

## BRIDGING THE KNOWLEDGE GAP: EMPOWERING INFORMED CHOICES ON CONTRACEPTIVE PILLS

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Article Received on  
02 November 2024,

Revised on 23 Nov. 2024,  
Accepted on 13 Dec. 2024

DOI: 10.20959/wjpr202424-34930



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### ABSTRACT

This is an survey based study. This survey analyzes the awareness, understanding, and perceptions of contraceptive pills among 552 participants, highlighting significant gaps and misconceptions. Familiarity with hormonal pills varies, with only about half of respondents demonstrating strong knowledge, while others express limited or no familiarity. Awareness is highest for combined oral contraceptives but lower for other types, like emergency contraceptive pills, suggesting a need for broader public education. Many respondents lack an understanding of contraceptive mechanisms, side effects, and proper usage, with misconceptions about administration frequency and potential risks. Responses reveal that only 55% of participants know that contraceptive pills should be taken daily, with others incorrectly suggesting weekly or monthly intervals. While nausea is recognized as a common side effect, there's confusion about other less typical effects, like hallucinations. Education on

contraceptives is mainly obtained through school or healthcare providers, though social media plays a role as well. Regarding birth control options, hormonal methods and IUDs are well-recognized, while others, like natural family planning and sterilization, are less known. When it comes to access and confidence, only a small majority express high confidence in obtaining contraceptives. Participants report needing more information, especially on the

effectiveness and side effects of different contraceptive methods, underscoring a demand for comprehensive and accessible contraceptive education.

**KEYWORDS:** Contraceptive awareness, hormonal pills, combined contraceptives, action mechanisms, effects, education sources, birth control types.

## INTRODUCTION

Contraception is one of the common methods of family planning.<sup>[1]</sup> It is estimated that about 121 million unintended pregnancies occur worldwide yearly, and around 61% of these are ended in abortion.<sup>[2]</sup> In India every year, a large number of pregnancies are unplanned resulting in unsafe abortion. Usage of contraceptive pills (CPs) could be a solution provided the usage is as per guidelines and social issues do not cause objections.<sup>[3]</sup> Family planning or contraceptive methods refers to the utilization of methods that interfere with the normal processes of ovulation, fertilization, and/or implantation to prevent pregnancy as a result of sexual intercourse.<sup>[4]</sup> It has been estimated that the use of effective contraception could avert 90% of abortion-related and more than 20% of obstetric-related mortality globally.<sup>[5]</sup> The acceptance of contraceptive methods varies within societies and also among different castes and religious groups. The factors responsible operate at the individual, family and community level with their roots in the socio-economic and cultural milieu of Indian society.<sup>[6]</sup>

## METHODOLOGY

### Source of data

Data was collected from the results of well framed questioner on the basis of who guidelines.

### Study Site

This study was an survey based online platform study, offering several advantages for reaching a wide audience and analysis of data quickly.

### Sample size

The sample size for this study is 552 participants.

### Study duration

This study conducted over a period of 3 months from July 2024 to September 2024.

### Study criteria

This study was conducted with the following criteria in mind.

**Inclusion criteria**

Individuals aged 18 and above.

**Exclusion criteria**

Individuals below the age of 18.

**Data analysis**

All the data collected from the survey questionier were analysed to assess the awareness of hormonal contraceptives pills in various aspects like usage, side effects etc.

**Statistical analysis**

The standard statistics such as chi-square test and anova two way anaysis with the help of microsoft excel. these statsistics are used to describe the awareness on hormonal pills.

**RESULTS**

The survey results show mixed knowledge and some misunderstandings about contraceptive pills among the 552 participants. While about half of the respondents are well-informed about contraceptive options, others have limited knowledge, especially regarding emergency contraceptives and the proper daily use of pills. Most participants are aware that contraceptive pills prevent ovulation, but fewer understand additional ways they work, like thickening cervical mucus. A significant portion incorrectly believes pills can prevent sexually transmitted infections (STIs). People commonly learn about contraceptives in school or from healthcare providers, though some also get information from social media. There is limited awareness of other birth control methods, such as IUDs, natural planning, and sterilization. Most respondents know that women over 35 who smoke should avoid birth control pills, but other conditions affecting pill suitability are less understood. Many participants are unsure about what to do if they miss a pill, with some choosing incorrect or unsafe responses. Overall, people expressed a desire for more information on contraceptive effectiveness, side effects, usage, and costs, indicating key areas for better education on contraceptive options.

