

# Impact of the Lockdown Due to COVID-19 Pandemic in the Use of Combined Hormonal Oral Contraception in Spain – Results of a National Survey: Encovid

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**Objective:** To know the contraceptive behaviour of Spanish women who use combined oral contraception (COC) during the period of lockdown due to COVID-19.

**Methods:** Cross-sectional, descriptive study of a sample of Spanish women who use COC based on a survey conducted through social networks using the online platform Survey Monkey. The survey was conducted during the period of home confinement.

**Results:** A total of 1407 women answered the survey and 937 were valid for the analysis. A total of 675 women (71.8%) were confined all day at home. During confinement 96.6% of women continued to use the COC, 53.5% responded that their sexual activity decreased during this time and 54% that their physical activity had decreased. A significant percentage of women (10.3%) recognized a worsening of premenstrual symptoms.

**Conclusion:** Despite the lockdown and the decrease in the frequency of sexual intercourse, the Spanish women who use COC did not abandon its use during the period of time analysed.

**Keywords:** COVID-19, confinement, combined oral contraception, discontinuation, premenstrual symptoms

## Introduction

During the months of March, April and May of 2020, the Spanish population was confined to their homes to avoid the transmission of the pandemic by COVID-19. Lockdown meant that people had to remain in their homes, without leaving, with the exception of supplying food or pharmaceutical products or carrying out tasks considered essential.<sup>1</sup> This situation, unknown to date, by most of the European population, meant a change in the daily habits and routines of most of Spanish society.

The exceptional situations of quarantine and prolonged confinement of certain populations to prevent the spread of pathogens that cause acute and serious infectious diseases, as occurred in the city of Toronto during the SARS virus epidemic in 2004, and more recently in the Chinese city of Wuhan with the COVID-19 outbreak, have caused various psychological and behavioural disorders in the confined population.<sup>2</sup> One of the possible consequences of this type of alteration could be related to the sexual sphere and the use of contraceptive methods during the period of confinement.

In Spain, around 18.5% of the female population of childbearing age uses combined oral contraception (COC) to prevent pregnancy.<sup>3</sup> In our country, COC must be prescribed by a doctor and we hypothesize that the lockdown could negatively influence its accessibility and use. With this survey, we set out to know the behaviour, during the confinement period, of women who use this type of contraception in Spain.

## Materials and Methods

### Design

Cross-sectional, descriptive study. During the lockdown period, we have carried out an anonymous, short and simple survey, using the digital platform “Survey Monkey” aimed at women who use COC.

### Population

Women participating in the survey were divided into three groups in relation to the degree of confinement they reported: Group 1, made up of the women who remained confined all day, except going out on small errands (total confinement); Group 2, which included women with occasional work outside the home (medium confinement); and Group 3 in which the women who were only confined on holidays and weekends were grouped because they continued to work full time outside the home (minimum confinement).

### Main Objective

Know the contraceptive habits and some of the daily activities of women of childbearing age who use COC, during the period of confinement caused by the coronavirus pandemic.

### Secondary Objectives

Assess the impact of confinement on mood and health habits related to the use of contraceptives such as: menstruation and premenstrual symptoms.

### Survey

For the study, a 19-item questionnaire was developed, agreed by the Steering Committee of the same, composed of the authors of the article (all of them experts in contraception and sexual and reproductive health) and which is presented in [Figure 1](#). The survey was distributed to the users through their gynaecologist. This one by direct contact: phone, mail, SMS, virtual direct contact; or by

indirect contact with social networks or the clinic website, it provided the user with a link to a survey hosted on the Survey Monkey gateway (<https://www.surveymonkey.com/r/YVBPDJXJ>), through an account with no limit on the number of responses. To avoid duplication of the survey by the same user, the system recognizes the device that has already sent a previous survey and if you are going to do a second survey, it shows you a message saying that the survey has already been completed and processed.

The survey distribution period was 2 months, from March 15 to May 15, 2020. The data entered by the contraceptive users on the Survey Monkey website were archived in a database where no personal data are collected. This database was managed by the researcher who developed this project (IL). The data entered into the database were encrypted and the database was password protected.

