

Antidepressant Use and Suicidal Ideation in Young People with Polycystic Ovary Syndrome: Systematic Review

Uso de Antidepressivos e Ideação Suicida em Jovens com Síndrome do Ovário Policístico: Revisão Sistemática

Uso de Antidepressivos e Ideación Suicida en Jóvenes con Síndrome de Ovario Poliquístico: Revisión Sistemática

RESUMO

Objetivo: Investigar a relação entre o uso de antidepressivos e o aumento do risco de ideação suicida em adolescentes com síndrome dos ovários policísticos (SOP). **Método:** Revisão sistemática da literatura conforme o protocolo PRISMA. **Resultados:** Foram incluídos 24 artigos que apontam alta prevalência de depressão e ansiedade em mulheres com SOP, especialmente adolescentes. Evidências indicam que alguns antidepressivos, por seus efeitos ansiogênicos, podem elevar o risco de ideação suicida, o que é especialmente preocupante nesse grupo, que já apresenta risco até 8 vezes maior de suicídio. **Conclusão:** A escolha do antidepressivo deve ser criteriosa, avaliando os riscos específicos de cada classe medicamentosa. Intervenções não farmacológicas, como a terapia cognitivo-comportamental, mostraram eficácia na redução da fadiga e na melhora da qualidade de vida, reforçando a importância de abordagens terapêuticas combinadas.

DESCRIPTORES: Antidepressivos; Ideação suicida; Síndrome do ovário policístico.

ABSTRACT

Objective: To investigate the relationship between antidepressant use and the increased risk of suicidal ideation in adolescents with polycystic ovary syndrome (PCOS). **Method:** Systematic literature review according to the PRISMA protocol. **Results:** Twenty-four articles were included, highlighting a high prevalence of depression and anxiety in women with PCOS, especially adolescents. Evidence suggests that some antidepressants, due to their anxiogenic effects, can increase the risk of suicidal ideation, which is especially concerning in this group, which already has an up to eight-fold increased risk of suicide. **Conclusion:** Antidepressant selection should be judicious, considering the specific risks of each drug class. Non-pharmacological interventions, such as cognitive-behavioral therapy, have shown efficacy in reducing fatigue and improving quality of life, reinforcing the importance of combined therapeutic approaches.

DESCRIPTORS: Antidepressive agents; Polycystic ovary syndrome; Suicidal ideation.

RESUMEN

Objetivo: Investigar la relación entre el uso de antidepresivos y el aumento del riesgo de ideación suicida en adolescentes con síndrome de ovario poliquístico (SOP). **Método:** Revisión sistemática de la literatura según el protocolo PRISMA. **Resultados:** Se incluyeron veinticuatro artículos que destacan una alta prevalencia de depresión y ansiedad en mujeres con SOP, especialmente adolescentes. La evidencia sugiere que algunos antidepresivos, debido a sus efectos ansiogénicos, pueden aumentar el riesgo de ideación suicida, lo cual es especialmente preocupante en este grupo, que ya tiene un riesgo de suicidio hasta ocho veces mayor. **Conclusión:** La selección de antidepresivos debe ser juiciosa, considerando los riesgos específicos de cada clase de fármaco. Las intervenciones no farmacológicas, como la terapia cognitivo-conductual, han demostrado eficacia en la reducción de la fatiga y la mejora de la calidad de vida, lo que refuerza la importancia de los enfoques terapéuticos combinados.

DESCRIPTORS: Antidepresivos; Ideación Suicida; Síndrome del Ovario Poliquístico.

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INTRODUCTION

Polycystic ovary syndrome (PCOS) is an endocrine disorder characterized by menstrual irregularities, risk of infertility, and in some cases, weight gain and obesity. These factors affect women's self-esteem and can impact mental health, with depression, anxiety, and even suicidal ideation being found in women with PCOS¹.

Some notes and research results have associated depression and anxiety in this group of women with demographic and socioeconomic factors, which are considered to be situations that aggravate the predisposition resulting from PCOS^{1,2}. Other studies also point out that, among women with PCOS, adolescents have a lower quality of life when compared to adult women, in which a progression of risk is observed with advancing age³. It is important to note that evidence-based clinical psychopharmacological aspects that could

contribute to more effective and safer outcomes are still under-explored, especially in the group of women with PCOS and suicidal ideation.

Currently, in the field of evidence-based psychopharmacology, it is understood that certain categories of antidepressants commonly prescribed for depression also have anxiogenic effects, as they increase the availability of serotonin in the frontal lobe region, thus stimulating possible anxiety, which may be associated with suicidal ideation⁴.

Focusing on adolescent women with PCOS who present with depression and anxiety, medical intervention often involves the use of antidepressants. However, it is crucial to carefully assess the patient's history before prescribing, taking into account possible contraindications and adverse effects, especially in relation to suicidal ideation.

This raises the following question: do adolescents with PCOS have a higher risk of suicide depending on

the type of antidepressant medication used, considering the current evidence? Through this review article, a new hypothesis is investigated, suggesting that the risk of suicidal ideation—in addition to being related to demographic and socioeconomic factors—may be influenced by certain antidepressant drugs used to treat symptoms of depression and/or anxiety in women with PCOS. This suggests the need for further investigation into the impact of different types of antidepressants on the propensity for suicide risk in women with PCOS.

The literature review aims to understand whether the choice of antidepressant drugs used to treat depression and anxiety in women with PCOS is based on recent evidence for more rational management of issues involving suicidal ideation.

