

## ORIGINAL ARTICLE

# Family Planning Practice During and Post Covid-19 Pandemic Crisis Among Married Couples in Johor, Malaysia

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## ABSTRACT

**Introduction:** UNFPA research indicates that the COVID-19 crisis may lead to over 47 million women experiencing a loss of access to contraception, which might result in over 7 million unplanned pregnancies. In Malaysia, the pandemic disrupted healthcare services, including access to family planning (FP) resources, exacerbating existing challenges in reproductive health. The objective of the study was to ascertain the prevalence rate, pattern of family planning (FP) practice during and after the COVID-19 pandemic crisis, and identify the factors related with FP activity during COVID-19 among married couples in Johor, Malaysia. **Methods:** The validated self-administered questionnaire was distributed using the online method between January and May 2022. An analysis of descriptive statistics was conducted to ascertain the prevalence and pattern of family planning practice. Logistic regression was used to analyse factors associated with FP practice. **Results:** There were 240 married couples involved in this study using convenience sampling. The respondents' mean age was 34 years old (SD = 7.8). The incidence of FP practice increased after the COVID-19 pandemic (42.9%) compared to during the pandemic (32.9%). Oral contraceptive pill (OCP) methods were commonly used during the pandemic and the pattern changed to injection and male condoms post-pandemic. There was a significant association between FP practice during the COVID-19 pandemic and employment status, partners' educational level, and partners' financial crisis ( $p < 0.05$ ). **Conclusion:** This study suggests that there is a requirement for health education and increased knowledge of FP practices during crises that could potentially affect the health of mothers and newborns.

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## INTRODUCTION

Family planning (FP), as defined by the World Health Organization (WHO), refers to the ability of persons and couples to anticipate and attain their preferred number of children, while also managing the intervals and time of their births. This entails using contraception and treating involuntary infertility. Family planning fulfills crucial needs, aiding couples in avoiding unintended births and curbing the transmission of sexually transmitted diseases (STDs) (1).

Research from the United Nations Population Fund (UNFPA) indicates that the COVID-19 crisis may lead to over 47 million women losing access to contraception, resulting in 7 million unintended pregnancies. This situation could also contribute to a significant rise in unsafe abortions, leading to thousands of fatalities (2). Unintended pregnancies have severe repercussions on maternal and neonatal health, contributing to increased morbidity and mortality rates (3).

Aly et al (2020) performed a modelling study that predicts a 10% decrease in the usage of both short- and long-acting reversible contraceptive methods as a result of lower accessibility. This decrease might possibly result in an additional 59 million women being unable to access contraception. Furthermore, this decline might result in an extra 15 million unintended pregnancies within one year in developing countries (4,5).

According to the World Health Organization (WHO), 90% of 105 nations have reported disruptions in health services due to the pandemic, affecting family planning (FP) services in various countries, including Malaysia. Prior to the pandemic, Johor had made significant strides in improving access to family planning services, with relatively high contraceptive prevalence rates compared to other Malaysian states. However, Johor's unique socio-economic landscape, characterized by a mix of urban and rural populations, presents distinct challenges in FP practices. The state has a strong cultural emphasis on family and traditional values, which can influence reproductive decisions. Additionally, economic factors, such as varying levels of income and education, particularly in rural areas, have impacted access to and the use of FP services (6).

The COVID-19 pandemic triggered a disruption in these services, exacerbating existing inequalities. In response to COVID-19, the Malaysian Government implemented a Movement Control Order (MCO), leading to the closure of both public and private industries and the cessation of most economic activities, except for essential public services. This disruption was particularly pronounced in Johor, where the mix of urban and rural populations meant that access to healthcare varied widely across the state.

It is anticipated that the pandemic will have a significant impact on women's sexual and reproductive health, especially in low- and middle-income countries (7). Pregnant women, who are characterised by reduced immunity, are at a heightened susceptibility to contracting COVID-19, and this risk is further intensified if they choose not to receive the vaccine. Those who become pregnant during the pandemic have a higher likelihood of experiencing significant complications. However, strained hospital services may impede their access to the necessary care required to address these complications (5).