A data validation plan was developed to verify and control existing inconsistencies with respect to the action plan described in the protocol, as well as to detect possible lost data or duplicate data. These filters were applied before starting the data analysis. Before carrying out the statistical analysis, the database was purged and the data from it were validated as a control process, with special emphasis on the main objective of the study, to guarantee the quality of the data and the results.

### Statistical Analysis

In the first place, the number of surveys that were not sufficiently complete or did not meet the inclusion criteria were censured breaking down the reasons, thus obtaining the final valid sample for the analysis.

Second, a general description is made of the characteristics of the users who fill out the survey (age and origin) and the contraceptive method they use. Categorical variables (all survey questions) are described by their absolute and relative frequency distribution, while the continuous variables (age) are described by measures of central tendency and dispersion: mean and standard deviation.

For categorical variables, contingency tables are presented with the frequency in each category and the percentage by columns. To evaluate the possible association, Chi square tests or Fisher's exact statistics were performed and the p-value obtained is detailed. The comparison of means was carried out using the Student's *t* method. For statistical analysis, we used IBM SPSS Statistics for Windows, version 22.0, considering a p value of < 0.05 to be significant.

## Survey Questions

1. Birthdate
2. Postal Code
3. Number of Children (0, 1, 2, 3, more than 3)
4. Please indicate what percentage of your time you are confined at home:
  - a. All day except going on little errands
  - b. I work punctually away from home (less than half a day)
  - c. Only on holidays and weekends because I still work full time outside the home
5. On the days of confinement, your consumption of alcohol or tobacco ...
  - a. It has decreased
  - b. Still the same
  - c. It has increased
6. Contraceptive method you use: if you know the name of your contraceptive, indicate it, and if you do not use any method, not even a condom, indicate that you do not use.
7. On the days of confinement, you have continued to use your pill? Yes / No
8. Just in case of having stopped using the pill, what has been the cause?
  - a. I forgot to take it
  - b. I have stopped having sex
  - c. I have experienced unacceptable side effects
  - d. I have had difficulty getting the new blister at the pharmacy, or I have not left home to buy it
  - e. Other reasons

Figure 1 Continued

9. In the case of forgetting to take a pill, the forgotten pill has been taken in:
  - a. Less than 12 hours
  - b. More than 12 hours
  - c. Más de un día
  
10. On days of confinement, your sexual activity:
  - a. It has decreased
  - b. Still the same
  - c. It has increased
  
11. On days of confinement, your physical activity:
  - a. It has decreased
  - b. Still the same
  - c. It has increased
  
12. On days of confinement, your diet:
  - a. Has worsened (less healthy and / or more abundant diet)
  - b. Still the same
  - c. Has improved (healthier diet)
  
13. In the days of confinement, you have been concerned about:
  - a. Possible weight gain: Yes / No
  - b. A possible negative effect of sedentary lifestyle on your health: Yes / No
  - c. Increased emotional instability or feeling of anxiety: Yes / No
  - d. Affection of your sexuality or decrease of sexual desire: Yes / No
  - e. My relationship with my partner has been affected, either for reasons that affect sexuality and others: Yes / No

**Figure 1** Continued

14. On the days of confinement, your emotional state, in general:
  - a. It has decreased
  - b. Still the same
  - c. It has improved
15. Have you had periods on the days of confinement? Yes / No (answer only question 19)
16. If you have had your period these days, consider that:
  - a. I have not had premenstrual symptoms
  - b. I had premenstrual symptoms before taking the pill, but since taking it they have decreased or disappeared (also answer question 19)
  - c. I have had premenstrual symptoms, but with the same intensity as in previous periods
  - d. I have had more or more severe premenstrual symptoms
17. If you have had premenstrual symptoms, what type have they been? (You can choose more than one option)
  - a. Physical such as: pain (head, lower back, menstrual ...), abdominal or breast swelling, weight gain or fluid retention, dizziness, hot flashes etc.
  - b. Psychic such as: insomnia, confusion, lack of concentration, decreased performance, feeling of suffocation, feeling of anxiety etc.
  - c. Emotional such as: feeling lonely or sad, feelings of well-being, bursts of energy or activity, mood swings, irritability, etc.
18. In case you have experienced new premenstrual symptoms, what do you think it could be due to?
  - a. To the pill that I am taking
  - b. To the confinement situation that I have experienced
  - c. Other reasons
19. If your premenstrual symptoms have decreased since taking the pill, please indicate to what degree this improvement affects your quality of life:
  - a. Slightly (my quality of life remains the same as before taking the pill)
  - b. Moderate
  - c. Has improved a lot