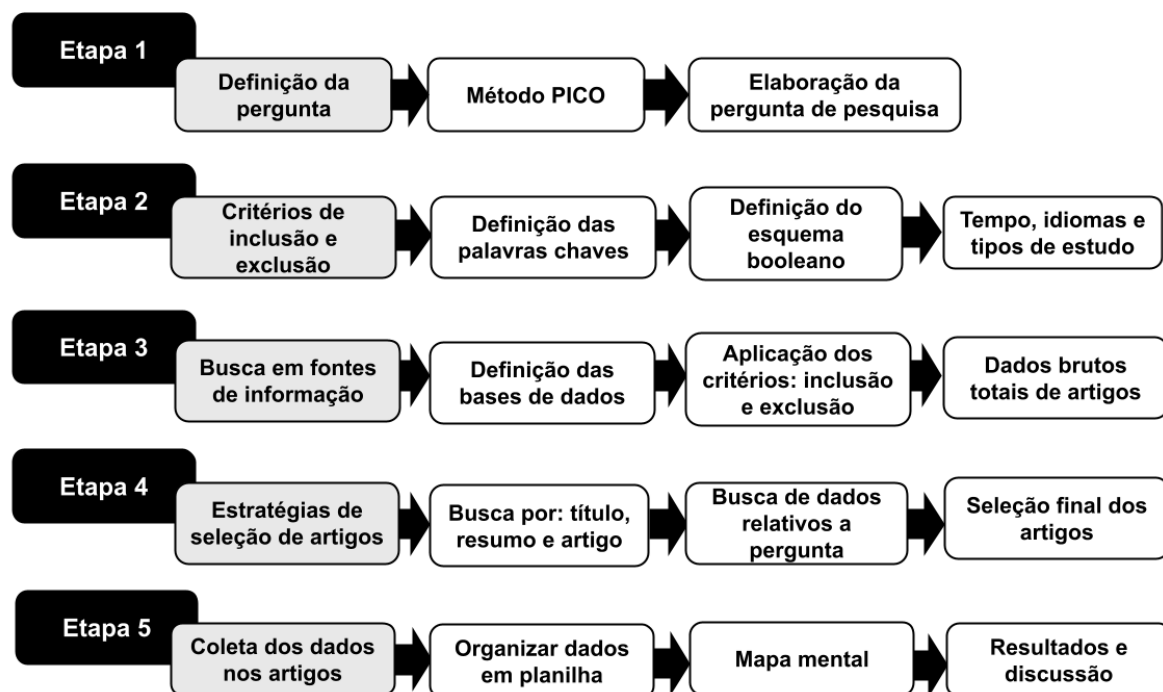
METHODOLOGY

The review was conducted in five

stages, following a rigorous methodology to ensure the reproducibility of

the information found^{5,6}. The stages are listed in Figure I:

Figure I: Research method used and its five stages of investigation based on PRISMA



Source: Adapted from Souza, Carvalho (2010).

The stages of this research are described below:

Stage 1, which includes defining the research question using the PICO method, an acronym that stands for Population, Intervention (or exposure), Comparison, and Outcome. Once the research question was defined, the keywords that would compose the research were then defined.

Step 2 consisted of defining the Boolean scheme that would solve the research problem, as well as defining the eligibility criteria for articles, such as time [a] Availability in Portuguese, English, and Spanish, [b] having been developed from a question obtained by the PICO method, [c] Direct relationship with the object of study and its guiding question, [d] no conflicts of interest, and [e] publication within the last five years. At this stage,

it was also established that the variables socioeconomic conditions, suicidal ideation, and pharmacological and non-pharmacological treatments would be sought in the articles. The time frame between 2020 and 2025 was defined for the search for articles related to the topic

Stage 3 corresponded to the activity of defining the search sites, using the Pubmed, Scielo, PsychoInfo, and ScienceDirect portals.

Stage 4 was the selection phase of the articles found on the portals, in which the analysis initially followed the title, abstract, and those of interest were separated for analysis aiming at the answer to the research problem. The ROBANS (Risk of Bias Assessment Tool for Nonrandomized Studies) and Risk of Bias Tool 2 (RoB 2) methods were used for nonrandomized and randomized studies, respec-

tively.

Step 5 involved analyzing the results using spreadsheets containing information on the PICO question and the variables selected for study, with the aim of generating the results and discussion of the article.

RESULTS

Considering the terms required in the research question⁷, the items were established as shown in Table I:

Table I: Formulation of the research question

Acronym definitions	P	I	C	O
	Population	Intervention [or exposure]	Comparison [relativize]	Outcome
Question components	Adolescents with PCOS and depression	Antidepressant drugs	Types of antidepressants and their actions on 5HT2	Risk of suicidal ideation

Source: The authors, 2024.