Ferreira-Filho et al. (2020) found in their research that couples may be inclined to extend the duration of their sexual activity when experiencing physical separation, isolation, or working from home (8). According to data from the Malaysia Population Research Hub, 43.1% of married women had unintended pregnancies during the COVID-19 pandemic crisis (9). Johor was chosen as the focus for this study due to these specific challenges. The state's diverse demographic and socio-economic conditions make it a microcosm of the broader issues faced across Malaysia, allowing for a more detailed understanding of how the pandemic has impacted FP practices. Additionally, Johor's proximity to Singapore, where many people in Johor work, adds another layer of complexity to family planning decisions, especially during a period of travel restrictions and economic uncertainty (10).

This study aimed to evaluate the frequency of family planning (FP) practices during and after the COVID-19 pandemic, examine FP trends, and determine the factors that impact FP practices among married couples in Johor, Malaysia, during the COVID-19 pandemic. Understanding these factors in the context of Johor's specific cultural and socio-economic landscape is crucial for developing targeted interventions to improve reproductive health outcomes in the region.

## METHODOLOGY

This study was a cross-sectional investigation that utilised a questionnaire administered using a web-based survey. The research was conducted among married couples residing in Johor, Malaysia, regardless of what district they are living in. Women or men aged 18 years and above, able to understand English or Malay were included. The exclusion criteria were women who are menopause. The estimated population of Johor is 3.48 million, with a mean age of 30 years (10). The necessary sample size was 475, determined using a single proportion calculation derived from a study carried out by Roy et al. (2021). Meanwhile, the prevalence of family planning during the COVID-19 pandemic was 32.86% (11). The convenience sampling method was used to enable the researcher to recruit the respondents easily online, which was the best way to get the samples from all over Johor.

The data were collected from married couples with self-administered questionnaires that were adapted from the COVID-FP survey questions developed by FHI 360 in 2020. FHI 360 is a USAID-funded R4S Project that intends to comprehensively assess the impact of the pandemic and recovery process on access and use of family planning services (12). The questionnaires were translated into the Bahasa Malaysia version using the forward-backward translation method and were validated by experts in this field. The questionnaire is partitioned into three sections. Section A consists of 13 socio-demographic-related questions. In Section B, the questions consist of four socio-economic-related questions either the respondents and their partner had financial crisis during COVID-19. Section C consists of 26 questions on detailed information about FP practice, patterns during and after the COVID-19 pandemic, and the reasons for not using FP. Most of the questions were close ended (yes/no) type of questions and some open-ended that require respondent to answer based on the question given. There is no scoring applied for this questionnaire because this study is only about determining the prevalence rate of FP practice, the types of methods and selected factors that associated with the FP practice. All the results will be presented in percentages. A pilot test of questionnaire with 10% of the sample size among women and men who did not participate in the main study was performed.

The study received ethical approval from the Human Research Ethics Committee (HREC) of Universiti Sains Malaysia (USM/JEPeM/21120796). The questionnaire was formatted into a Google Form and the link was distributed on variety of channel including email, website embedding, and social media platform available such as WhatsApp, Instagram, Telegram, Twitter or Facebook. During the Google Form session, the participants were provided with a clear explanation of the study's objective, and their agreement was sought prior to their completion of the online questionnaire. Participants also can choose either they want to answer the questionnaires in English version or Malay version. Data were analysed using Statistical Package for Social Science (SPSS) version 26.0. Descriptive analysis was used to analyse the socio-demographic, and socio-economic data, and FP practice. The study employed multiple logistic regression analysis to investigate the factors that influenced FP practice during the COVID-19 pandemic. A p-value of < 0.05 was considered statistically significant.

## RESULTS

A total of 240 married couples participated in the study (51% response rate). The mean age of the respondents was  $34.3 \pm 7.8$  years, ranging from 18 years to 49 years old. Most of the respondents were females (81.7%), Malays (98.8%), and Muslims (98.8%). Other characteristics of demographics are presented in Table I. Regarding the financial crisis, both respondents (30.4%) and their partner (25.8%) reported experiencing financial difficulties as a result of the COVID-19 pandemic. For the respondent to have financial crisis, the highest reason is that they could not go to work because they had to take care of children (6.7% for the respondent and 6.3% for the partner) (Table II).

