescent girls with PCOS. The duration of delayed diagnosis was moderately positively correlated with social stigma ($rs = 0.543$; 95% CI: 0.266–0.737; $p < 0.001$), while quality of life SF-36 showed a strong negative correlation ($rs = -0.612$; 95% CI: −0.781 to −0.359; $p < 0.001$). The most influential association was found between social stigma and quality of life ($rs = -0.684$; 95% CI: −0.825 to −0.462; $p < 0.001$), suggesting that the higher the social stigma and the longer the delay in diagnosis, the lower the respondents' quality of life.

Table 5. Spearman Correlation Matrix Between Key Variables (n=37)

Variable	Duration of Delay	Stigma Score	SF-36 Score
Duration of Delay in Diagnosis	1,000	0.543** (95% CI: 0.266–0.737)	-0.612** (95% CI: −0.781–−0.359)
Social Stigma Score	0.543** (95% CI: 0.266–0.737)	1,000	-0.684** (95% CI: −0.825–−0.462)
Quality of Life Score (SF-36)	-0.612** (95% CI: −0.781 –0.359)	-0.684** (95% CI: −0.825 −0.462)	1,000

Remarks: p < 0.001, Spearman correlation test, bidirectional. CI of 95% was calculated using the Fisher-Z transform approach

One-sample *t-test* analysis showed that the total SF-36 score in the respondents (52.3 ± 13.8) was significantly lower than the healthy population reference value of 80.0. The mean difference of −27.7 points (95% CI: −34.5 to −20.9; $t = -8.27$; df = 36; $p < 0.001$) showed a

statistically significant difference in quality of life. The magnitude of the effect was also relatively large (Cohen's d = 1.31), which suggests that the difference in SF-36 score was not only statistically significant but also had a substantial magnitude of effect.

Table 6. Results of One-Sample t-Test SF-36 Score Compared to Healthy Population Reference Values (n = 37)

Variable	Average Sample ± Elementary School	Reference Value	Average Difference	95% Cl Difference	t	df	p	Cohen's d
Total SF-36 score	52.3±13.8	80,0	-27,7	- 34.5 to - 20.9	- 8,27	36	<0.001	1,31

Remark: One-sample t-test; healthy population reference value = 80.0; CI = confidence interval 95%; df = degrees of freedom. The mean difference is calculated as the sample average minus the reference value. The p< value of 0.001 indicates that the sample average SF-36 score is significantly lower compared to the healthy population reference value

DISCUSSION

The results of this study confirm that PCOS in adolescent girls is not just an endocrinological clinical problem, but a biopsychosocial phenomenon that involves a complex interaction between delayed symptom recognition, the construction of social stigma, and a decline in quality of life. These three dimensions do not stand alone, but reinforce each other in a circle that, if not intervened, has the potential to accumulate a psychosocial burden that becomes heavier with age (Teede et al., 2023).

The delay in diagnosis found in this study was relatively shorter than the results of other studies. An international survey by Dokras et al. of 1,385 women with PCOS from 32 countries reported that nearly one-third of respondents took more than two years to get a definitive diagnosis, and nearly half of them had to see three or more healthcare workers before certainty of diagnosis was obtained (Dokras et al., 2022). A similar study was reported by Peebles et al. in a population-based cohort in the U.S., which showed that half of women who retrospectively met the Rotterdam criteria were never diagnosed until age 35, with a much longer delay span than the study's findings (Moran et al., 2020; Peebles et al., 2025).

This difference does not necessarily indicate better access to adolescent health services, but it can be explained methodologically. First, the study population was school-age adolescents with relatively new postmenarche symptoms, so the temporal distance between onset and reporting was shorter and potentially reduced *Recall bias* (Fitzgerald et al., 2024). Second, the definition of delay in this study was calculated from the onset of initial symptoms, including menstrual irregularities, whereas studies in adult women generally calculated it from the time of actively seeking help, for example, related to difficulties in obtaining pregnancy

(Fernandez et al., 2021). Therefore, the duration of delays between studies needs to be compared taking into account population differences and operational definitions.

The pattern of normalization of symptoms by families that appeared in the qualitative data of this study, as illustrated by the statements of informants who considered menstrual irregularities to be normal because they were inherited from the mother's experience, is consistent with the findings of the study of adolescent PCOS diagnosis in Australia, which showed that the overlap of PCOS symptoms with normal physiological variations after puberty often caused families and primary health workers to delay further evaluation (Manique & Ferreira, 2022). Thus, delays in the adolescent population not only reflect health literacy failures, but also reflect the diagnostic ambiguity inherent in developmental stages.

