

# Is Contraception Usage Affected During Corona Virus Disease 2019 Pandemic Among Women in Saudi Arabia?

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## ABSTRACT

**Background:** Contraception has many benefits beside improving women health such as increasing child survival and improving perinatal outcomes due to interpregnancy interval regulation.

**Objectives:** to assess the knowledge and attitude of Saudi women regarding the use of contraceptives, to measure the prevalence of contraception use, and to highlight factors affecting the use of contraception among women in the Kingdom of Saudi Arabia during covid 19 pandemic.

**Methods:** This is a comparative cross-sectional descriptive study involving 432 saudi arabian women during the period from July 2021 to July 2022. Data was collected through an online questionnaire formulated to survey saudi women due to covid 19 pandemics measures.

**Results:** Overall knowledge was good among 48% of participants. Regarding attitude towards contraception use. About 77.8% agreed to use contraception while only 3% disagreed. 90.7% had an experience with contraceptive methods either currently or previously. Coitus interruption was the commonest method used by about 20%, followed by COC (18%), then condom (12.5%). Predictors for higher use were husband higher education, gravidity of two to four and previous one to two cesarean section (AOR=10.048,283,20.047 respectively).

**Conclusion:** Participants had good contraceptive knowledge and positive attitude towards contraception use. Proportion of contraceptive methods use was high among participants. We recommend more health education campaigns about the importance of contraception especially during the COVID 19 pandemic and among women who had previous cesarean section. We also recommend more research involving a representative sample from all regions of the kingdom.

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## INTRODUCTION

World health organization (WHO) reported that birth spacing is one of the six essential health interventions needed for Safe motherhood.<sup>1</sup> Saudi Arabian population growth rate in 2007 was the third highest among the Eastern Mediterranean countries.<sup>2</sup> A report by WHO showed that prevalence of contraception use in Saudi arabia in 2011 was 23.8%.<sup>3</sup>

Contraception has many benefits beside improving women health such as increasing child survival and improving perinatal outcomes due to interpregnancy interval regulation.<sup>4</sup> Furthermore, contraceptive methods have many therapeutic benefits other than pregnancy prevention such as menstrual cycle regulation, polycystic ovary syndrome and decrease some gynecological malignancies risk.<sup>5</sup> Hormonal, mechanical, chemical, natural and surgical methods are available for achieving contraception<sup>5</sup>. Contraception use has complications especially due to hormonal methods, however its benefits outweigh these complications.<sup>5,6</sup>

Proportion of contraception use in The Kingdom of Saudi Arabia was low in some previous studies which can be explained by the tradition of Islamic countries to have many children.<sup>7-9</sup>

Health care workers should ensure continuity of providing reproductive health care to women during covid 19 pandemic (in case of service interruption as annual exams appointments are cancelled) to maintain the success of family planning services helping lowering maternal mortality and improving child health. Around the world many women and children may die due to inaccessible reproductive health care services rather than from covid 19 itself.<sup>10</sup> For continuation of contraceptive process, existing systems must be adapted such as the use of a “no touch” approach.<sup>11</sup> Online prescriptions or telephone consultation can be used, and each region should choose the appropriate method of communication. No data

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### KEYWORDS:

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contraindicate contraceptive use during covid 19 pandemic, so women should continue their use to prevent unintended pregnancies.<sup>12</sup> Furthermore, sex hormones may show some protection from covid 19 as the number of men dying from covid 19 is much higher than women.<sup>13</sup> No studies were made to assess the impact of covid 19 on the use of contraception methods in Saudi Arabia. So, this research aims to assess the knowledge and attitude of Saudi women regarding the use of contraceptives, to measure the prevalence of contraception use, to highlight factors affecting contraception use and to identify the most preferable methods of contraception among women in the Arab Kingdom of Saudi during covid 19 pandemic to help decision making for providing the right reproductive health care.

## METHODOLOGY

This is a comparative cross-sectional descriptive study. Target population were Saudi Arabian women during July 2021- July 2022. An online questionnaire was formulated to survey Saudi women online due to covid 19 pandemic measures. The questionnaire was formed of 3 parts. The first section assessed demographic data. The second section assessed obstetric and medical history. The third section assessed knowledge, attitude and practice of contraceptive methods. 432 Saudi Arabian women filled the questionnaire. Consent was obtained from participants during questionnaire filling with no potential risks to the participants.