**Figure 1** Encovid questionnaire.

**Table 1** Characteristics of the Women Included According to the Degree of Confinement

	<b>Group 1 N=675</b>	<b>Group 2 N= 113</b>	<b>Group 3 N=149</b>	<b>P value</b>
Age (Mean $\pm$ SD) in years	32 $\pm$ 4.2	32 $\pm$ 9.1	31 $\pm$ 1.4	NS
Parity				
Nullipara	449 (66,5)	68 (60,2)	115 (77,2)	< 0.05*
1 or more	226 (33,5)	45 (39,8)	34 (22,8)	

**Note:** \*Group 3 versus Groups 1 and 2.

**Abbreviations:** SD, standard deviation; NS, not significant.

## Ethics

As it is an anonymous survey, the Spanish health authorities do not require obtaining informed consent. IRB approval is not required.

## Results

During the study period, 1407 surveys were collected. After cleaning the database, 937 women were valid for the study (Figure 2). The mean age of the 937 women included in the study was 32 years (Standard Deviation  $\pm$  4.3 years) and 72.6% were nulliparous. All of them were using a COC at the time of confinement. Of the 937 taking CHC, 206 (22%) took an oestradiol-based pill and 731

(78%) took an ethinyl oestradiol-based one. A total of 462 women were removed from the analysis for the following reasons: 114 were not using any method at the time of answering the survey, 87 were using a condom, 85 were using a vaginal ring, and the rest were using other contraceptive methods.

Of the 937 patients who answered the questionnaire, 675 (71.8%) belonged to group 1 (total confinement), 113 (12%) to group 2 (medium confinement); and 149 (16.2%) to group 3 (minimum confinement). Table 1 shows the characteristics related to age and parity of the women included in the study. It should be noted that group 3 had more nulliparous women than in the other two groups.

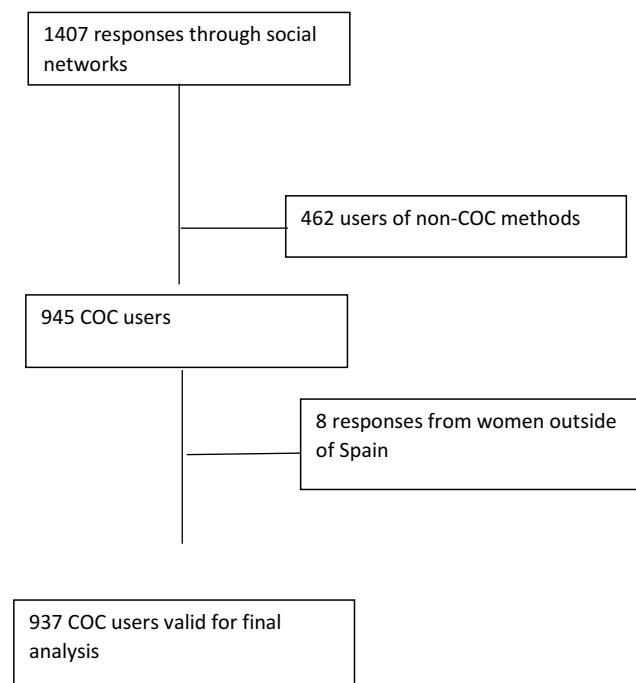
Table 2 presents the results regarding the contraceptive behaviour and compliance of the patients, sexual activity, the emotional impact of confinement and menstrual symptoms. The fact that 96.6% of them continued to use COC during the study period stands out.