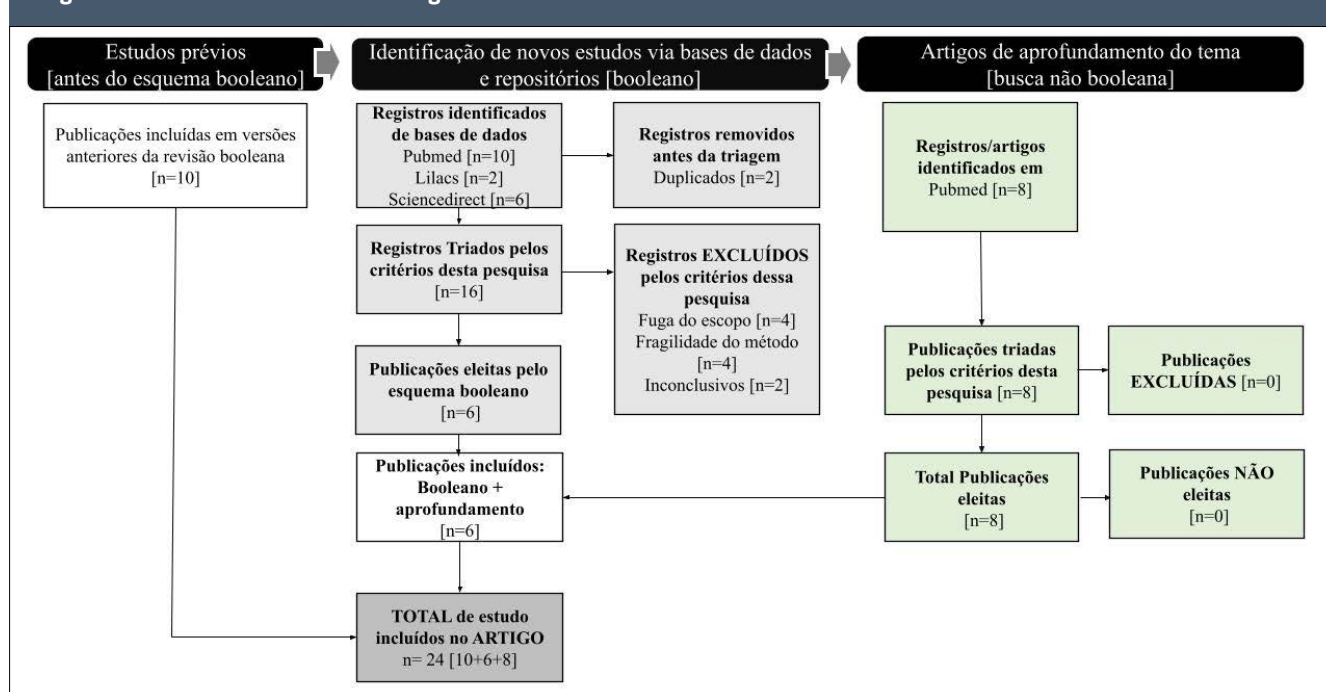
The result of the question was then expressed as follows: "Do adolescents with PCOS have a higher risk of suicide depending on the type of antidepressant medication used, considering the current evidence?"

From then on, the Boolean scheme was defined for searching for articles

related to the question, using the Boolean scheme "(polycystic ovary syndrome) AND suicide AND antidepressants" in the Pubmed, Scielo, PsychoInfo, and ScienceDirect databases, as mentioned in the method.

A total of 13 articles were found in the Boolean scheme, of which 6 met the research selection criteria to

find propositions that answered the research question of the study. There were also 10 previous articles, and a total of 8 were added outside the Boolean scheme for theoretical complementation, totaling 24 articles, as shown in Figure II.

Figure II: Results of article screening

Source: The authors, 2024.

DISCUSSION

Incidence and Prevalence of Polycystic Ovary Syndrome: learning a little more about this clinical condition

PCOS is described as an endocrine disorder that affects women

of reproductive age. This syndrome often presents in adolescence, shortly after the first menstruation. The main symptoms are characterized by menstrual irregularity with oligomenorrhea, which occurs as a result of hormonal imbalance, amenorrhea, and abnormal uterine bleeding, infertility, hirsutism, acne, androgenic

alopecia, seborrhea, overweight, and obesity⁸. However, the pathogenesis of PCOS is still completely unknown, meaning that the cause of this syndrome is unclear⁹.

PCOS affects women at a crucial stage in their lives, whether in adolescence—a period of self-affirmation—or in their reproductive years, marked

by the desire for motherhood¹⁰. The impairment of physical appearance, affecting femininity and the risk of infertility, generates feelings of low self-esteem¹¹, a condition in which the emotional impact and mental disorders resulting from the consequences of PCOS need to be considered with better evidence.

PCOS and the manifestation of mental disorders: depression, anxiety, and suicidal ideation

The following discussion is summarized in Table II of this study. The relationship between PCOS and mental disorders is complex and multifaceted. In a cross-sectional study conducted by Gomaa, Desok, Amer, Alaa, and Khalil (2023)¹², partici-

pants were divided into two groups. One group included 30 women with PCOS and infertility, while the other group included 30 women with infertility due to causes other than PCOS. This study found that women with PCOS had higher levels of depression and impulsivity compared to other infertile women, but not those with PCOS¹².