The results showed that 79 (32.9%) of the married couples in Johor practiced FP during COVID-19, and it's increased to 103 (42.9%) of them practiced FP post-COVID-19. In terms of pattern, among the 79 respondents that practiced FP during COVID-19, the highest method used was OCP (9.6%). Meanwhile, for respondents that practiced FP post-COVID-19, the injection (9.6%) and male condom (9.6%) had the highest FP pattern among them (Table III).

Factors that were examined in this study are sociodemographic (age, gender, ethnicity, religion, educational level, partner's educational status), number of children, duration of marriage, socioeconomic status (employment status and partner's employment status), locality, and financial crisis (household, respondent only or partner only). Based on multiple logistic regression analysis, there was a significant association between FP practice during COVID-19 and employment status, partner's educational level, partner's financial crisis, and household financial crisis ( $p < 0.05$ ) (Table IV).

**Table I: Socio-demographic data of respondents (n=240)**

Variables	Mean (SD)	n (%)
<b>Age</b>	34.30 (7.759)	
<b>Gender</b>		
Male		44 (18.3)
Female		196 (81.7)
<b>Ethnicity</b>		
Malay		237 (98.8)
Chinese		2 (0.8)
Others		1 (0.4)
<b>Religion</b>		
Islam		237 (98.8)
Buddhist		2 (0.8)
Christian		1 (0.4)
<b>Current employment status</b>		
Employed		163 (67.9)
Unemployed (include housewife)		63 (26.3)
Self – Employed		14 (5.8)
<b>Educational level</b>		
No formal education		1 (0.4)
Primary education		1 (0.4)
Secondary education		45 (18.8)
Diploma /STPM / Matriculation		78 (32.5)
Degree / Postgraduate (Master / PhD)		115 (47.9)
<b>Partner's employment status</b>		
Employed		184 (76.7)
Unemployed (include housewife)		25 (10.4)
Self – Employed		27 (11.3)
Retired		4 (1.7)
<b>Partner's educational level</b>		
No formal education		5 (2.1)
Primary education		-
Secondary education		70 (29.2)
Diploma /STPM / Matriculation		95 (39.6)
Degree / Postgraduate (Master / PhD)		70 (29.2)
<b>Socioeconomic status</b>		
B40 (less than RM2500 – RM4849)		131 (54.6)
M40 (RM4850 – RM10,959)		87 (36.3)
T20 (RM10,961 – RM15,040 and above)		22 (9.2)
<b>Number of children</b>	2.24 (1.756)	
<b>Locality</b>		
Rural		78 (32.5)
Urban		162 (67.5)
<b>Duration of marriage</b>		
Below 10 years		139 (57.9)
10 years to 20 years		81 (33.8)
Above 20 years		20 (8.3)

## DISCUSSION

### Prevalence rate of FP practice during and after the COVID-19 pandemic

This study showed that there were changes in FP practice during and after the COVID-19 crisis, although they were low during COVID-19 as compared to post-COVID-19. The obtained value was marginally lower in comparison to the national CPR obtained from the Malaysian Family and Population Survey, 2014, which was 52.2% (13). The FP practice was low due to the fact that they did not want any more children (36.7%), they had completed their desired family size, and they wanted to have a gap between births. In a previous study by Roy et al. (11), they stated that the desire family size and the gap between

**Table II: Socio-economic data of respondents (n=240)**

Variables	Frequency (n)	Percentage (%)
<b>Did you had financial crisis due to the COVID-19 pandemic?</b>		
Yes	73	30.4
No	167	69.6
<b>Which of the following describe your financial crisis?</b>		
My workplace is closed	13	5.4
I got laid off because of decreased business	7	2.9
I had to change work	9	3.8
I cannot go to work because I have to take care of children	16	6.7
Not related	188	78.3
Others	7	2.9
<b>Did your partner had financial crisis due to the COVID-19 pandemic?</b>		
Yes	62	25.8
No	178	74.2
<b>Which of the following describe your partner's financial crisis?</b>		
My partner's workplace is closed	13	5.4
My partner got laid off because of decreased business	7	2.9
My partner had to change work	11	4.6
My partner cannot go to work because have to take care of children	15	6.3
Not related	180	75
Others	14	5.8