### Statistical analysis

Statistical analysis was done using SPSS (statistical package for social science) version 25. Qualitative data were expressed

as numbers and percentages while quantitative data as mean and SD. Chi-square test was used for comparing according to contraception use. Logistic regression was used to assess predictors for contraception use. Statistical significance were considered when P value is less than 0.05.

## RESULTS

Among 432 women, the mean age was 34±5.88 while husband mean age was 36±9.59. 62.5% had family income more than 10000 SR. 84.3% were non-smokers. 96.3% lived in urban areas. 90.7% had higher education, while 85% of participants' husbands had higher education. About 80% have been married for more than 5 years. 60% were Saudi, while about 89% of participant's husbands were Saudi. Only 5.6% worked in the medical field while 6.5% of participants' husbands worked in it (Table 1). 90.7% had experience with contraceptive methods either currently or previously (Figure 2).

About 14% are pregnant. 60% of participants had gravidity of two to four times. 55% had no abortion before. 46.8% had one or two normal vaginal delivery while 56.5% had C/S section before. 83% were free from diseases (Table 2).

46 women (10.6%) were aware of all contraception methods. While 30 women (6.9%) were aware of all contraception methods except vasectomy. However, 10 women (2.3%) were aware of all contraception methods except tubal ligation, vasectomy and emergency contraception pills.

Regarding knowledge about contraceptive methods, 96.8% did not know it is necessary to know the different contraceptive methods. More than 72.7% did not know that if there was family history of breast or uterine cancer, they suffered

**Table 1:** Demographical characteristics of the studied women in the Kingdom of Saudi Arabia (n=432)

		N	%
Age in years (mean ± SD)		34±5.88	
Husband age in years (mean ± SD)		36±9.59	
Family income in SR	1. less than 3000	14	3.2%
	2. 3000-6000	40	9.3%
	3. 6000-10000	108	25.0%
	4. more than 10000	270	62.5%
Smoking	1. yes	54	12.5%
	2. no	364	84.3%
	3. previous smoker	14	3.2%
Residence	1. urban	416	96.3%
	2. rural	16	3.7%
Educational level	Lower education	40	9.3%
	Higher education	392	90.7%
Husband educational level	Lower education	64	14.8%
	Higher education	368	85.2%
Marriage period	less than 5 years	86	19.9%
	more than 5 years	346	81.1%
Nationality	Non-Saudi	170	39.4%
	Saudi	262	60.6%
Husband nationality	Non-Saudi	48	11.1%
	Saudi	384	88.9%
Occupation	Non-medical field	408	94.4%
	Medical field	24	5.6%
Husband occupation	Non-medical field	404	93.5%
	Medical field	28	6.5%

of migraine with visual disturbance or they were smoking and more than 35 years old, they should not use hormonal methods containing estrogen and should use another method. More than 63% did not know that hormonal contraceptives

especially that containing estrogen are contraindicated with cardiovascular diseases, poor control hypertension and diabetes mellitus, thrombosis tendency and they should use another method (Table 3).

Overall knowledge was good among 48% of participants (figure 2).

Table 3: Knowledge of the studied women in the Kingdom of Saudi Arabia about contraception (n=432)