Quadro II: Estudos recentes sobre a questão da SOP e ideação suicida					
Author/year	Study objective	Sample size	Study design	What was compared	Outcome/Conclusion
Abdollahi, Mirghafourvand, Babapour, Mohammadi 2018.	To determine the effects of cognitive behavioral therapy (CBT) on quality of life in women with PCOS.	74	This randomized clinical trial was controlled by block randomization. The intervention group received eight weekly CBT sessions lasting between 45 and 60 minutes each.	CBT group versus control group.	The results showed that CBT was able to reduce fatigue and improve quality of life in our sample of women with PCOS and, ultimately, improve their health.
Hetrick, McKenzie, Bailey, Sharma, Moller, Badcock, 2021.	Investigating the effectiveness of new-generation antidepressants in people with major depressive disorder.	+20.000	Search of the Cochrane Common Mental Disorders Specialized Register, Cochrane Library, and Cochrane Database of Systematic Reviews, along with Ovid Embase, MEDLINE, and PsycINFO through March 2020.	Traditional antidepressants versus new generation antidepressants in terms of suicidal ideation.	It was found that some medications may be associated with an increased risk of suicide-related events. The consideration of psychotherapy, particularly CBT, in accordance with guideline recommendations, remains important.
Gomaa, Graca, Liu, 2023.	Compare suicide rates, impulsivity, and depression in women with PCOS.	60	Cross-sectional study. Participants were divided into two groups. Group A included 30 women with PCOS and infertility, and group B included 30 women with infertility due to causes other than PCOS.	Women with PCOS versus women with other causes of infertility.	It was concluded that patients with PCOS have more depression and impulsivity than patients with other causes of infertility. Suicide was not different in both groups.
Wright, Tavakoli, 2023	Compare health-related quality of life and depressive symptoms.	1.042	Cross-sectional study with an online survey in two age cohorts, among peri-postmenopausal women with PCOS aged 18-42 years (group A) and over 43 years (group B).	Group A VERSUS Group B	All demographic variables, except for the number of comorbidities, differed between groups. Group B reported better quality of life. Both groups had moderate depressive symptoms.
Khan, Abdullah, Gul, Bhutta, Imran, Mazhar, 2024.	To determine the prevalence of anxiety and depression in women with PCOS and to find the association of demographic and socioeconomic factors.	74	Single-center cross-sectional study. All female patients aged between 18 and 40 years old diagnosed with PCOS. The Hospital Anxiety and Depression Scale (HADS) was used to determine the level of anxiety and depression in participants.	Demographic and socioeconomic factors versus the occurrence of anxiety and depression.	Depression was significantly associated with BMI, education, and income; anxiety was associated with employment status and current pregnancy. Age, marital status, ethnicity, menstrual irregularities, comorbidities, and family history showed no significant association.
Hsu, Kao, Tsai, Bai, Su, Chen, 2024.	To assess the risk of suicide in women with PCOS, considering psychiatric comorbidities and age.	18.960	Cohort study, data from Taiwan's national database from 1997 to 2012. Suicide attempts were assessed using Cox regression models. Measures: suicide risk with risk rates risk ratios.	Psychiatric comorbidities versus age.	Participants with PCOS had a remarkable 8.47-fold increase in the risk of suicide attempts compared to the control group. The elevated risk was evident among adolescents, young adults, and older adults.

Source: The authors, 2024.

In another cross-sectional study conducted by Khan et al. (2024), it was found that depression in women with PCOS is associated with body mass index (BMI), education, and family income. Anxiety, on the other hand, is linked to professional status and pregnancy. These findings highlight the importance of considering various sociodemographic and contextual factors when assessing the mental health of these patients².

With regard to suicidal ideation and attempts among patients with PCOS, a cohort study reported a significant increase in the risk of suicide attempts in the PCOS group compared to the control group¹. This study also highlights that the risk is even higher among adolescents and young adults¹. Furthermore, another study points to a possible association between advancing age and mental health complications, in which women in the working phase of life are at greater risk due to the dynamics of professional and emotional life³.

It should be noted that approximately 5 years before the publication of the aforementioned studies, Abdollahi, Mirghafourvand, Babapour, and Mohammadi (2018) conducted a randomized controlled clinical trial using block randomization, addressing the issue of anxiety and depression in women with PCOS¹³. Their study sought to determine the effects of cognitive behavioral therapy (CBT) on quality of life and psychological fatigue in women with PCOS. The results showed that CBT was able to reduce fatigue and improve quality of life in the sample of women with PCOS and, ultimately, improve their health¹³.

However, Juhász, Stubnya, and Teutsch (2024) point out that polypharmacy is still very common in women with PCOS, including conditions involving their mental disorders, with psychotropic drugs, lacking more up-to-date evidence-based man-

agement⁹.

Use of evidence-based psychopharmacology in mental disorders in PCOS: issues of effectiveness and safety

It is necessary to ensure rigorous monitoring of treatment effects and suicide-related outcomes in adolescents treated with new-generation antidepressants, as some of these drugs may be associated with an increased risk of these events⁴.

If an antidepressant is being considered for an individual, this should be done in consultation with the child/adolescent and their family/caregivers, and it remains essential to ensure strict monitoring of treatment effects and suicide-related outcomes (combined suicidal ideation and suicide attempt) in those treated with newer antidepressants, given the findings that some of these drugs may be associated with an increased risk of these events. The consideration of psychotherapy, particularly cognitive-behavioral therapy, in accordance with the recommendations of the guidelines, remains important.

According to the authors Dewan, Karwade, and Mahajan (2023), PCOS directly affects women's mental health, leading to higher rates of depression, anxiety, and other psychiatric disorders. It is also correlated with difficulties related to body image, self-esteem, relationships, and fertility¹⁴.

There are numerous aggravating factors for women's health, covering physical health, mental health, and social well-being. PCOS, in turn, affects all of these areas. In terms of physical health, without proper treatment, women may experience hirsutism, characterized by excessive hair growth, acne, irregular menstrual periods, including oligomenorrhea (infrequent menstrual periods) or amenorrhea (absence of menstrual periods), insulin resistance, which

causes metabolic disorders, increasing the chances of women developing type 2 diabetes, long-term hypertension, infertility, and risk of endometrial cancer¹⁴.