**Table III: The distribution of FP practice pattern during and post COVID-19 pandemic crisis among married couples in Johor, Malaysia.**

FP practice pattern	Frequency, n (%)	
	During pandemic	Post pandemic
Female sterilization / tubal ligation	6 (2.5)	6 (2.5)
Male sterilization / vasectomy	-	1 (0.4)
Implant	9 (3.8)	11 (4.6)
Intrauterine Device (IUD)	16 (6.7)	22 (9.2)
Injection	17 (7.1)	23 (9.6)
Oral contraceptive pill (OCP)	23 (9.6)	20 (8.3)
Male condom	13 (5.4)	23 (9.6)
Rhythm method (safe period)	5 (2.1)	2 (0.8)
Withdrawal	2 (0.8)	2 (0.8)
Others	3 (1.3)	-

**Table IV: Factor influence FP practice during COVID-19 pandemic crisis among married couples in Johor, Malaysia.**

Variables	Odd Ratio (95% CI)	Adjusted Odd Ratio (95% CI)	b	p value
<b>Employment status</b>	2.38	2.29 (1.22, 4.29)	0.828	0.01
No (0), Yes (1)	(1.31,4.30)			
<b>Partners educational level</b>	2.41	2.17	0.773	0.011
Low (0), High (1)	(1.36,4.26)	(1.19,3.94)		
<b>Partner financial crisis</b>	3.00	3.10	1.128	<0.001
Yes (0), No (1)	(1.63,5.41)	(1.66,5.76)		
<b>Household financial crisis</b>	2.31			
Yes (0), No (1)	(1.33,4.01)			

Forward multiple logistic regression model was applied with practice FP (0) as reference, multicollinearity and interaction terms were checked and none were found; Hosmer-Lemeshow test (p = 0.015), classification table (overall correctly classified percentage 71.7%), and the area under the ROC curve (67.7%)

births had a significant impact on the FP practice. This decline in FP practice during the pandemic is consistent with global trends. A study by Aly et al. (5) predicted a 10% decrease in contraceptive use due to limited accessibility during the pandemic, potentially resulting in millions of unintended pregnancies. The lower rate during the pandemic in Johor aligns with findings from other regions where social restrictions, fear of infection, and healthcare disruptions significantly impacted FP services.

Moreover, the FP practice during COVID-19 was significantly lower than post-COVID-19 because they experienced problems in getting the FP services that they wanted during COVID-19 (5.4%) due to social restrictions ordered by the government (8.3%), and they did not know where to get the services (4.6%). These challenges in accessing FP services during COVID-19 pandemic are reflective of the broader disruptions in healthcare services globally, as reported by the World Health Organization (WHO), which found that over 90% of countries experienced disruptions in health services, including FP. This difficulty emphasizes the need for resilient healthcare systems that can maintain essential services even during crises. It also underscores the importance of public health messaging and awareness campaigns to ensure that populations are informed about how to access essential services during emergencies.

**Patterns of FP Practice: Transition from COVID-19 to Post-COVID-19**

There were differences in the FP pattern during and after COVID-19. Most respondents used OCP (9.6%) during COVID-19. In a study by Shree et al. (14), OCP's popularity might be due to its easy, cost-free availability, as well as being most promoted by medical professionals and the media. The study corresponds with the reason for choosing the FP pattern in the current study, in which 21 (8.8%) of the respondents stated that the method available for was low cost/free.

However, post-COVID-19, the majority of them chose injection (9.6%) and male condom (9.6%) as their choice of FP pattern. The reasons behind the changes are due to the accessibility of services from which they obtained their FP methods; they do not need to see a provider and have fewer side effects than other methods that they have used before. It also reflects changes in service accessibility and a preference for methods that require less frequent healthcare visits (15). Injections and condoms do not necessitate continuous interaction with healthcare providers, which could have been a significant factor during the pandemic when access to healthcare was restricted. Additionally, the shift could indicate a preference for methods perceived as having fewer side effects or being more convenient for long-term use (16).