	Wrong answer		Correct answer	
	N	%	N	%
<b>Did you know:</b>				
It is necessary to know the different contraceptive methods?	418	96.8%	14	3.2%
The importance of family planning in maintaining the health of the mother and children?	40	9.3%	392	90.7%
If one of your first-degree relatives has a history of breast or uterine cancer, you should not use hormonal contraceptives and it is preferable to use another method	314	72.7%	118	27.3%
If you have thrombosis tendency, lung or heart disease, it is strictly forbidden to use the combined contraceptive pill or the patch, and it is preferable to use another method?	272	63.0%	160	37.0%
if you suffer from high blood pressure or chronic diabetes, it is forbidden to use the combined contraceptive pill or the patch, and it is preferable to use another method due to the high rate of clots.	300	69.4%	132	30.6%
If you suffer from migraine accompanied by signs of visual disturbance, it is forbidden to use the combined contraceptive pill or the patch, and it is preferable to use another method due to the high rate of stroke	334	77.3%	98	22.7%
If you are more than 35 years old and a smoker, it is forbidden to use the combined contraceptive pill or the patch, and it is preferable to use another method due to the high rate of stroke	342	79.2%	90	20.8%
If you are breastfeeding, it is forbidden to use the combined contraceptive pill or the patch, and it is preferable to use another method because it reduces the amount of milk	114	26.4%	318	73.6%
contraceptive ampoules can cause weight gain, so if you are overweight, it is preferable to use another method?	220	50.9%	212	49.1%
All contraceptives (except for tubal ligation) do not cause sterility?	158	36.6%	274	63.4%
Your non-compliance to take birth control pills at the same time daily leads to disruption of your menstrual cycle and reduces your protection against pregnancy?	66	15.3%	366	84.7%
Contraceptive pills can be used safely for unmarried women "including those who have never been married" for the purpose of regulating the menstrual cycle or treating some types of ovarian cysts?	66	15.3%	366	84.7%

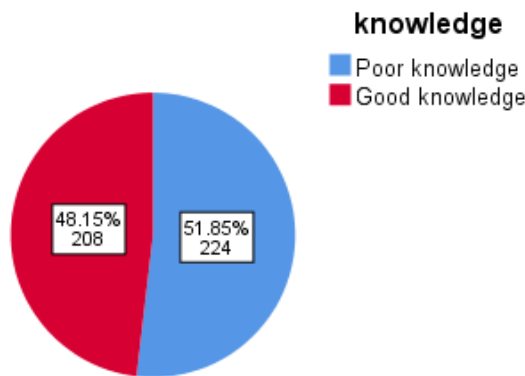


Fig. 1: Knowledge of the studied women in the Kingdom of Saudi Arabia about contraception (n=432)

Table 2: Obstetric and medical history of the studied women in the Kingdom of Saudi Arabia (n=432)

		N	%
Currently pregnant?	Yes	60	13.9%
	No	372	86.1%
Gravidity	Zero	4	0.9%
	One	88	20.4%
	Two to four	260	60.2%
	Five or more	80	18.5%
Abortion	No	238	55.1%
	One or two	160	37.0%
	Three or more	34	7.9%
Normal vaginal delivery	Zero	126	29.2%
	One or two	202	46.8%
	Three or more	104	24.1%
C/S labor	Zero	188	43.5%
	One or two	182	42.1%
	Three or more	62	14.4%
Medical history	HTN	12	2.8%
	DM	22	5.1%
	Cardiac patient	2	0.5%
	Mental or psychic	4	0.9%
	No diseases	360	83.3%
	others	32	7.4%

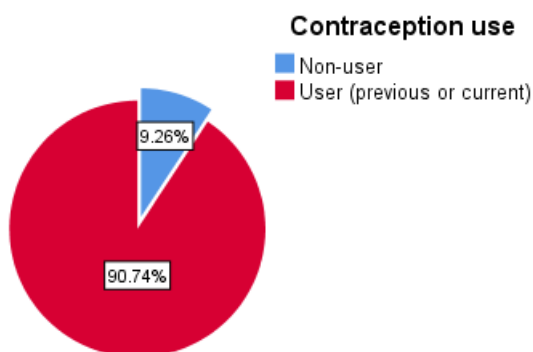


Figure 2: Proportion of contraception use among participants

53% of participants said that their source of information was physicians (Table 4).

Regarding attitude towards contraception use, 77.8% agreed to contraception use while only 3% disagreed. 98.6% agreed that both men and women are responsible for family planning. About 85% of participants said that the most important reasons for refusal of contraception use were the side effects of some methods and the misconception that it can causes infertility or delay in pregnancy after stopping them. The priority of contraceptive method choice according to 94.4% of participants was safety and few side effects while 83% chose effectiveness to prevent pregnancy (Table 5).

