

Original Article

Frequency and Trend of Contraception Services during the COVID 19 Pandemic; A Two-Year Retrospective Analysis at A Tertiary Care Hospital

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Abstract

Objectives: To examine the effect of the pandemic on postpartum contraceptive utilization among women who attended antenatal clinics at a tertiary care public hospital in Pakistan. The secondary aims of the study were to evaluate different types of postpartum contraceptive services utilized and determine factors affecting utilization of contraceptive services.

Methodology: This retrospective study was conducted at the Department of Gynecology and Obstetrics, Federal Government Polyclinic Hospital, Islamabad. The study participants were pregnant women who delivered in the hospital or its attached maternal and child health dispensary from January 2019 to December 2021. They were divided into two groups: pre-pandemic and pandemic. The pre-pandemic group included deliveries in 2019, while the pandemic group included deliveries from April 2020 to December 2021. The primary outcome variable was adoption of contraceptive method, whether immediately or up to 3 months postpartum. Pre-pandemic and Pandemic groups were compared for the utilization of postpartum contraception. Differences in types of contraceptive method used and factors associated with contraceptive use were also examined.

Results: A total of 5797 patients were included in the study, with 2837 in the pre-pandemic group and 2960 in the pandemic group. The contraceptive uptake rate was 38.2% in the antenatal patients adopting the contraceptive in the immediate or interval postpartum period in the pre pandemic period. The rate declined to 26.9% during the pandemic period. Intrauterine contraceptive device (IUCD) was the most prevalent method of contraception among both groups. However, women in the pandemic group were significantly more likely to have immediate postpartum insertion than those of the pre-pandemic group. The use of oral contraceptive pill was significantly reduced.

Conclusion: The contraceptive uptake rate in postpartum patients declined in the COVID pandemic period. But following the first COVID peak wave and partial lockdown period, the immediate IUCD was most prevalent method adopted by the patients, followed by the injectable progesterone method.

Keywords: Contraceptive methods, Covid-19, Reproductive health, Family planning.

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Introduction

The novel coronavirus was discovered in Wuhan, China, in December 2019 and later declared a global epidemic by the WHO on March 11, 2020.¹ The virus globally has affected 227 countries and reached Pakistan in the end of March, 2020. Therefore, the main aim of the local health bodies during the peak surge was to prevent the spread of the viral infection and manage the emergencies effectively. Hence, this public health

emergency has adversely affected the basic services provision by the health care system, including the antenatal and newborn child health care services, sexual health, contraceptive services and gynecological services.²

Sexual and reproductive health services are the basic fundamental right of every woman, with various effects ranging from reduction of maternal morbidity and

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mortality to improving lifestyle of woman and her family.³ On the other hand, population growth control and financial security can be seen on the national level. The disruption of family planning services due to infectious outbreaks was seen previously as well. The Ebola virus outbreak in 2014 led to a decline in the contraception services in some of the African countries like Sierra Leone and Liberia in a range of 23% to 65%.^{3, 4} During first wave of COVID epidemic, a research was conducted in low and middle income countries by United Nations Population Fund (UNFPA) and they estimated an increase in 7 million of unintended pregnancies and 47 million of females have unmet need of contraception by April 2020. There was a 15 million increase in the proportion of unintended pregnancies by the end of the first year of the COVID outbreak, raising the rate of unsafe abortions to 222,843.^{6,7} This was attributed to a 10% decline in modern family planning methods and, hence, adverse consequences are expected with a further decline in the contraceptive uptake rate.⁷ Modern contraceptive methods include all types of fertility control measures such as condoms, oral pills, injectable and intrauterine devices.

Pakistan is a developing country in South Asia with a rapidly growing population at a rate of 2.4%.⁷ The contraceptive prevalence rate is approximately 53% in South Asia but unfortunately, that was being much lowered in Pakistan and was about 34% in 2018.⁸ Various government and non-governmental organizations (NGO) are working in Pakistan to fulfill the unmet needs of contraception. On a national scale, family planning services are provided by LHWs (lady health workers) in rural areas, primary and secondary health care facilities (including BHUs, RHCs, and THQs), and tertiary care hospitals.⁹ Apart from this international-based NGO, Marie Stopes Society (MSS) working in the rural and urban areas of the developing countries like Pakistan, Nepal and India also provided family planning services.^{3,7} Due to the COVID-19 outbreak, their services were discontinued, leading to population surge in these developing countries. Along with this there was decreased uptake by the patients as well due to fear of visiting the health care centers, non availability of services at the nearby facility center, and decreased visits of the LHWs. There was a shifting of all the resources at the national level in the form of medical personals, financial aid, medical supplies, and mental health support towards this gruesome infectious disease. These were also supplemented by the lockdown and travel restrictions. Thus, both government

and local health bodies' policies led to the hindrance in the provision of basic health services and this imbalance was found by WHO by June 2020.⁴ They then devised guidelines regarding the coverage of immunization, mother child health services, contraception care, antenatal and postnatal services and advised to provide continuity of care regarding these services.^{4,10}

