

Hormonal Contraceptives And Psychiatric Disorders A Retrospective Analysis Study

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Abstract

Background: Depression and anxiety are some of the common Psychiatric disorders that are prevalent in women and pose a considerable threat to the global public health.

Objective: The objective of this study is to analyze the correlation between hormonal contraceptive use and the incidence of Psychiatric disorders in women.

Study Design: A Retrospective Analysis Study.

Duration and place of the study: Department of Psychiatry & GYNAE & OBS Mardan Medical Complex (MMC) Mardan from 6th March 2020 to 5th Sep 2021.

Material and Methods: The participants of the study consisted of 100 women, 18-45 years of age, using different types of hormonal contraception containing Combined Oral and injectable Contraceptive Pills, Injections The participants received face-to-face interviews as well as administered questionnaires which aimed at identifying Psychiatric disorders, such as depression, anxiety, and Psychiatric swings. Psychiatric disorders related to contraceptive use were evaluated based on the data collected and compared to pre-contraceptive use.

Results: The sample of the study was of 100 women between the age range of the 18-45 years with the mean age of 29.3 ± 7.2 years. Hormonal contraceptives involved oral tablets 65%, injections 35%. Hence, history of Psychiatric disorder was prevalent in 30% of patients before initiating hormonal contraception. 22% reported mild to moderate depressive symptoms before starting hormonal contraceptives and 18% reported mild to moderate anxiety symptoms. Further, none of the participants had a severe Psychiatric disorder, which can lead to hospitalization and other severe psychiatric interventions.

Conclusion: The study's results point out to hormonal contraceptives as contributing to Psychiatric disorder, as more than a third of the women reported new or worsening symptoms.

Keywords: Hormonal therapies, Mental illness, Anxiety and depression.

INTRODUCTION

Oral contraceptive pills are widely used in family planning and have brought a significant change in human reproductive health by empowering women with choice ^[1]. These contraceptives which include the oral pills, patches and injections, and , work mainly by altering hormonal balance in the body to suppress ovulation ^[2]. Despite their efficiency in protecting against pregnancy, recent studies raise questions regarding the impact of these contraceptives

on mental health or more specifically Psychiatric disorders ^[3,4]. Depression and anxiety are common mental disorders which are ranked as major public health concerns due to their prevalence in different parts of the world among women ^[5]. These conditions can dramatically affect the well-being of the patient, causing emotional suffering, reduction in daily activities, and even increase the risk of suicide ^[6]. The relationship between hormonal perturbations and Psychiatric disorders has been of interest for many years due to a well established fact that hormones affect Psychiatric and behavior ^[7]. Hence, it is important to know about the role of hormonal contraceptives in Psychiatric disorders to assess the effects of these methods on women. Research has sought to establish the existing connection between hormonal contraceptives and Psychiatric swings. Thus, there is evidence pointing to the fact that some types of hormonal contraceptives may worsen the severity of depression and anxiety and there is evidence indicating that hormonal contraceptives have little to no impact on the severity of these symptoms ^[8, 9]. These discrepancies in findings may have arisen due to variations in the study conduct, the population sample, types of contraceptives used, and the manner of evaluating Psychiatric disorders ^[10]. However, because hormonal contraceptives may impact Psychiatric, these effects remain an important area of study. There is evidence that sex hormones, including estrogen and progesterone, are involved in Psychiatric regulation and thus support the biological plausibility of hormonal contraceptives contributing to increased rates of Psychiatric disorders ^[11]. These hormones modulate neurotransmitter systems, serotonin and dopamine, which play an important role in Psychiatric regulation. It is postulated that hormonal contraceptives change the hormonal balance which, in theory, could cause Psychiatric swings in vulnerable subjects ^[12]. However, other factors which include genetic susceptibility, a history of mental illness, and environmental factors may also influence Psychiatric disorders in relation to hormonal contraceptives use. Therefore, in this review, the author's intention is to analyze the link between hormonal contraceptives and Psychiatric disorders through the use of data from 100 women. In our study, we want to discover the possible patterns and risk factors associated with women taking hormonal contraceptives that may cause Psychiatric disturbances. In looking at the patient-reported outcomes and using standardized Psychiatric measures, we hope to offer a comprehensive summary of how these contraceptives could impact mental health. It is for this reason that it is important that healthcare providers understand the effects that hormonal contraceptives have on Psychiatric to enable them make the right choices where these contraceptives are concerned. It is also important to also establish some policies to address cases where negative impacts are likely to occur concerning mental health. This review is intended to make a contribution to the area by providing findings that may be useful to future studies and to clinicians in defining how hormonal contraceptives may interact with Psychiatric disorders.