## Factors Associated with FP Practice During the COVID-19 Pandemic

There was countable research done to determine the association between educational level and FP practice. The present study demonstrated a notable correlation between FP practice and the educational level of a partner, but no such correlation was found with regards to a woman's educational level. Employment status is more significantly important compared to educational level, as found in this study. Based on the study conducted by Roy et al. (11), they stated that there was no significant association between these two determinants. Conversely, there is a conflict with the study conducted by Geda & Gizaw (17). They stated that FP practice was found to be significantly associated with women's educational level. Educated women had a higher likelihood of practicing FP than women without any education (OR = 1.903). In the previous study by Shree et al. (14), a strong association between contraceptive use and women's educational levels, as well as their husbands' educational levels was discovered. It demonstrated that women's decisions about FP practice were influenced by their husbands' educational level. The conflict that occurred in this study might be due to the situation of the pandemic crisis, where decisions might have been more influenced by the partner's education due to the socio-economic pressures faced by households.

Partner financial crises and household financial crises had a significant association with the FP practice during COVID-19. The financial crisis might be due to their work place being closed during the pandemic. This reason was consistent with the type of job sector that they worked in. According to the study done by Roy et al. (11), women from households where the household heads were employed in the private sector or engaged in business were more likely to practice FP compared to women whose household heads worked in other sectors.

A significant portion of respondents in this study (30.4%) and their partners (25.8%) reported experiencing financial difficulties despite the global economic impact of the COVID-19 pandemic. This finding aligns with the broader economic challenges that were observed globally, where many individuals and households faced unprecedented financial stress due to the disruptions caused by the pandemic. Certain demographic groups were more vulnerable to the economic impacts of the pandemic. Low-income households, single-income families, and individuals working in precarious or informal jobs were disproportionately affected. In Johor, where there is a mix of urban and rural populations, those in rural areas may have faced additional challenges, such as limited access to alternative employment opportunities and less access to government aid programs. These groups were more likely to experience significant financial difficulties during the pandemic.

The discussion highlights the significant impact of the COVID-19 pandemic on FP practices in Johor, Malaysia, demonstrating a lower prevalence of FP during the pandemic, a shift in contraceptive methods used, and the influence of socio-economic factors on FP practices. This study contributes to the understanding of how crises like the COVID-19 pandemic can disrupt FP services and offers insights for improving FP service delivery during future public health emergencies.

## CONCLUSION

The study found that the occurrence of family planning (FP) practice during and after the COVID-19 pandemic remained relatively low when compared to the national contraceptive prevalence rate (CPR). There were modifications in the techniques employed both during and after the COVID-19 pandemic. Factors such as employment status, partner's educational level, partner's financial crisis, and household financial crisis had a significant association with the FP practice during COVID-19. The strength of this study was focused on both parties of the married couple and economic factors as one of the factors contributing to the practice. However, some limitations of this study are that the ratio of women to men was not balanced, as well as that of other races in Malaysia. However, according to this study, there is a need for a public education campaign to improve awareness regarding the importance of FP practice and its benefits, especially during pandemic crisis situations.

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## REFERENCES

1. United Nations Department of Economic and Social Affairs, Population Division (2022). World Family Planning 2022: Meeting the changing needs for family planning: Contraceptive use by age and method. UN DESA/POP/2022/TR/NO. 4 Available from <https://desapublications.un.org/publications/world-family-planning-2022-meeting-changing-needs-family-planning-contraceptive-use>
2. Mickler AK, Carrasco MA, Raney L, Sharma V, May AV, Greaney J. Applications of the High Impact Practices in Family Planning during COVID-19. *Sex Reprod Health Matters*, 2021; 29(1). doi:10.1080/26410397.2021.1881210
3. Sharma, KA, Zangmo, R, Kumari, A, Roy, KK, Bharti, J. Family planning and abortion services in COVID 19 pandemic. *Taiwan J Obstet Gynecol*. 2020;59(6): 808–811. doi:10.1016/j.tjog.2020.09.005
4. Vora KS, Saiyed S, Natesan S. Impact of COVID-19 on family planning services in India. *Sex Reprod Health Matters*. 2020;28 (1):57–59. doi:10.1080/264