In terms of mental health, a study using various scales highlighted the severity of symptoms of depression and anxiety in women with PCOS. The results obtained in the study showed that women with PCOS are more likely to have a clinical diagnosis of depression (odds ratio (OR), 2.79; 95% confidence interval (CI), 2.23-3.50), anxiety (OR, 2.75; 95% CI, 2.10-3.60), bipolar disorder (OR, 1.78; 95% CI, 1.43-2.23), and obsessive-compulsive disorder (OCD) (OR, 1.37; 95% CI, 1.22-1.55)¹⁵.

PCOS affects women of reproductive age and also brings with it psychiatric comorbidities, such as: depression, where women with PCOS are twice as likely to have depressive symptoms and four times more likely to have moderate to severe depression compared to people without PCOS; high levels of anxiety; bipolar disorder; eating disorders; and suicidal ideation¹⁶.

In research also conducted by Stan-deven, Olson, Leistikow, Osborne, and Hantsoo (2021), several studies were analyzed and it was found that women with PCOS are more likely to have an anxiety disorder or obsessive-compulsive disorder compared to controls without PCOS. Another study reported increased rates of generalized anxiety disorder and social phobia, but not obsessive-compulsive disorder¹⁶.

An alarming point highlighted in the studies is suicidal ideation, which may arise due to high rates of psychiatric comorbidities, emotional dysregulation, and rumination on the situation that women find themselves in due to misconceptions and social stereotypes. According to authors Dewan, Karwade, and Mahajan (2023), social destigmatization of PCOS is

necessary to help women with this syndrome during the process they are experiencing. Currently, understanding is limited, and the notion that it is "just a reproductive issue" or that it is related to lifestyle choices persists¹⁴.

In the study conducted by Hsu, Kao, Tsai, Bai, Su, and Chen (2024), the risk of suicide attempts was compared between age groups, and the high risk was evident among adolescents (risk ratio (RR), 5.38 [confidence interval (CI), 3.93 to 7.37]), young adults (<40 years; RR, 9.15 [CI, 8.03 to 10.42]), and older adults (RR, 3.75 [CI, 2.23 to 6.28]) groups. An 8.47-fold increase in the risk of suicide attempts was observed compared to the control group (RR, 8.47 [95% CI, 7.54 to 9.51])¹.

It is necessary to ensure rigorous monitoring of treatment effects and suicide-related outcomes in treatments with new-generation antidepressants, as some of these drugs may be associated with an increased risk of suicide⁴.

According to studies presented by the National Institute for Health and Care Excellence (NICE) in 2019, the drugs with the greatest effectiveness in treating depression in children and adolescents, compared to placebo, are: Sertraline (1.55 or 155%), Venlafaxine (1.61 or 161%), Vilazodone (1.66 or 166%), and Duloxetine (1.68 or 168%)¹⁷.

The data were summarized in Figure 3, in which the aforementioned data were harmonized, with the RRs converted to ORs for a better understanding of the phenomenon:

For the purpose of standardizing the measures of association in the forest plot graph, the risk ratio (RR) values for suicide attempts in women with polycystic ovary syndrome (PCOS) were converted to odds ratios (OR). This conversion allowed direct comparison with the risk data associated with antidepressant use, originally presented as OR in case-control

studies and systematic reviews.

The transformation was performed using the following approximation formula, recommended when the prevalence of the event in the control group is low:

$$OR \approx \frac{TR}{1 - p_0 + (p_0 \times TR)}$$

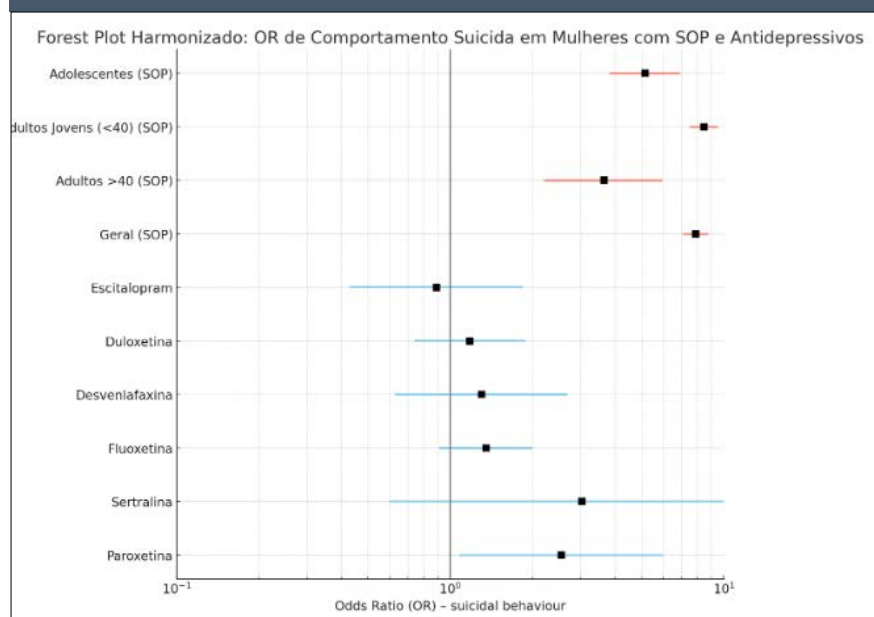
Where:

- TR represents the observed risk rate,
- p_0 is the proportion of occurrence of the event in the control

group (in this study, set at 1%, or 0.01), according to the literature on the prevalence of suicide attempts in the general population.

