



REVIEW ARTICLE

Impact of oral contraceptives on emotional state

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ABSTRACT

Introduction: the use of oral contraceptives is one of the most widespread methods of family planning, but their influence on women's emotional sphere remains a subject of scientific debate.

Objective: to analyze, through a literature review, the relationship between oral contraceptive administration and variations in women's emotional state.

Methods: a systematic review of the scientific literature was conducted across various databases. The search was performed using an algorithm with keywords and boolean operators, allowing the identification of relevant sources. The selected studies, after applying inclusion and exclusion criteria, were critically analyzed considering timeliness, methodological quality, and thematic relevance, and integrated into the final synthesis of the review.

Development: the reviewed literature shows heterogeneous results. Some studies report increases in symptoms such as irritability, anxiety, and sadness in a significant percentage of users, while others show emotional stability or even improvement in mood regulation. Modulating factors such as genetic predisposition, hormonal profile, and psychosocial environment were identified, explaining the variability of responses. Statistical analyses, mainly ANOVA and chi-square, confirmed significant differences in several studies, although not always consistent. Evidence suggests that the emotional impact of the pill is multifactorial and depends on individual and contextual characteristics.

Conclusions: the review confirms that oral contraceptives can generate both adverse and beneficial emotional effects, depending on intrinsic and extrinsic factors of each woman. The need for a personalized clinical approach in prescription is emphasized, considering genetic, hormonal, and social background.

Keywords: Contraceptive Agents; Family Development Planning; Emotional Regulation; Mental Health.

INTRODUCTION

Since its introduction in the 1960s, the oral contraceptive pill has been the subject of numerous studies due to its implications not only for reproductive health but also for users' emotional well-being.⁽¹⁾ Historical evidence indicates that this contraceptive method has yielded significant benefits in terms of birth control and female autonomy, alongside side effects including emotional fluctuations. Over the years, the pill has enabled women greater control over their fertility, positively influencing their social and professional lives.⁽²⁾ However, this advancement has not been without controversy, as multiple side effects have been reported—particularly emotional alterations.

The need to investigate this topic stems from growing concern about the emotional side effects some women may experience while using oral contraceptives. These effects can range from mild mood changes to more severe symptoms such as depression and anxiety.⁽³⁾ In this context, it is crucial to understand how these emotional changes may affect women's quality of life, informing both healthcare professionals and potential users of this contraceptive method. The importance of this research is evident given the large number of women worldwide who use oral contraceptives, underscoring the need for accurate, evidence-based information about their potential emotional effects. Additionally, this research can help dispel misconceptions and provide a more balanced perspective on pill use.

The current state of the issue is characterized by diverse findings in the scientific literature. Some studies report a correlation between pill use and increased depressive symptoms, while others find no significant effects.⁽⁴⁾ This disparity may stem from differences in study designs, populations evaluated, or types of pills investigated. This contradictory landscape highlights the need for a critical and updated analysis of prior work to identify patterns and potential biases in existing studies.⁽⁵⁾ Furthermore, it is important to consider how factors such as genetic predisposition, social environment, and individual medical history may influence emotional responses to oral contraceptives.

A comprehensive literature analysis will clarify these variations and provide a solid foundation for future research. Given these considerations, this review was conducted to analyze, through bibliographic review, the relationship between oral contraceptive administration and variations in women's emotional state.

METHODS

This study was designed as a systematic literature review following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The objective was to identify, analyze, and synthesize available evidence on the impact of oral contraceptives on women's emotional state. The literature search was limited to the period from January 2010 to December 2024 to include recent and relevant research reflecting the latest advances in this field.

Academic and scientific databases consulted included PubMed, SciELO, ScienceDirect, Google Scholar, LILACS, and BVSALUD. These databases were selected for their broad coverage in health sciences and relevance to clinical and epidemiological studies. Additionally, secondary references from bibliographies of relevant articles were reviewed, and grey literature—such as

theses and institutional documents—was considered when meeting methodological quality and full-access criteria. This strategy expanded the information scope and reduced publication bias. The search strategy employed a structured algorithm with keywords and Boolean operators

Terms such as “oral contraceptive pill” OR “oral contraceptives” AND “emotional state” OR “mental health” OR “psychological well-being” were adapted to each database’s specifications. Articles in Spanish, English, and Portuguese were included to encompass scientific output from Latin America, Europe, and North America. The search was conducted iteratively, adjusting terms based on preliminary results to optimize sensitivity and specificity.

Inclusion criteria encompassed studies published within the defined timeframe, original research (quantitative or qualitative) directly addressing the relationship between oral contraceptives and emotional variations, and articles with full-text access. Duplicates, studies outside the analysis period, publications without full text, narrative reviews lacking explicit methodology, and works unrelated to the central topic were excluded.

The selection process occurred in several phases. First, titles and abstracts were screened to exclude irrelevant studies. Subsequently, full texts of potentially eligible articles were reviewed. Initially, approximately 1,200 records were identified; after removing duplicates and applying inclusion/exclusion criteria, the sample was reduced to 320 articles. Finally, after critical reading and methodological assessment, six studies were included in the qualitative synthesis. Information was organized into comparative tables to facilitate synthesis and critical analysis. A qualitative synthesis of findings was performed, highlighting common patterns and discrepancies among studies.

DEVELOPMENT

The systematic literature review on emotional effects associated with oral contraceptive use revealed relevant yet heterogeneous findings. Generally, considerable variability in users’ emotional responses was observed, confirming that this contraceptive method does not produce a uniform psychological impact.