- 10397.2020.1785378
5. Aly J, Haeger KO, Christy AY, Johnson AM. Contraception access during the COVID-19 pandemic. *Contracept Reprod Med.* 2020;5:17. doi:10.1186/s40834-020-00114-9
  6. Johor Family Planning Association (n.d) Available from <https://www.hati.my/johor-family-planning-association/>
  7. Wood S, Karp C, OlaOlorun F, Pierre AZ, Guiella G, Gichangi P, Zimmerman LA, Anglewicz P, Larson E, Moreau C. Need for and use of contraception by women before and during COVID-19 in four sub-Saharan African geographies: results from population-based national or regional cohort surveys. *Lancet Glob Health.* 2021;9(6):e793-e801. doi:10.1016/S2214-109X(21)00105-4
  8. Ferreira-Filho ES, de Melo NR, Sorpreso ICE, Bahamondes L, Simxes RDS, Soares-Junior JM, Baracat EC. Contraception and reproductive planning during the COVID-19 pandemic. *Expert Rev Clin Pharmacol.* 2020; 13(6), 615–622. doi:10.1080/17512433.2020.1782738
  9. Penemuan Tinjauan Pendapat: Amalan Perancangan Keluarga Sepanjang Tempoh Pelan Pemulihan Negara (PPN) – Malaysia Population Research Hub. (2021, October 4). LPPKN. <https://mprh.lppkn.gov.my/2021/10/04/penemuan-tinjauan-pendapat-amalan-perancangan-keluarga-sepanjang-tempoh-pelan-pemulihan-negara-ppn/>
  10. Johor, Malaysia — perangkaan 2022 Available from <https://bpen.johor.gov.my/wp-content/uploads/2024/05/DATA-ASAS-2022-FINAL.pdf>
  11. Roy N, Amin MB, Maliha MJ, Sarker B, Aktarujjaman M, Hossain E, Talukdar G. Prevalence and factors associated with family planning during COVID-19 pandemic in Bangladesh: A cross-sectional study. *PLoS One.* 2021;16(9):e0257634. doi:10.1371/journal.pone.0257634
  12. FHI 360. Documenting the Effects of COVID-19 on Family Planning Access and Use with Standardized Questions | FHI 360 2020 Available from: <https://www.fhi360.org/wp-content/uploads/drupal/documents/r4s-covid-19-family-planning.pdf>
  13. Contraceptive prevalence, any method (% of married women ages 15-49) - Malaysia | Data [Internet]. World Bank Group. 2022 Available from <https://data.worldbank.org/>
  14. Shree V, Prasad RR, Kumar S, Sinha S, & Choudhary SK. Factors for non-acceptance of contraceptive methods amongst married women of reproductive age group in rural Patna. *Int J Community Med Public Health.* 2017;4(6), 1882–1887. Available from: <https://www.ijcmph.com/index.php/ijcmph/article/view/1379>
  15. Haakenstad A, Angelino O, Irvine CMS, Bhutta ZA, Bienhoff K, Bintz C, Causey K, Dirac MA, Fullman N, Gakidou E, Glucksman T, Hay SI, Henry NJ, Martopullo I, Mokdad AH, Mumford JE, Lim SS, Murray CJL, Lozano R. Measuring contraceptive method mix, prevalence, and demand satisfied by age and marital status in 204 countries and territories, 1970–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet.* 2022; 400: 295–327. doi:10.1016/S0140-6736(22)00936-9
  16. Speidel JJ, Harper CC, Shileds WC. The potential of long-acting reversible contraception to decrease unintended pregnancy. *Contraception.* 2008; 78 (3), 197 – 200. doi:10.1016/j.contraception.2008.06.001
  17. Geda NR, Gizaw A. Family planning service utilization in Mojo town, Ethiopia: A population based study. *J Geogr Reg Plann.* 2011; 4(6), 355–363. Available from: <https://academicjournals.org/journal/JGRP/cited-by-article/FA7652B40847>