The rationale behind the study was to analyze the most commonly adopted method during the pandemic and to identify the population subgroup that should be targeted. This will also help in training of the staff to provide counseling services to the antenatal and postnatal patients. At the national levels, targeted programs for the outreach areas will be organized. Counseling about the contraceptive services was therefore provided in combination with the antenatal and mother and child services to reduce population growth. But this led to a change in the timing as well as the choice of preferable methods by patients. The objective of the study was to examine the effect of pandemic on postpartum contraceptive utilization among women who attended antenatal clinics at a tertiary care public hospital in Pakistan. Secondary aims of the study were to evaluate different types of postpartum contraceptive services utilized and determine factors affecting utilization of contraceptive services.

Methodology

This was a retrospective study of the family planning services provided to the pregnant females delivered in the department of Obstetrics and Gynecology and the associated maternal and child health (MCH) dispensary of Federal Government Polyclinic Hospital, Islamabad. The study period was January 2019 to December 2021. The participants were categorized into two groups; pre-pandemic group included those who delivered during 2019, whereas, the pandemic group included those delivered in the pandemic period from April 2020 to December 2021. Data were obtained by retrospective medical registers review of the study participants. The study was approved by the institutional ethical committee of the Federal Government Polyclinic Hospital, Islamabad.

The study participants were pregnant females with ages ranging from 18 to 40 years, booked in the hospital for at least 4 antenatal visits. The patients were counseled about the need for healthy timing and spacing of pregnancy and available contraceptive methods as per hospital protocol during their outpatient department visits during the antenatal period. They were assessed

according to UK medical eligibility criteria. They were given the option of either a long-term or short-term need for contraception. The services available to the patients are comprised of barrier methods, oral pills, injectable progesterone, subdermal implant (jeddale), IUCD post placental and interval IUCD. Tubal ligation is offered in intrapartum, postpartum period as well as after some interval. The written informed consent was obtained during the antenatal period. At the time of delivery, the patients were again evaluated to rule out contraindications. Those women who lost the follow-up had incomplete information, gave birth in other hospitals, or requested contraception services from the population control and family planning department were excluded.

The primary outcome variable was adoption of contraceptive method whether immediately or up to 3 months postpartum. All the patients, including those who refused for immediate post-partum contraceptive method were followed up at 6 weeks and 3 months post deliveries. Pre-pandemic and Pandemic groups were compared for the utilization of postpartum contraception and contraceptive uptake rate. Differences in types of contraceptive method used and factors associated with contraceptive use were also examined. The data was noted on the designated proforma, which included age, parity, education, socioeconomic status, and mode of delivery. The second part included the type of contraception and follow-up details.

Data were entered and analyzed using Statistical Package for Social Sciences (SPSS) 23. Chi-square test was applied to compare the groups to evaluate the contraceptive uptake. For continuous variables like age,

mean was calculated. A p-value of less than 0.05 was considered statistically significant.

Results

Total number of patients who adopted contraceptive method included in the study were 5797, out of which 2837 (48.9%) were before the pandemic while 2960 (51.1%) were presented in the hospital during the Covid-19 pandemic. The contraceptive uptake rate was 38.2% before the pandemic and rate declined to 26.9% during the pandemic.

The mean age of the participants was 31.8 ± 4.0 years. Of all the patients, 403 (7%) were uneducated, 2462 (42.5%) had primary education, 2529 (43.6%) had matriculate or intermediate while 403 (7%) were graduates or had higher education. The socio-economic status of the patients showed that 2885 (49.8%) belonged to lower class, 2880 (49.7%) belonged to middle class, while 32 (0.6%) belonged to upper class.

Out of 5797 patients, 3660 (63.1%) had spontaneous vaginal deliveries while 2137 (36.9%) had lower segment caesarean section. 2662 (45.9%) patients had immediate contraception while 3135 (54.1%) preferred interval contraception. A comparison of type of contraception used before and during the covid-19 pandemic is shown in figure 1.