**Table 4:** Participants’ responses regarding their source of information.

	N	%
Google	60	13.9
Social media	26	6.0
Physicians	230	53.2
Friends and neighbors	80	18.5
TV and radio	2	.5

Coitus interruption was the commonest method used by about 20%, followed by COC (18%), then condom (12.5%). 39% intended to use the method for less than 2 years. 18% said they got pregnant during using the method with the most used method coitus interruption followed by COC. Only 30% of participants said that the COVID 19 pandemic made them use contraceptive methods. They said that the pandemic presence made them use coitus interruption, COC and condom (17.6%, 12.5% and 11% respectively) (Table 6).

Husband nationality, husband education, gravidity and cesarean section delivery were significantly associated with contraception use (p=0.019, <0.001, 0.022 and 0.010 respectively). Contraception use was lower among participants whose husbands were Saudi than non-Saudi (89.6% vs. 100%, p=0.019). Contraception use was higher among participants whose husbands had higher education than lower education level (94.6% vs.68.8%, P<0.001), gravidity of two to four than one (92.3% vs. 50%. respectively p=0.022).also it was highest among those with previous one to two than those with previous three or more cesarean section (93.4% vs. 80.6% respectively).

Table 5: attitude of the studied women in the Kingdom of Saudi Arabia towards contraception (n=432)

	Disagree		Neutral		Agree	
	N	%	N	%	N	%
What do you think about the use of contraceptives?	14	3.2%	82	19.0%	336	77.8%
Do you agree that both men and women are responsible for family planning?	2	0.5%	4	0.9%	426	98.6%
<i>Reasons for refusal of contraception use</i>						
Husband’s refusal due to customs and traditions?	132	30.6%	108	25.0%	192	44.4%
The high prices of some of those methods?	194	44.9%	134	31.0%	104	24.1%
Religious reasons?	142	32.9%	132	30.6%	158	36.6%
Not knowing the importance of family planning?	52	12.0%	56	13.0%	324	75.0%
The side effects of some methods?	26	6.0%	32	7.4%	374	86.6%
The misconception that they cause a delay in pregnancy after stopping them?	20	4.6%	46	10.6%	366	84.7%
<i>Priority of contraception method choice</i>						
How effective it is in preventing pregnancy?	30	6.9%	42	9.7%	360	83.3%
How safe it is and the few side effects?	8	1.9%	16	3.7%	408	94.4%
You do not feel using the method	30	6.9%	102	23.6%	300	69.4%
Not to be embarrassed while buying it?	226	52.3%	90	20.8%	116	26.9%

**Table 6:** Practice of contraception among the studied women in the Kingdom of Saudi Arabia (n=432)

	N	%
Contraception use		
Non-user	40	9.3%
User (current or previous)	392	90.7%
If you are currently using, what is the current method?		
Condom	54	12.5%
Contraception implant	18	4.2%
Contraceptive injection	2	0.5%
IUD	42	9.7%
Hormonal IUD	18	4.2%
Progestin only pills	30	6.9%
Contraceptive patch	4	0.9%
Emergency pills	2	0.5%
Calendar rhythm method	8	1.9%
Coitus interruption	86	19.9%

		N	%
	COC	78	18.1%
	Not a current user	90	20.8%
How long will you use this method?	Less than 2 years	168	38.9%
	2 years- 5 years	130	30.1%
	More than 5 years	106	24.5%
Have you ever become pregnant while using the method?	I do not remember	6	1.4%
	No	326	75.5%
	Yes	78	18.1%
If your answer to the previous question is yes, what is the method that you used?	Condom	4	0.9%
	IUD	12	2.8%
	Hormonal IUD	2	0.5%
	Progestin only pills	10	2.3%
	Vaginal ring	2	0.5%
	Contraceptive patch, Contraception implant and Fallopian tube ligation	2	0.5%
	Contraceptive patch	2	0.5%
	Calendar rhythm method	6	1.4%
	Coitus interruption	34	7.9%
	COC and IUD	4	0.9%
	COC and Progestin only pills	4	0.9%
	COC	32	7.4%
	No	318	73.6%
If you did not use contraceptives before, does the presence of the Corona pandemic make you use contraceptives?	No	300	69.4%
	Yes	132	30.6%
Does the presence of the Corona pandemic make you use a specific means from the following?	Condom	48	11.1%
	Contraception implant	2	0.5%
	IUD	22	5.1%
	Hormonal IUD	10	2.3%
	Progestin only pills	12	2.8%
	Contraceptive patchatch	10	2.3%
	Emergency pills	2	0.5%
	Calendar rhythm method	4	0.9%
	Coitus interruption	76	17.6%
	COC	54	12.5%
	Not a user	192	44.4%