**RESULTS****1. What will you think when it comes about Hormonal pills?(552)**

<b>Not familiar.</b>	127(23%)
<b>Slightly familiar.</b>	120(21.7%)
<b>Moderately familiar</b>	153(27.7%)
<b>Very familiar.</b>	152(27.5%)

Of the 310 eligible participants who answered the questionnaire, over half (N=172; 55.5%) were in their final year of study. Final-year students' knowledge was significantly higher, based to the Mann-Whitney U-test ( $U=14,261.5$ ,  $p<0.001$ ).<sup>[8]</sup>

The survey results regarding familiarity with hormonal pills among the **552** participants reveal varying levels of awareness. **23%** of respondents indicated they are **not familiar** with hormonal pills, suggesting a significant knowledge gap that may hinder informed decision-making. **21.7%** are **slightly familiar**, indicating minimal exposure to information about hormonal contraceptives. In contrast, **27.7%** reported being **moderately familiar**, showing some understanding but still needing more comprehensive information. Finally, **27.5%** are **very familiar** with hormonal pills, likely due to personal experience or thorough education.

## 2. What type of contraceptive pills are you aware of?(552)

<b>Combined oral contraceptive pills</b>	225(40.8%)
<b>Progestin-only pills</b>	134(24.3%)
<b>Emergency contraceptive pills</b>	83(15%)
<b>I'm not sure</b>	110(19.9%)

The survey results indicate the types of contraceptive pills that respondents recognize. **40.8%** of participants indicated awareness of **combined oral contraceptive pills**, making them the most well-known option among those surveyed. Meanwhile, **24.3%** reported familiarity with **progestin-only pills**, showing a moderate level of awareness, though still notably lower than that of combined oral pills. Awareness of **emergency contraceptive pills** is at **15%**, suggesting that this option is less recognized, which points to a need for enhanced public education about its availability and usage. Additionally, **19.9%** of respondents expressed uncertainty regarding the types of contraceptive pills, indicating a lack of exposure to relevant information.

## 3. Which of the above following best describes how contraceptive?(551)

<b>they prevent ovulation</b>	180(32.7%)
<b>They thicken cervical mucus</b>	98(17.8%)
<b>They alter the uterine lining</b>	80(14.5%)
<b>All of the above</b>	193(35%)

The survey results show how respondents believe contraceptive pills work. **32.7%** of participants think that contraceptive pills **prevent ovulation**, which is one of the main functions. **17.8%** believe they **thicken cervical mucus**, making it harder for sperm to reach an egg. **14.5%** think that contraceptive pills **alter the uterine lining**, which can help prevent

a fertilized egg from attaching. Finally, **35%** of respondents chose "All of the above," indicating that they understand that contraceptive pills can work in multiple ways to prevent pregnancy.

#### 4. How often should a person take a daily contraceptive pill(551).

<b>Every day at same time.</b>	303(55%)
<b>Once a week.</b>	121(22%)
<b>Once a month.</b>	84(15.2%)
<b>Twice a week</b>	43(7.2%)

Of 406 women taking an oestrogen/progestogen combo pill, 71% were initially aware of the "12-hour rule" and 17% were aware of the "seven-day rule." By providing information about the pill, 212 respondents were able to enhance their level of knowledge about these rules to 82%.<sup>[14]</sup>

The survey results reveal how respondents believe daily contraceptive pills should be taken. **55%** of participants correctly indicated that a person should take the pill **every day at the same time**, reflecting an understanding of the recommended regimen for effective contraceptive use. However, **22%** believe it should be taken **once a week**, and **15.2%** think it should be taken **once a month**, both of which represent significant misconceptions about daily contraceptive pills. Additionally, **7.2%** of respondents think it should be taken **twice a week**.