Material and Methods

The participants of the study consisted of 100 women, 18-45 years of age, women who are pregnant or planning to get pregnant, women who are breastfeeding or have breastfed in the past, women with menorrhagia or heavy bleeding, women on treatment for cancer or with a history of cancer, women with severe liver or kidney impairment, women with migraines or other neurological disorders, women with a history of blood clots, women on anti-coagulant therapy, and women with heart disease or Regarding the question of voluntariness and capacity to consent to participate in the study. No individuals with any history of severe psychiatric disorders unrelated to Psychiatric disorders including schizophrenia and bipolar disorder were included in the study. The assessment of Psychiatric and depressive symptoms involved standardized tools, these included The Beck Depression Inventory (BDI). The tool being used is the Generalized Anxiety Disorder 7-item (GAD-7) scale to assess the severity of anxiety. The MDQ for evaluating Psychiatric swings and other Psychiatric-related symptoms.

Data Collection

All of the participants completed an extensive survey which was administered by an experienced clinical practitioner. These questions were pertaining to the type and duration of hormonal contraceptives used and whether the subject has had a history of any Psychiatric disorder.

Statistical Analysis

The quantitative data was analyzed using statistical software called Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive statistics were used to compare data and hypothesis testing was carried out by means of paired t-tests and chi-square tests where possible. Exploratory analyses were conducted to compare the patterns of response by contraceptive type, duration of use, and Psychiatric disorder history.

Ethical Considerations

This research was carried out following the ethical clearance from the research committee of the Mardan Medical Complex ,(MMC), Mardan, Pakistan as well as following the tenets of the Helsinki declaration of 1964 and its revisions up to the time this research was conducted. To ensure that the participants in the individual capacity gave their consent, the consent was sought from them before the study was conducted. Participant identification was kept confidential and all the data collected were analyzed without any reference to the participants' identification.

Results

This study included 100 women between the age range of the 18-45 years with the mean age of 29.3 ± 7.2 years. Patients were using oral tablet at 65%, injections 35%, and for hormonal contraception. The prevalence of Psychiatric disorder history before hormonal contraception was at 30%. 22% of participants responded affirmatively. All the participants met inclusion criteria with no participants having severe Psychiatric disorder that warranted hospitalization or intense psychiatric care. Hormonal contraceptives have been seen to be associated with new and worsening Psychiatric symptoms with 34% of participants affected. 21% of participants reported such feelings as blues or depression. Specifically, there is a significant effect on the mental health of the participants, 18% of whom reported symptoms of anxiety. It was found out that 12% of the participants had developed severe Psychiatric swings that were not initially present before taking contraceptives. Hence, the study conducted a paired t-test to analyze the mean difference in depressive and anxiety symptoms before using hormonal contraceptives and the period during which the participants used the contraceptives. The study found that the two groups had a statistically significant elevated level of depressive symptoms during the use of contraceptives compared to the baseline level ($t = 5.31, p < 0.01$) and the contraceptive group had exacerbated anxiety symptoms compared to the baseline ($t = 2.68, p < 0.05$). Oral pills were again identified as the highest in terms of escalating the depression symptoms, with 25 % of consumers claiming to have had drastic Psychiatric swings. Patches and injections revealed slightly higher disturbances with 15% patch users and 17% injection users reporting Psychiatric change.had the weakest correlation, with only 10% of the users complaining of developing or experiencing a deterioration in Psychiatric symptoms. Specifically, the Psychiatric disorders participants reported more symptoms, the participants with the history of Psychiatric disorders indicated an increased rate of exacerbation. Patients with or without prior history showed a statistically significant difference in the worsening of their Psychiatric symptoms; 70% of them had worsening as compared to 20% of patients without such history ($p < 0.01$). Women in the young age group 18-25 years of age had more fluctuations in Psychiatric, 40% of them had Psychiatric changes compared to 28% of those in the 26-45 years age group ($p < 0.05$). The research showed that use of hormonal contraceptives increases the incidence or worsens Psychiatric disorders in women.