**Table 7:** Contraception use according to demographic characteristics, obstetric and knowledge of the studied women in the Kingdom of Saudi Arabia (n=432)

N		User (previous or current)		Non-user		
		%	N	%	N	
Nationality	Non-Saudi	154	90.6%	16	9.4%	0.930
	Saudi	238	90.8%	24	9.2%	
Husband nationality	Non-Saudi	48	100.0%	0	0.0%	0.019
	Saudi	344	89.6%	40	10.4%	
Education	Lower education	36	90.0%	4	10.0%	0.865
	Higher education	356	90.8%	36	9.2%	
Husband education	Lower education	44	68.8%	20	31.3%	<0.001
	Higher education	348	94.6%	20	5.4%	
Occupation	Non-medical field	368	90.2%	40	9.8%	0.107
	Medical field	24	100.0%	0	0.0%	
Husband occupation	Non-medical field	364	90.1%	40	9.9%	0.080
	Medical field	28	100.0%	0	0.0%	

N	User (previous or current)		Non-user			
	%	N	%	N		
Smoking	No	346	91.5%	32	8.5%	0.132
	Yes	46	85.2%	8	14.8%	
Residence	Rural	16	100.0%	0	0.0%	0.193
	Urban	376	90.4%	40	9.6%	
Marriage duration	Less than 5 years	82	95.3%	4	4.7%	0.099
	More than 5 years	310	89.6%	36	10.4%	
Gravidity	Zero	2	50.0%	2	50.0%	0.022
	One	80	90.9%	8	9.1%	
	Two to four	240	92.3%	20	7.7%	
Normal vaginal delivery	Five or more	70	87.5%	10	12.5%	0.064
	Zero	110	87.3%	16	12.7%	
	One or two	182	90.1%	20	9.9%	
C/S labor	Three or more	100	96.2%	4	3.8%	0.010
	Zero	172	91.5%	16	8.5%	
	One or two	170	93.4%	12	6.6%	
knowledge	Three or more	50	80.6%	12	19.4%	0.081
	Poor knowledge	198	88.4%	26	11.6%	
	Good knowledge	194	93.3%	14	6.7%	

**Table 8:** Logistic regression of predictors for contraception use

	B	Significance	AOR		95% C.I. for AOR	
			Lower	Upper	Lower	Upper
Husband nationality	-18.901	0.997	0.000	0.000	.	.
Husband higher education	2.307	<0.001	10.048	4.608	21.908	21.908
Gravidity (one vs. zero)	2.906	0.010	18.283	1.997	167.354	167.354
Gravidity (two to four vs. zero)	2.987	0.005	19.829	2.474	158.930	158.930
Gravidity (five or more vs. zero)	2.998	0.009	20.047	2.147	187.162	187.162
C/S labor (one or two vs. zero)	0.486	0.302	1.596	0.657	3.880	3.880
C/S labor (three or more vs. zero)	-1.338	0.010	0.262	0.095	0.723	0.723
Constant	16.593					
Chi-square, p value	58.528, <0.001					
Overall percentage	91.7%					

AOR; adjusted odds ratio

After doing logistic regression for predictors of use, husband nationality became non-significant. Predictors for higher use were husband higher education, gravidity of two to four and having previous one to two cesarean section (AOR=10.048, 18.283, 19.829, 20.047 respectively) (Table 8).

## DISCUSSION

This is a comparative cross-sectional descriptive study which aimed to assess the knowledge, attitude and practice regarding the use of contraceptives among women in the Arab Kingdom of Saudi during covid 19 pandemic.