This approach is justified by the need to represent, in the same graph, different sources of risk associated with suicidal behavior, respecting the comparability of the scales used. The choice of a prevalence of 1% is based on conservative estimates of population risk for suicide attempts, according to global epidemiological data. The results are shown in Figure III below:

Figure III: Direct comparison of the risks of suicidal behavior expressed as Odds Ratio (OR).



Organization: The authors, 2024.

Two groups of factors were considered: Women with Polycystic Ovary Syndrome (PCOS). Risk Rate (RR) data converted to Odds Ratio (OR) assuming a prevalence of suicide attempts of 1% in the control group. They show high risk, especially among: Young adults (<40 years) – OR ≈ 8.5 General group with PCOS – OR ≈ 7.7 to 8.5 New Generation Antidepressants: Data extracted di-

rectly as OR, comparing each drug with placebo. Other elements of the graph: Logarithmic scale on the X-axis: improves visualization of differences between very low and very high ORs. Vertical gray line (OR = 1): reference point indicating no increase, or decrease in risk. Black marker: estimated value of the central OR.

Sertraline, an SSRI, showed a high rate of suicidal behavior (3.03) compared to other antidepressants and is considered a

risk, especially in the treatment of depression in patients with a history of suicidal ideation. In addition, paroxetine exhibited a significant rate of suicidal behavior (2.55) compared to other antidepressant medications and is perceived as a danger to subjects with suicidal ideation, especially when used to treat depression in patients with a history of suicide attempts, as in the case mentioned¹⁷.

Promotion of non-pharmacological therapies based on psychological interventions

There is a relationship between PCOS and mental health problems, including a higher prevalence of depression and anxiety, reduced self-esteem due to the presence of hirsutism, acne, obesity, and concerns about long-term consequences, reduced quality of life, social stigmatization, lower body image satisfaction, and concerns about health and infertility¹⁹. According to a meta-analysis conducted by Cooney, Lee, Sammel, Dokras (2017), the median prevalence of depression in patients with PCOS is 36.6% compared to 14.2% in the control group, while the prevalence of anxiety in patients with PCOS is 41.9% compared to 8.5% in the control group²⁰.

Furthermore, there is evidence of a relationship between the manifestation of PCOS and manifestations of psychiatric disorders, especially depression and anxiety. These data reinforce the need for multidisciplinary interventions in patients with PCOS, considering not only organic discomfort and clinical symptoms, but also aspects of quality of life, social and humanitarian aspects²¹. Cognitive Behavioral Therapy has been shown to be effective in improving the quality of life of patients with PCOS when associated with lifestyle changes¹⁹.

Psychotherapy, especially cognitive behavioral therapy, is recommended for cases of depression associated with PCOS⁴. The results of one study showed that CBT was able to reduce fatigue and improve quality of life in a sample of women with PCOS and improve their health²². An integrative review conducted in 2024 showed

that, among the 19 articles selected, five associated diet and physical exercise with Cognitive Behavioral Therapy as lifestyle interventions for women with PCOS²³. In all cases where women underwent Cognitive Behavioral Therapy combined with diet and physical exercise, or Cognitive Behavioral Therapy focused on weight loss, the impact was positive²³.

The treatment of PCOS requires a multidisciplinary team composed of endocrinologists, gynecologists, nutritionists, physical educators, and psychologists^{24,25}. Interventions focused on diet, physical exercise, and Cognitive Behavioral Therapy (CBT) are recommended^{25,26}. Changes in diet, physical activity levels, and behavioral changes are presented as recommended interventions as first-line treatment for PCOS and its metabolic complications^{25,27}. There is evidence of the need for combined interventions involving multiple factors for the correct management of all clinical manifestations resulting from PCOS²³.

It was found that, in terms of general studies that relate the manifestation of PCOS to mental health issues, they are limited, as they address more specific issues related to diabetes mellitus and obesity in relation to PCOS, and when they address aspects related to mental health, they are more general, discussing aspects related to quality of life, considering, in addition to cognitive-behavioral psychotherapy, diet and physical exercise as pillars for improving quality of life in women with PCOS. Given this, it is observed that there are no studies that specifically relate the effectiveness of cognitive-behavioral therapy to cases of anxiety and depression related to PCOS. In addition, there are biases related to the multifactorial causes of both obesity and the manifestation of anxiety and depression, which may impact the outcomes of these studies.

Clinical issues related to PCOS can be controlled through the use of psychopharmacology; however, weight issues and emotional aspects are multifactorial and more complex, aspects that need to be considered and thought through for the treatment of comorbidities in women with PCOS.

It is possible to observe that there are limitations in studies relating mental health to PCOS. Most research seeks to relate obesity and diabetes to polycystic ovary syndrome; however, the studies do not seek to assess the emotional conditions of the study population, since obesity has multifactorial causes involving environmental and genetic aspects, consumption of ultra-processed foods, as well as social and cultural aspects in which the person is involved²⁵. Nevertheless, being overweight or obese contributes to metabolic disorders in women affected by PCOS, with weight loss being the first line of treatment²¹. However, maintaining an adequate body composition can be a challenge for women with PCOS, as it involves not only changes in habits but also behavioral changes, since interventions that are carried out in the short term for weight loss do not show long-term results²⁵.