Up to 53,5% of participants reported that their sexual activity had decreased during the confinement period and 54% that their physical activity had also decreased. A total of 830 patients (88.6%) had an episode of menstrual bleeding at least, while 107 women (13.4%) did not have withdrawal bleeding despite using COC and undergoing the hormone-free period. Of the 830 women who reported having a menstruation, 86 (10.3%) reported having experienced a worsening of the menstrual symptoms they previously experienced.

## Discussion

Our results show that the degree of confinement (total, medium or minimum) did not influence the contraceptive behaviour or the emotional impact of the Spanish women who participated in the study, except in the group of women with medium confinement. (group 2) in which a greater negative impact on mood was reported. A possible explanation for this finding could be the fact that these women were subjected to pressure from homework and work outside the home, since they combined both activities part-time. It is also possible that they were afraid of being able to infect their relatives due to their activity outside the home.

In our study, 96.6% of the women continued taking their COC during the period of confinement. There were very few discontinuations, some of them related to experiencing side effects and others with the difficult accessibility of the method, due to confinement. The high rate of continuity of use can be explained because the analysis period was only 2 months and by the fact that most of the women spent most of



**Figure 2** Flow-chart of the patients who responded to the Encovid survey.

**Abbreviation:** COC, combined oral contraception.

**Table 2** Results Regarding the Contraceptive Behaviour and Compliance of the Patients, Sexual Activity, the Emotional Impact of Confinement and Menstrual Symptoms

	Group 1 N=675	Group 2 N=113	Group 3 N=149	p value
Continued taking the COC				
Yes	649 (96,1)	111 (98,2)	145 (97,3)	NS
No	26 (3,9)	2 (1,8)	4 (2,7)	
Reasons for discontinuation (N=32)				NA
Forgotten	4	1	0	
No sexual intercourse	5	0	0	
Side effects	5	0	0	
Difficulty getting	4	0	0	
Desire of pregnancy	0	0	4	
Other reasons	8	1	0	
Forgot taken the pill				NS
No	554 (82,0)	98 (86,7)	126 (84,5)	
Yes	121 (18,0)	13 (13,3)	23 (15,5)	
12–24 hours	56 (46,3)	6 (46,1)	8 (34,8)	
> 24 hours	65 (53,7)	7 (53,9)	15 (65,2)	
Sexual activity				NS
Decreased	379 (56,1)	49 (43,3)	73 (49,0)	
Same	224 (33,2)	47 (41,6)	55 (36,9)	
Increased	72 (10,7)	17 (15,1)	21 (14,1)	
Physical activity				NS
Decreased	353 (52,3)	73 (64,6)	82 (55,0)	
Same	139 (20,6)	21 (18,6)	40 (26,8)	
Increased	183 (27,1)	19 (16,8)	27 (18,2)	
Emotional state				<0.05
Worsened	374 (55,4)	47 (41,6)*	82 (55,0)	
Same	278 (41,2)	62 (54,8)*	65 (43,6)	
Improved	23 (3,4)	4 (3,6)	2 (1,4)	
Have had the period				NS
Yes	604 (89,5)	99 (87,6)	127 (85,2)	
No	71 (10,5)	14 (12,4)	22 (14,8)	
Have had premenstrual symptoms				NS
Yes	498 (73,8)	79 (69,9)	103 (69,1)	
No	106 (26,2)	20 (30,1)	24 (30,9)	

**Note:** \*Group 2 versus Groups 1 and 3.

**Abbreviations:** NS, not significant; NA, not applicable.

the confinement in their homes, together with their partners and, despite the fact that the frequency of sexual intercourse decreased in 53.5% of the cases, close contact with the partner could influence the decision to continue being protected from an unwanted pregnancy.

Despite the high continuity of use, the percentage of women who reported forgetting a pill for more than 24 hours was 15.2%. This means that, despite the fact that confinement may have been an ideal situation for the establishment of routines, forgetfulness continued to occur.

In a study conducted in Turkey during the first wave of the pandemic, a decrease was found in the percentage of women using contraception, before and during the pandemic (41,3% vs 17.2%,  $p=0.004$ ), despite the fact that a lower gestational desire was also reported.<sup>4</sup> The study authors were unable to determine the reasons why, despite wanting to avoid pregnancy, the women used less contraception.