First, several studies reported that a significant percentage of women experienced negative emotional effects—primarily irritability, sadness, anxiety episodes, and in some cases, depressive symptoms. Valderrama et al.,⁽⁴⁾ found that 40 % of participants exhibited adverse emotional changes after initiating pill use, while Pérez et al.,⁽¹⁾ documented a 35 % increase in irritability—a statistically significant finding ($p < 0,01$).

Similarly, Díaz et al.,⁽⁵⁾ reported that 25 % of women described emotional side effects, confirmed via chi-square analysis ($p < 0,05$). Conversely, studies identified positive effects or absence of emotional alterations in a considerable group of users. Zapata,⁽⁶⁾ found that 20 % of participants experienced reduced anxiety symptoms after six months of continuous use, while Chuga et al.,⁽³⁾ noted that 30 % of women reported emotional stability—suggesting that, in certain contexts, the pill may contribute to psychological well-being. Likewise, Argañaraz,⁽²⁾ highlighted variability in emotional responses without identifying a uniform pattern, reinforcing the idea that effects depend on individual and contextual factors.

Regarding statistical analysis, reviewed studies employed diverse methodologies to assess significance. ANOVA was used in most works to compare emotional changes between users and non-users, while others applied chi-square and t-tests to contrast proportions and means. In all cases, statistically significant differences were reported, confirming that oral contraceptive use can influence women's emotional state—though the direction and magnitude of this effect vary across populations and study designs. Table 1 summarizes key findings from reviewed studies, including sample size, reported emotional effects, statistical methods, and significance levels.

Table 1. Summary of key findings from reviewed studies

Study	Population	Reported Emotional Effects	Statistical Method Used (Significant Differences)
Pérez Janampa et al. (2023) ⁽¹⁾	250 participants	35 % increase in irritability	ANOVA ($p < 0.01$)
Argañaraz (2021) ⁽²⁾	200 participants	Variability in emotional responses	t-test ($p < 0.05$)
Chuga et al. (2022) ⁽³⁾	180 participants	30 % reported emotional stability	ANOVA ($p < 0.01$)
Valderrama et al. (2022) ⁽⁴⁾	300 participants	40 % reported adverse emotional changes	ANOVA ($p < 0.05$)
Díaz Alcantara (2023) ⁽⁵⁾	220 participants	25 % reported emotional side effects	Chi-square ($p < 0.05$)
Zapata Silva (2023) ⁽⁶⁾	150 participants	20 % reduction in anxiety symptoms	Chi-square ($p < 0.05$)

Literature analysis reveals considerable diversity in emotional responses among women using oral contraceptives. This aligns with prior studies documenting varied emotional effects associated with this method. Valderrama et al.,⁽⁴⁾ found that 40 % of participants experienced negative emotional effects—highlighting the need to assess emotional side effects when considering oral contraceptives.

Similarly, Pérez Janampa et al.,⁽¹⁾ observed a 35 % increase in irritability. Both studies used ANOVA, reinforcing the validity of their conclusions. In contrast, Zapata,⁽⁶⁾ showed a 20 % reduction in anxiety symptoms among pill users—suggesting potential emotional benefits in some cases. This discrepancy may stem from individual factors like genetic predisposition and social environment, as highlighted in several conceptual models reviewed.

Studies by Argañaraz,⁽²⁾ and Chuga et al.,⁽³⁾ also reflect this emotional response variability. While the former found no clear emotional pattern, the latter reported that 30 % of women experienced emotional stability. These differences underscore the complexity of oral contraceptive effects, indicating that emotional responses may be influenced by a combination of intrinsic and extrinsic factors.

Methodologically, the use of robust statistical techniques like ANOVA and chi-square in these studies provides a solid basis for interpreting results. For example, Díaz Alcantara et al.,⁽⁵⁾ used chi-square to demonstrate that 25 % of women experienced notable emotional side effects—confirming a significant proportion of users show measurable emotional responses.

Compared to prior research, a consistent trend emerges in identifying emotional effects—though their direction and magnitude vary. This variability may result from differences in study designs, populations, and types of oral contraceptives examined. Studies by Valderrama et al.,⁽⁴⁾ and Zapata Silva,⁽⁶⁾ exemplify how emotional effects can differ significantly across women’s groups.

In summary, this review confirms that oral contraceptive use can produce both adverse and beneficial emotional effects, depending on individual factors such as genetic predisposition, hormonal profile, and psychosocial environment. The marked variability observed underscores the need for personalized medical evaluation before prescription, weighing risks and benefits per case. Moreover, the application of robust statistical methods in reviewed studies lends credibility to findings and establishes a solid foundation for future research—particularly into specific mechanisms mediating emotional responses to the pill—to design strategies mitigating side effects and optimizing clinical guidance for users.

This discussion emphasizes the need for personalized medical evaluation before prescribing oral contraceptives. Reviewed studies confirm that emotional responses are highly individual and influenced by diverse factors. The consistent use of robust statistical methods reinforces the validity of findings and provides a strong basis for future research in this field.

CONCLUSIONS

The literature review confirmed that oral contraceptive use is associated with wide variability in women’s emotional responses—identifying both negative effects (e.g., irritability, sadness) requiring careful pre-prescription evaluation, and benefits in certain cases (e.g., reduced anxiety, greater emotional stability). These findings demonstrate that individual reactions are conditioned by genetic and contextual factors, underscoring the need for personalized medical assessment. The use of robust statistical methods in reviewed studies strengthens conclusions and emphasizes the importance of future research to clarify specific underlying mechanisms—ultimately designing strategies to mitigate adverse effects and optimize clinical guidance for users.

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