Polycystic ovary syndrome (PCOS) is often associated with various mental disorders, including depression, anxiety, and suicidal ideation. Therapies such as cognitive behavioral therapy (CBT) have shown significant benefits for these patients. A study conducted in 2018 revealed that CBT reduced fatigue and improved the quality of life of women with PCOS, highlighting the importance of psychological approaches to overall well-being.

A greater focus on the treatment of depression almost exclusively with psychotropic drugs, and the need for rigorous monitoring and the use of psychopharmacology in mental disorders associated with PCOS underscores the importance of integrated and safe therapeutic strategies for the effective management of these complex conditions. The topic of evidence-based use of psychotropic drugs for clinical effectiveness and safety will be explored below.

CONCLUSION

Given the above, it is understood that little focus is given to the issue of mental health in women with PCOS, since professionals present a biological approach with an emphasis on hormonal issues, and

the psychological impacts that the disease can cause are still little discussed, in which depression and suicidal ideation have been presented as risks associated with PCOS.

Furthermore, greater emphasis on mental health without considering the particularities of psychopharmacology and PCOS itself leads to gaps that can pose risks and

result in incomplete treatment. Considering the issue of increased depression in the group of women with PCOS and an intervention based primarily on psychotropic drugs, there is a risk in this scenario of prescribing such drugs to patients with PCOS, which may increase the chance of suicide, especially among adolescents.

Finally, a search for interventions not based exclusively on psychotropic drugs, but with the adoption of complementary therapies, such as Cognitive Behavioral Therapy, and a more critical analysis of prescribing antidepressants to women with PCOS is highly necessary.

REFERENCES

1. Hsu TW, Kao YC, Tsai SJ, Bai YM, Su TP, Chen TJ, et al. Suicide Attempts After a Diagnosis of Polycystic Ovary Syndrome. *Annals of Internal Medicine*. 2024 Feb 6. <https://doi.org/10.7326/m23-2240>
2. Khan AYR, Abdullah MA, Gul R, Bhutta HR, Imran M, Mazhar SB, et al. Prevalence of Anxiety and Depression Among Women With Polycystic Ovarian Syndrome: A Cross-Sectional Study From a Tertiary Care Hospital of Islamabad, Pakistan. *Cureus*. 2024 Jan 19. <https://doi.org/10.7759/cureus.52540>
3. Wright PA, Tavakoli AS, Corbett CF. PCOS health-related quality-of-life and depressive symptoms across the lifespan: Comparative study. *Journal of Women & Aging*. 2023 Jul 5;36(1):1–16. <https://doi.org/10.1080/08952841.2023.2230112>
4. Hetrick SE, McKenzie JE, Bailey AP, Sharma V, Moller CI, Badcock PB, et al. New generation antidepressants for depression in children and adolescents: a network meta-analysis. *Cochrane Database of Systematic Reviews*. 2021 May 24;2021(5). <https://doi.org/10.1002/14651858.cd013674.pub2>
5. Page MJ, McKenzie JE, Bossuyt PM, et al. A declaração PRISMA 2020: diretriz atualizada para relatar revisões sistemáticas. *Rev Panam Salud Publica* 2022; 46: e112. <https://doi.org/10.26633/RPSP.2022.112>
6. Souza TM, Silva MD, Carvalho R. Revisão integrativa: o que é e como fazer. *Einstein*. 2010;8(1):102–8. <https://doi.org/10.1590/S1679-45082010RW1134>
7. Galvão TF, Pereira MG. Revisões sistemáticas da literatura: passos para sua elaboração. *Epidemiologia e Serviços de Saúde*. 2014;23(1):183–4. <http://dx.doi.org/10.5123/S1679-49742014000100018>
8. Fitz V, Graca S, Mahalingaiah S, Liu J, Lai L, Butt A, et al. Inositol for Polycystic Ovary Syndrome: a systematic review and meta-analysis to inform the 2023 update of the International Evidence-Based PCOS Guidelines. *The Journal of Clinical Endocrinology and Metabolism*. 2024 Nov 18;109(12):e2365. <https://doi.org/10.1210/clinem/dgad762>
9. Juhász AE, Stubnya MP, Teutsch B, et al. Ranking the dietary interventions by their effectiveness in the management of polycystic ovary syndrome: a systematic review and network meta-analysis. *Reprod Health*. 2024;21(1):28. <https://doi.org/10.1186/s12978-024-01758-5>
10. Melin J, Forslund M, Alesi S, et al. Metformin and Combined Oral Contraceptive Pills in the Management of Polycystic Ovary Syndrome: A Systematic Review and Meta-analysis. *J Clin Endocrinol Metab*. 2024;109(2):e817–e836. <https://doi.org/10.1210/clinem/dgad465>
11. Goldberg A, Graca S, Liu J, et al. Anti-obesity pharmacological agents for polycystic ovary syndrome: A systematic review and meta-analysis to inform the 2023 international evidence-based guideline. *Obes Rev*. 2024;25(5):e13704. <https://doi.org/10.1111/obr.13704>
12. Gomaa MA, Desoky AA, Amer D, Alaa D, Khalil MA. Impulsividade, depressão e suicídio em pacientes do sexo feminino com síndrome dos ovários policísticos e infertilidade. *Middle East Current Psychiatry* 2023 Dec 12;30(1). <https://mecp.springeropen.com/articles/10.1186/s43045-023-00386-2>
13. Abdollahi L, Mirghafourvand M, Babapour JK, Mohammadi M. Effectiveness of cognitive-behavioral therapy (CBT) in improving the quality of life and psychological fatigue in women with polycystic ovarian syndrome: a randomized controlled clinical trial. *Journal of Psychosomatic Obstetrics & Gynecology*. 2018 Sep 3;40(4):283–93. <https://doi.org/10.1007/s00408-018-00386-2>