In another study with similar characteristics carried out in South Africa, it was observed that among women subjected to confinement there was an increase in the use of

oral contraception and a decrease in the use of methods that require the participation of the healthcare professional for their treatment, insertion, etc. (IUD, implant).<sup>5</sup> This fact is plausible due to the limitations and restrictions of access to healthcare professionals that occurred in the confinement situation. In our study, 12.5% of the women who abandoned the use of the pill did so due to difficulties/inability to access a prescription.

In a study conducted in Italy in which information was collected from 317 women who used hormonal contraception before confinement authors found that all the women who lived with their partner during the confinement period continued to use their hormonal method, including those who used COC, while those women who did not live with their partner were more likely to abandon the hormonal method they used.<sup>6</sup> In this study, the determining factor for the continuity of use was living with the partner, rather than age. In this case, the mean age of the sample was 26.8 years, while in our study it was 32 years. Older women are more likely to live with their partners due to greater economic stability.

Some scientific societies have recommended restricting the use of combined hormonal contraception during the pandemic due to the possible increased risk of venous thromboembolic disease secondary, on the one hand, to the taking of this type of contraceptive and, on the other, to the greater risk of thromboembolism reported in patients with COVID-19,<sup>7</sup> while other scientific societies have made less restrictive recommendations, based on the mechanism by which thrombotic events occur.<sup>8,9</sup>

Despite these recommendations, most of the women in our study continued to use COC and none cited this fear to abandon the method. In addition, it is likely that in this decision to continue using the method, the known fact that women who accept and tolerate the contraceptive method well should not change it to another plays a predominant role.<sup>10</sup>

During the pandemic, thousands of articles related to SARS-CoV-2 infection have been published and some of them related to its transmission route. Some authors have found a possible route of infection through sexual intercourse<sup>11,12</sup> and as a consequence recommendation have been made to reduce or avoid sexual intercourse during the pandemic.<sup>13</sup>

In our survey, 53.5% of the women responded that their sexual activity had decreased during the pandemic period, but we doubt that this decrease in sexual activity is related to the aforementioned recommendations. Probably,

this decrease in frequency is more related to the conditions of confinement, less privacy due to the continuous family life and lack of sexual stimulation as a consequence of the conditions described above.

In a study with similar characteristics to ours, information was collected from 1018 Italian women and 558 men about their sexual activity during confinement. The average number of sexual relations decreased significantly, mainly due to the lack of privacy (45.2% of the responses) and the lower sexual stimulus (40.9%).<sup>14</sup>

A recent French study in which the database of prescription of hormonal contraceptive methods was analysed has found a decrease in the use of methods that require the participation of the health professional.<sup>15</sup> Their conclusions seem logical due to the accessibility barriers during confinement.

Our study has a series of limitations. It is a survey that uses social networks for its dissemination, so there is no specific population, target, on which it has intervened. It is likely that women who have participated did so for specific reasons of experience during confinement that our survey could not identify. For this reason and due to the low sample size, we cannot extrapolate our results to the entire Spanish female population. Despite the limitations, this is the only survey, to our knowledge, that has attempted to find out the impact of confinement on sexual activity and the use of contraception among Spanish women, so the results are the only ones available in our environment. In addition, the absolute anonymity of the patients is an element that has been able to help to respond more honestly to the questions in the survey.

## Conclusions

In our study, we have found that Spanish women who use COC, despite home confinement and the decrease in the frequency of sexual relations, did not abandon its use during the period of time analysed. The intensity of confinement did not influence the contraceptive habits of the participating women.

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## Disclosure

IL is a medical advisor to MSD Spain and Adamed and has received grants, personal fees from Theramex Spain, grants from MSD Spain, and from Adamed Spain. JN is an



employee of Theramex. EdIV has received honoraria for consulting, being part of advisory boards or lecturing from Theramex, MSD, Gedeon Richter, Shionogi, Bailleul and Lacer.

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