The results showed that stigmas related to physical appearance (hirsutism, acne, and weight change) were the highest dimensions compared to interpersonal and institutional stigma, which can be explained through objectification theory. In adolescents, increased self-awareness and sensitivity to social judgments make physical changes that deviate from beauty norms more easily the target of negative comments, ridicule, and judgments (Daniels et al., 2020). These findings are consistent with mixed-method studies in China that showed that self-objectification and anxiety about appearance were strongly correlated with depression and a more fragile body image in women with PCOS (Yin et al., 2022).

The adolescent context in this study faces additional vulnerability due to intensive exposure to social media and ideal body image. Exposure to sexualization and normalized standards of appearance on social media can encourage self-objectification and increase the pressure to conform the body to certain norms (Papageorgiou et al., 2023). In adolescents with PCOS symptoms, these pressures are increasingly complex because physical changes due to hormonal processes are faced with digital appearance standards that are difficult to achieve (Shereda et al., 2025).

Based on the mental health literature, stigma experienced repeatedly does not stop as an external social experience, but is processed through stages of self-awareness, approval, and application, which in turn erodes the individual's self-esteem and sense of empowerment (Satish et al., 2025). This pattern is relevant to be applied in the context of adolescent PCOS who repeatedly receive negative comments about their appearance, as illustrated in the theme of "internalization of stigma" in qualitative findings, and gradually begin to believe these judgments as part of their self-identity, triggering shame, avoidance of social interactions, and decreased self-esteem (Fitzgerald et al., 2024).

The psychometric literature on body objectification confirms that body shyness, anxiety about appearance, and dissatisfaction with the body are interrelated but empirically separable constructs (Waldrop et al. 2025)Thus, instruments that are not carefully designed to distinguish the experience of stigma originating from external sources (the treatment of others) from negative evaluations originating from oneself are at risk of causal or descriptive interpretations of the resulting scores.

The second methodological issue that is no less important is the potential for misclassification bias stemming from the lack of criteria used to identify "symptoms of PCOS" in this study, considering that the majority of respondents (62.2%) did not have a formal diagnosis from a specialist (Kandhari, 2024). International evidence-based diagnostic guidelines for PCOS in adolescents expressly state that menstrual cycle irregularities and mild signs of hyperandrogenism, such as acne and hair growth, are very common phenomena encountered in the first two to three years postmenarche due to immaturity of the reproductive system, and therefore cannot be immediately considered manifestations of PCOS without careful clinical evaluation and removal of the differential diagnosis (Teede et al., 2023).

The methodological implications of potential bias in research regarding delayed diagnosis of PCOS in adolescents are important to understand, especially in the context of the relationship between delayed diagnosis, stigma, and quality of life. If some of the respondents categorized as "late diagnosed" do not actually have PCOS, then the results may reflect the experiences of adolescents with normal puberty variations who experience psychosocial distress, not just those with PCOS. This can obscure the association between the duration of delayed diagnosis and quality of life, potentially reinforcing or weakening the strength of observed statistical associations, depending on the classification bias that occurs (Savira et al., 2025). Therefore, further research confirming diagnostic status through hormonal examinations and specialist evaluations is urgently needed to more accurately separate these groups, as well as to improve understanding of the psychosocial patterns associated with PCOS in adolescents (Er & Ata, 2023; Fernandez et al., 2021).

In the National Health Insurance system, adolescents with suspicion of PCOS access specialist services through a tiered referral from FKTP, such as a health center, to a follow-up referral facility according to medical indications (Regulation of the Minister of Health Number 16 of 2024; Indonesia, 2024). This framework is strengthened through PKPR, which provides counseling, reproductive health checks, and friendly referrals and maintains adolescent confidentiality (Health, 2024). This condition is relevant to SMA Cokroaminoto Tamalanrea as a strategic partner of PKPR, which should be able to support early screening of PCOS

symptoms through the collaboration of UKS, school counselors, and health centers to strengthen the early detection of PCOS symptoms systematically.

The results imply three main strategies: increasing the capacity of FKTP/PKPR health workers in recognizing PCOS *red flags*, integrating menstrual disorder and hyperandrogenism screening with clear *referral pathways*, and reproductive health education involving adolescents, families, and teachers to reduce stigma (Teede et al., 2023). Such an integrated approach has the potential to accelerate the recognition of PCOS, reduce the normalization of symptoms, and improve service responses to adolescents' psychosocial needs; while longitudinal studies with larger samples, validated stigma instruments, and clinical diagnostic confirmation are needed to test the temporal relationship between delayed diagnosis, stigma, and quality of life.

CONCLUSION

This study shows that delayed recognition of PCOS in adolescent girls is associated with normalization of symptoms by family and social stigma associated with changes in physical appearance. These findings confirm the scientific contribution that family factors and social stigma are important contexts that need to be considered along with clinical symptoms in understanding the process of PCOS recognition in adolescents. Strengthening early detection, reproductive health literacy, and stigma reduction need to be part of a more responsive service approach to the needs of adolescents with symptoms that lead to PCOS, particularly through the involvement of families, schools, and primary health services.

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