0.1080/0167482x.2018.1502265

14. Dewani D, Karwade P, Mahajan KS. The Invisible Struggle: The Psychosocial Aspects of Polycystic Ovary Syndrome. *Cureus*. 2023 Dec 30;15(12):e51321. <https://doi.org/10.7759/cureus.51321>
15. Brutocao C, Zaiem F, Alsawas M., Morrow AS, Murad MH, Javed A. Transtornos psiquiátricos em mulheres com síndrome dos ovários policísticos: uma revisão sistemática e meta-análise. *Endócrino*. 2018;62:318–325. <https://doi.org/10.1007/s12020-018-1692-3>
16. Standeven LR, Olson E, Leistikow N, Payne JL, Osborne LM, Hantsoo L. Polycystic Ovary Syndrome, Affective Symptoms, and Neuroactive Steroids: a Focus on Allopregnanolone. *Current Psychiatry Reports*. 2021 Apr 21;23(6). <https://doi.org/10.1007/s11920-021-01244-w>
17. National Institute for Health and Care Excellence (NICE). Depression in Children and Young people: Identification and Management. NICE guideline [Internet]. 2019 2 Jun. Available from: <https://www.nice.org.uk/guidance/ng134>
18. Valença RCP, Guimarães SB, Siqueira L da P. Prescrição e uso de antidepressivos em crianças e adolescentes – uma revisão da literatura. *Brazilian Journal of Development*. 2020;6(12):94860–75. <https://doi.org/10.34117/bjdv6n12-101>
19. Piccini CD, Michelon ES, Medeiros AG, Heinen CA, Maranghelli GS, Eyras HV. Síndrome dos policísticos, complicações metabólicas, cardiovasculares, psíquicas e neoplásicas a longo prazo: uma revisão sistemática. *Clin Biomed Res* 2020; 40(3):184–192. <https://seer.ufrgs.br/index.php/hcpa/article/view/10769>
20. Cooney LG, Lee I, Sammel MD, Dokras A. High prevalence of moderate and severe depressive and anxiety symptoms in polycystic ovary syndrome: a systematic review and meta-analysis. *Hum Reprod*. 2017;32(5):1075–1091. <https://doi.org/10.1093/humrep/dex044>
21. Tavares RS, Gonçalves BR, Amaral WN do, Francescantônio ICM, Júnior EEG, Danziger LR, et al. Prevalência de transtornos mentais em mulheres com síndrome do ovário policístico - revisão sistemática. *Revista Eletrônica* Acervo Saúde, 3 Feb. 2019;11(6):e250. <https://doi.org/10.1590/1981-5271v43suplemento1-20180260>
22. Majidzadeh S, Mirghafourvand M, Farvareshi M, Yavarikia P. The effect of cognitive behavioral therapy on depression and anxiety of women with polycystic ovary syndrome: a randomized controlled trial. *BMC psychiatry*. 2023 May 11;23(1):332. <https://doi.org/10.1186/s12888-023-04814-9>
23. Gonçalves GC, Moreira FP, Fonseca IF, Borges GD, de Siqueira EC. Impacto das mudanças de estilo de vida na Síndrome do Ovário Policístico – uma revisão integrativa. *Braz. J. Health*. 2024 Feb 14;7(1):5520–33. <https://doi.org/10.34119/bjhrv7n1-447>
24. Jiskoot G, Benneheij SH, Beerthuisen A, de Niet JE, de Klerk C, Timman R, et al. A three-component cognitive behavioural lifestyle program for preconceptional weight-loss in women with polycystic ovary syndrome (PCOS): a protocol for a randomized controlled trial. *Reproductive Health [Internet]*. 2017 Mar 6;14(1). <https://doi.org/10.1186/s12978-017-0295-4>
25. Carvalho TR de, Soares JM. Características que envolvem o processo de emagrecimento em mulheres com síndrome dos ovários policísticos (SOP): uma revisão de literatura. *RBONE - Revista Brasileira de Obesidade, Nutrição e Emagrecimento*. 2022 Aug 31;16(100):192–9. <https://www.rbone.com.br/index.php/rbone/article/view/1959>
26. Jiskoot G, Dietz de Loos A, Beerthuisen A, Timman R, Busschbach J, Laven J. Long-term effects of a three-component lifestyle intervention on emotional well-being in women with Polycystic Ovary Syndrome (PCOS): A secondary analysis of a randomized controlled trial. *Atkin SL, editor. PLOS ONE*. 2020 Jun 1;15(6):e0233876. <https://doi.org/10.1371/journal.pone.0233876>
27. Teede HJ, Misso ML, Costello MF, Dokras A, Laven J, Moran L, et al. Recommendations from the international evidence-based guideline for the assessment and management of polycystic ovary syndrome. *Fertility and Sterility*. 2018 Aug;110(3):364–79. <https://doi.org/10.1016/j.fertnstert.2018.05.004>