In summary, Overall knowledge was good among half of participants. More than three fourth of participants agreed to contraception use. The most important reasons for refusal of contraception use were the side effects of some methods. 90.7% used contraceptive methods either currently or previously. Predictors for higher use were husband higher education and gravidity of more than two.

After doing logistic regression for predictors of use, husband nationality became non-significant. Predictors for higher use were husband higher education, gravidity of two to four and having previous one to two cesarean section (AOR=10.048, 18.283, 19.829, 20.047 respectively) (table 8). The following studies showed increasing prevalence of contraceptive use due to changing of socio demographic factors, increasing prevalence of higher education and joining work space among women in Kingdom of Saudi Arabia which changed their attitudes toward the use of contraception methods leading to increase their use<sup>17</sup>. Other studies showed the proportion varying between 27% and 74.9%<sup>7,9</sup>. A study by Alsaleem *et al.*<sup>17</sup> in Abha south western Saudi Arabia November 2018 showed high prevalence (58.8%) of contraceptive use among study population. A study by Abdel-salam *et al.*<sup>18</sup> in Aljouf region Saudi Arabia during May 2020 showed high prevalence (45%) of contraceptive use among study population<sup>18</sup>. As this prevalence is lower than the 2018 prevalence (58.8% according to Alsaleem *et al.*<sup>17</sup>, we think this is due to the covid 19 pandemic as most health

care resources were directed now towards the fight against this fatal covid 19 pandemic.

In this current study, the proportion of contraceptive use either currently or previously was 90.7%. This is a very high proportion as compared to previous studies. This can be explained by that the pandemic made women fear from catching infection during pregnancy which has a moderate risk to develop a bad prognosis due to low immunity.<sup>19</sup>

In the current study, husband education, gravidity and cesarean section were significantly considered as predictors for contraception use. Similarly, a previous study found that contraceptive methods use significantly increased among working women, women with higher education, women with large number of children and women older than 30 years<sup>8</sup>. Women with higher gravidity are expected to use contraceptive methods for fear of getting pregnancy resulting in having more children with higher burden on the family either physically or financially. Women with 3 or more cesarean section were unexpectedly associated with lower contraceptive use in the current study. This may be explained by false beliefs of women that cesarean section is much easier and less painful than normal vaginal delivery. This should be considered in the future contraceptive education campaigns to make women knowledgeable about the serious complication of cesarean section especially with repeated cesarean such as placenta previa and placenta accreta which can lead to hysterectomy. A study by Free et al.<sup>20</sup> showed that contraception use was influenced by social goals, perceptions of vulnerability and constraints or facilitators. Women described their use as being changing over time with the situation or experiences changes or adding new information. According to that we think that educational status and covid 19 pandemic highly affected the prevalence of contraception use. However, only 30% of participants said that the corona pandemic made them use contraceptive methods. This must be taken into consideration to educate women about the importance of contraception especially during the pandemic as some evidence state that pregnant women are at risk of bad prognosis of COVID 19<sup>21</sup>.

Coitus interruption was the commonest method used by about fifth of participants. In addition, participants who got pregnant during using a contraceptive method mostly used coitus interruption. This is not weird as coitus interruption is known to be the method with the highest failure rate.

## LIMITATIONS OF THE STUDY

The descriptive cross-sectional nature of the study is one of the limitations. The survey was made online due to the COVID 19 preventive measures, however this made most participants to be of higher socio-economic class and living in urban regions which may affected the results.

## CONCLUSION

Participants had good contraceptive knowledge. Most participants had positive attitude towards contraception use. Proportion of contraceptive methods use was high among participants. Predictors for higher use were husband higher education and higher gravidity than zero. We recommend more health education campaigns about the importance of

contraception especially during the COVID 19 pandemic and among women who had high order previous cesarean section. We also recommend more research involving a representative sample from all regions of the kingdom.

**Conflict of Interest:** None

**Fund:** Self

## Ethical Approval

Ethical approval was obtained from National Committee of Bio Ethics (No. HAPO-02-K-012-2020-06-402). Confidentiality was respected and data were not used for any other purpose.

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