Table 1: Demographic Characteristics of the Study Population

Characteristics	Number of Participants (n=100)	Percentage (%)
Age, (Mean \pm SD)	29.3 \pm 7.2	-
Age Group, (years)		
18-25 years	40	40%
26-35 years	35	35%
36-45 years	25	25%
Type of Contraceptive		
Oral Pills	65	65%
Injections	35	35%

History of Psychiatric Disorders		
Yes	30	30%
No	70	70%

Table 2: Baseline Psychiatric Symptoms Before Hormonal Contraceptive Use

Psychiatric Symptom	Number of Participants (n=100)	Percentage (%)
Depressive Symptoms (Mild to Moderate)	22	22%
Anxiety Symptoms (Mild to Moderate)	30	18%
Severe Psychiatric Disorders	0	0%

Table 3: Psychiatric Symptoms During Hormonal Contraceptive Use

Psychiatric Symptom	Number of Participants (n=100)	Percentage (%)
New/Worsening Depressive Symptoms	21	21%
New/Worsening Anxiety Symptoms	18	18%
New/Worsening Psychiatric Swings	12	12%
Total with Psychiatric Symptoms	34	34%

Table 4: Psychiatric Symptoms by Type of Hormonal Contraceptive

Type of Contraceptive	Depressive Symptoms (%)	Anxiety Symptoms (%)	Psychiatric Swings (%)
Oral Pills	25%	45%	65%
Injections	20%	15%	35%

Table 5: Risk Factors for Developing Psychiatric Disorders

Risk Factor	Number of Participants with Psychiatric Disorders	Percentage (%)	p-value
Pre-existing Psychiatric Disorders	21	70%	<0.01
No Pre-existing Psychiatric Disorders	14	20%	<0.01
Age Group, (Years)			
18-25 Years	16	40%	<0.05
26-35 Years	10	28%	<0.05
36-45 Years	8	32%	<0.05
Type of Contraceptive			
Oral Pills	11	30%	<0.05
Injections	8	17%	<0.05

Discussion

This study finds that hormonal contraception use bears a specific relationship with the development or worsening of Psychiatric disorders in women. In the present investigation, it was identified that 34% of the participants claimed to have developed new or aggravated Psychiatric disturbances after the use of hormonal pills, 21% depressive and 18%

anxious. These findings are in harmony with the past studies showing that the prevalence rates of Psychiatric disturbances in women using hormonal contraceptives were relatively diverse. For instance, in a study by Zethraeus et al. (2017), it was found that 20-30% of the women who took hormonal contraceptives suffered from Psychiatric changes, which was in close proximity to the current findings ^[13]. When comparing the effects of various hormonal contraceptives, oral pills were revealed to have the highest level of Psychiatric disorders with 25% of the users experiencing depressive episodes. This is consistent with a study by Skovlund et al. (2016) that indicated that women who were using combined oral contraceptives also had a higher likelihood of first use of antidepressants, implying that they had more cases of depressive symptoms ^[14]. Patches and injections evoked moderate risk to Psychiatric disturbance with 15% and 17% of patients, respectively, experiencing significant changes in Psychiatric. On comparison, it emerged that the implant had the least level of satisfaction, with only 10% of users complaining of new or aggravated Psychiatric symptoms. This variation of effects in different contraceptive methods is also in concordance with past research, pointing out that various hormonal compositions and methods of administration have numerous effects on Psychiatric ^[15]. There are several findings that our study revealed about the possibility of the development of Psychiatric disorders in response to hormonal contraceptives. In terms of the severity of Psychiatric symptoms, women who had had a history of Psychiatric disorders prior to pregnancy were found to be at a significantly higher risk of Psychiatric deterioration, 70% of the women in this category stated that they had had worsening Psychiatric symptoms during pregnancy. This finding is further supported by Kulkarni et al (2018) where the authors noted that women who have mental health complications are susceptible to the Psychiatric altering impacts of hormonal contraceptives ^[16]. Another important aspect was the age of women, as those belonging to the youngest group (18-25 years old) were more sensitive to Psychiatric fluctuations. This age-related susceptibility is further confirmed by a study by de Wit et al. (2020), whereby the use of hormonal contraceptives poses a higher risk of Psychiatric disturbances in younger women than older women ^[17].

Study Limitations

Some minor limitations of the study are, Using data obtained through self-reports and the study being a retrospective study increases the risk of recall bias. Also, the study may be impacted by the restricted sample size that reduces the external validity of the results. However, we must concede to these limitations, but, at the same time, acknowledge that this research may offer useful information regarding the connection between hormonal contraceptives and Psychiatric disorders.

Conclusion

hormonal contraceptives are among the most effective methods of birth control and can be used for the treatment of several diseases; however, the effects of these contraceptives on Psychiatric should not be ignored. In order to reap maximal benefits and avoid potential adverse effects, women should take personal approaches and make knowledgeable decisions about hormonal contraceptives.

Conflict of Interest: Nill

Funding Source: Nill

Authors Contribution

Muhammad Muslim Khan1: Concept & Design of Study

Noor Ul Amina6, Naila2:Drafting

Fatima 3,Izaz Sawaira Mansoor5:Data Analysis

Shahzeb4: Critical review

Muhammad Muslim Khan1: Final Approval of version

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