#### 5. Which of these is a common side effect of contraceptive pills(550).

<b>Feeling sick to your stomach</b>	273(49.6%)
<b>Growing extra hair.</b>	100(18.2%)
<b>Loosing your appetite</b>	96(17.5%)
<b>Hallucinations.</b>	67(12.2%)
<b>all</b>	8(2.5%)

44.7% of women did not think they needed OC, and 39.9% of women who had never used it cited fear of OC side effects as a reason for not using it. Other women were uncertain about the implications, including headaches (28%), and mood swings (20.2%). Only 7.9% and 5.8% of women, respectively, agreed that OC can assist with premenstrual syndrome and acne issues, indicating that many were unaware of the benefits it offers for both menstruation and health.<sup>[10]</sup>

The survey results indicate respondents' awareness of common side effects associated with contraceptive pills. **49.6%** of participants identified **feeling sick to your stomach** as a common side effect, which is accurate and aligns with known effects of hormonal contraception. **18.2%** of respondents believe that **growing extra hair** is a common side effect, while **17.5%** mentioned **losing your appetite**, both of which can occur but are less common. Additionally, **12.2%** think that **hallucinations** are a side effect, which is not typically associated with contraceptive pills. Lastly, only **2.5%** of respondents selected "all," indicating a lack of understanding about the range of side effects.

#### 6. Have you ever received formal Education about Contraceptives?(552)

<b>Yes, in school/college</b>	298(54%)
<b>Yes through healthcare provider</b>	129(23.4%)
<b>Yes, through social media</b>	89(16.1%)
<b>No. Never</b>	36(6.5%)

The survey results indicate the sources from which respondents have received education about contraceptives. **54%** reported receiving formal education about contraceptives **in school or college**, suggesting that educational institutions play a significant role in providing this information. **23.4%** indicated they received education **through healthcare providers**, highlighting the importance of professional guidance in understanding contraceptive options. **16.1%** mentioned learning about contraceptives **through social media**, reflecting the growing influence of digital platforms on health education. Lastly, **6.5%** of respondents stated they have **never received** any formal education about contraceptives.

#### 7. Which of the following are birth control options for women?(551)

<b>Hormonal methods</b>	171(31%)
<b>IUDS</b>	172(31.2%)
<b>Condoms and Diaphragm</b>	96(17.4%)
<b>Natural family planning/ Calende method</b>	71(12.9%)
<b>Sterilization</b>	64(6.2%)
<b>All</b>	2(0.4%)

The survey results highlight respondents' awareness of various birth control options for women. **31%** identified **hormonal methods** as a birth control option, while **31.2%** recognized **IUDs** (intrauterine devices), indicating that these two methods are the most commonly acknowledged. **17.4%** of respondents are aware of **condoms and diaphragms** as contraceptive options, and **12.9%** mentioned **natural family planning or the calendar method**. Only **6.2%** identified **sterilization** as a birth control method. Interestingly, just

**0.4%** selected "All" options, suggesting a lack of comprehensive awareness about the range of contraceptive methods available.

#### 8. Which form of birth control offers the most protection against pregnancy?(551)

<b>A birth control pills</b>	282(51.2%)
<b>The patch</b>	64(11.6%)
<b>IUDS</b>	102(18.5%)
<b>Vaginal ring</b>	47(7.4%)
<b>Condoms</b>	57(10.3%)
<b>All of the above</b>	4(0.6%)

Six out of seven native women lacked literacy. 43.8% of people used contraceptives. The most common method was tubectomy (38.6%), while the most common cause for non-use was unfelt necessity (19.6%).<sup>[7]</sup>

Participants were questioned about the techniques of birth control they had used during their sexual lives. Condoms account for 77.4% of all contraceptive methods (370), with hormonal methods (pill, patch, and ring) coming in second at 32.8% (157). Coitus interruptus is still a common way for young people to avoid getting pregnant (27% (129)), and nearly 7.9% (38) do not use any approach at all.<sup>[11]</sup>

The survey results indicate respondents' perceptions of which form of birth control offers the most protection against pregnancy. **51.2%** identified **birth control pills** as the most protective option, suggesting a strong awareness of their effectiveness when used correctly. **18.5%** recognized **IUDs** (intrauterine devices) as a highly effective method, while **11.6%** selected **the patch**. **7.4%** of participants chose the **vaginal ring**, and **10.3%** identified **condoms** as a protective method. Only **0.6%** selected "All of the above," indicating a limited understanding of the varying effectiveness of different contraceptive methods when used in combination.

#### 9. Who should not use birth control pills(550).

<b>A Women who are over age 35 and smoke</b>	<b>270(49.1%)</b>
<b>Women who have bra heavy periods(or) Endometriosis.</b>	181(32.9%)
<b>Women who have Pre menstrual syndrome.</b>	82(14.9%)
<b>Women who have acne</b>	17(3.1%)

The survey results identify who respondents believe should not use birth control pills among **550** participants. **49.1%** indicated that **women over age 35 who smoke** should avoid birth control pills, reflecting awareness of the associated health risks, such as increased chances of blood clots. **32.9%** believe that **women with heavy periods or endometriosis** should not use them, possibly due to concerns about potential complications. **14.9%** identified **women with premenstrual syndrome (PMS)** as a group that should avoid birth control pills, while only **3.1%** suggested that **women with acne** should refrain from using them.

#### 10. Certain types of birth control pills can get rid of your period almost entirely.(552)

<b>True</b>	387(70.1%)
<b>False</b>	165(29.9%)

The survey results show that **29.9%** of participants answered "**False**" to the statement that certain types of birth control pills can **get rid of your period almost entirely**. This suggests that many people may not know that some hormonal contraceptives can actually reduce or eliminate periods, especially those taken continuously. This highlights the need for better education about how different birth control pills can affect menstrual cycles, so individuals can make informed choices about their options.

#### 11. Do you know contraceptive pill help to protect you from Sexually transmitted infections?(552)

<b>Yes</b>	323(58.5%)
<b>No</b>	229(41.5%)

The majority of respondents (n = 84; 65.1%) correctly answered the question on whether or not male condoms can protect against sexually transmitted illnesses.<sup>[13]</sup>

The survey results reveal that **58.5%** of participants answered "**Yes**" to the question of whether contraceptive pills help protect against sexually transmitted infections (STIs), while **41.5%** answered "**No**." This indicates that a majority of respondents have some understanding of contraceptive methods, but a significant portion may not realize that contraceptive pills do not provide protection against STIs.

#### 12. Where can you get a contraceptive pills?(551)

<b>From a doctor with a prescription.</b>	222(40.3%)
<b>At the grocery store</b>	122(22.1%)
<b>From a friend.</b>	81(14.7%)
<b>From medical shop</b>	126(22.9%)

Of the total number of students, 384 (85.5%) had heard of ECPs, of whom 195 (92.9%) were male and 189 (90.1%) were female ( $p=0.001$ ). Participants gathered information about ECPs from a variety of sources, including television (299 (70.9%)), magazines (139 (36.2%)), friends (103 (26.7%)), the internet (95 (24.7%)), movies (87 (22.7%)), posters (42 (10.9%)), text books (36 (9.3%)) and relatives (14, 3.6%). Only a small number of participants received information from healthcare professionals, such as do One student each reported receiving reproductive health education (RHE) at the health centre and at home (from parents).<sup>[12]</sup>

The survey results show where participants think they can get contraceptive pills among the **551** respondents. **40.3%** said they can get them **from a doctor with a prescription**, showing they understand the importance of getting medical advice. **22.9%** believe they can get pills **from a medical shop**, which is accurate since pharmacies sell them. **22.1%** think they can find contraceptive pills **at the grocery store**, which may be confusing, as not all grocery stores sell medications. Finally, **14.7%** believe they can get pills **from a friend**, which is risky because sharing medications can lead to problems.

### 13. How confident are you in your ability to access contraceptives when needed?(551)

<b>1</b>	212(38.5%)
<b>2</b>	139(25.2%)
<b>3</b>	99(18%)
<b>4</b>	49(8.9%)
<b>5</b>	52(9.4%)

More than half of OCP users preferred them to other forms of contraception, indicating that women had a favourable attitude and good knowledge of the procedure.<sup>[9]</sup>

The survey results indicate varying levels of confidence among participants regarding their ability to access contraceptives when needed among the **551** respondents. **38.5%** of participants rated their confidence as **1**, indicating a high level of confidence in their ability to obtain contraceptives. **25.2%** rated their confidence as **2**, showing a moderate level of assurance. Meanwhile, **18%** rated their confidence as **3**, suggesting uncertainty. **8.9%** rated their confidence as **4**, indicating lower confidence, and **9.4%** rated it as **5**, showing a lack of confidence in accessing contraceptives.

**14. What information about contraceptives do you feel you need more of(551)**

<b>Effectiveness of different methods</b>	237(43%)
<b>Side Effects and risks</b>	162(29.4%)
<b>How to use each method correctly</b>	97(17.6%)
<b>Cost and Accessibility.</b>	52(9.4%)
<b>All of the above</b>	2(0.4%)

The survey results show the types of information participants feel they need more about contraceptives among the **551** respondents. **43%** indicated they want to know more about the **effectiveness of different methods**, suggesting that understanding how well each option works is a priority for many. **29.4%** expressed a desire for information on **side effects and risks**, indicating concerns about the potential health impacts of contraceptives. **17.6%** want to learn **how to use each method correctly**, which is important for ensuring proper usage. Finally, **9.4%** are interested in information about **cost and accessibility**, highlighting the importance of understanding financial considerations. Only **0.4%** selected "All of the above," suggesting that most respondents have specific areas they want to focus on.

**15. If you miss a dose of your contraceptive pill, what should you do(551)**

<b>Skip it and continue as usual.</b>	242(43.9%)
<b>Take the missed pill as soon as you Remember</b>	216(39.2%)
<b>Stop taking the pills for the rest of the month.</b>	74(13.4%)
<b>Double the dose the next day.</b>	19(3.4%)

The survey results indicate participants' understanding of what to do if they miss a dose of their Contraceptive pill among the **551** respondents. **43.9%** believe they should **skip it and continue as usual**, which is not the recommended approach for many types of contraceptive pills. **39.2%** correctly indicated that they should **take the missed pill as soon as they remember**, which is generally advised for maintaining effectiveness. However, **13.4%** stated they would **stop taking the pills for the rest of the month**, indicating a misunderstanding of proper contraceptive use. Lastly, **3.4%** thought they should **double the dose the next day**, which can be unsafe and is not recommended.

**CONCLUSION**

The survey highlights significant gaps in knowledge about contraceptive pills, including their proper use, effectiveness, and side effects. Misconceptions about STI protection and the varied mechanisms of contraceptives suggest a need for clearer, more accessible education. With many relying on schools, healthcare providers, and increasingly social media for information, enhancing these sources could empower individuals to make safer, more

informed choices about contraception. Addressing these knowledge gaps can lead to better health outcomes and more confident decision-making regarding reproductive health.

### **Abbreviations**

Combined Oral Contraceptives – COCs, Emergency Contraceptive Pills –ECPs, Intrauterine Device – IUD, Natural Family Planning – NFP, Contraceptive Pills – CPs, Hormonal Contraceptives – HCs, Sexually Transmitted Infections – STIs, Birth Control Methods – BCMs.

### **ACKNOWLEDGEMENT**

We gratefully acknowledge Vignan Pharmacy College, Vadlamudi, Chebrolu, Guntur for support.

### **Author's Contribution**

ST contributed to the idea of the study and work proposal and supervision; GM collected the patient data, consent for the study, and documentation regarding COPD with acute exacerbations; analyzing, interpreting, and writing the manuscript. “All authors read and approved the manuscript.”

**Funding:** Nil.

### **Availability of data and materials**

All data generated or analyzed during this study are included in this published article.

### **Ethics approval and consent to participate**

Not Applicable.

### **Consent for publication**

Not applicable.

### **Competing interests**

The authors declare that they have no competing interests.

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