With regards to socioeconomic status, most of the patients from lower socioeconomic status underwent interval contraception (1864/2885, 64.6% versus 1021/2885, 35.4%). From the middle class, 1614/2880 (56%) underwent immediate contraception while 1266/2880 (44%) underwent interval contraception. In

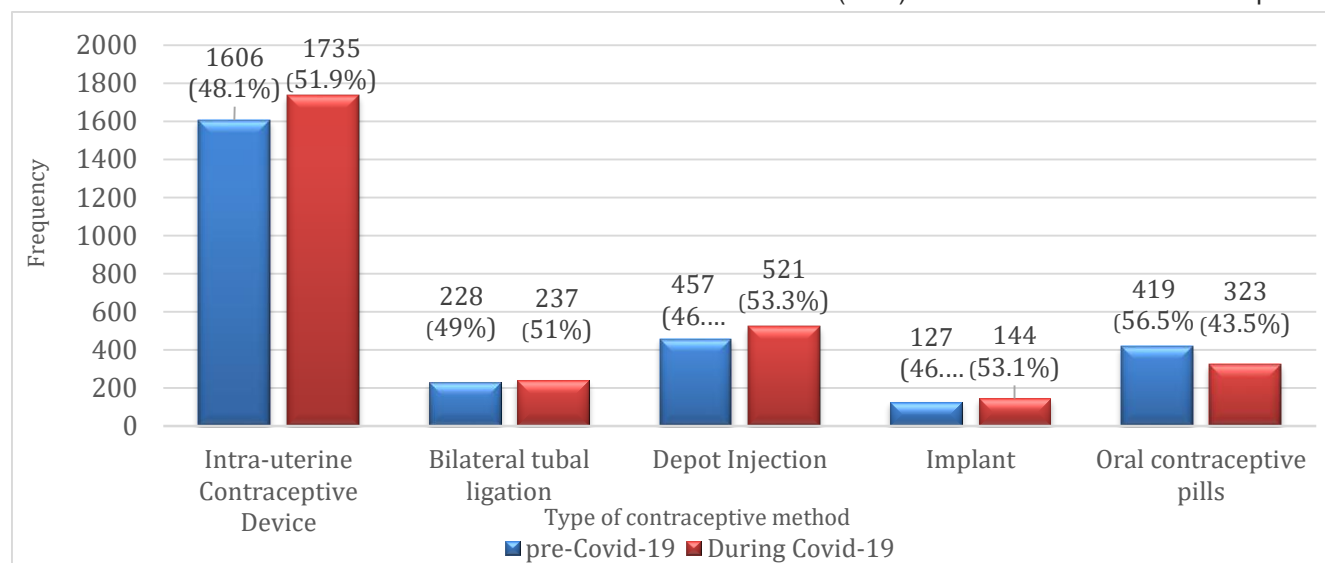


Figure 1: Type of contraceptive methods used before and during the Covid-19 pandemic (N= 5797)

the upper class, 27/32 (84.4%) underwent immediate contraception while only 5/32 (15.6%) underwent interval contraception ($p < 0.001$). These results were not affected by COVID-19 pandemic.

Chi-square tests showed that the timing and type of contraception preferred by the patients varied significantly before and during the COVID-19 pandemic.

The percentage of patients seeking immediate contraception was slightly greater during the COVID-19 pandemic (53.2%) while a slightly greater number of patients preferred interval contraception before the pandemic (50.8%), ($p = 0.002$). The rate of use of oral contraception pills dropped significantly while that of other methods of contraception increased during the COVID-19 pandemic ($p < 0.001$). The proportion of patients from lower socioeconomic status increased while that of the middle and upper class decreased significantly during the COVID-19 pandemic ($p < 0.001$). Mean age of the presenting patients was also significantly higher during the COVID-19 pandemic 31.4 ± 4.1 years vs 32.1 ± 3.9 years, $p < 0.001$. (Table I)

Discussion

Our study mainly highlighted the importance of the incorporation of family planning services in tertiary care hospitals. Although contraceptive uptake was affected by the lockdown period, overall, the majority of patients adopted immediate contraceptive methods during the pandemic. Long acting reversible method like IUCD was the most common method, followed by the injectable

hormonal method, while the use of oral contraceptive methods decreased significantly.

In one of the study in France done in 2020, it was noted that during the initial 2 weeks of lockdown, the use of oral contraceptives were increased. But later on, the uptake of all kinds of contraceptives was reduced mainly those needing medical personal presence for placement like Copper IUCD, LNG-IUS and subcutaneous implants. This was considered to be a forewarning with an expectation that unwanted pregnancies would increase exponentially.¹¹ However, after completion of the follow up the authors noted that introduction of telemedicine led to an increase in the dispensing of oral contraceptive drugs.² The results were in contrast to our study as oral contraceptive use was reduced significantly. This may be due to the difference in the study participants as our study mainly targeted antenatal women and did not include the non-pregnant clients visiting the family planning unit.

A study done in Ethiopia showed initially decreased uptake of family planning services during the lockdown period till August 2020.¹² Later on, there was a gradual increase in the contraceptive services noted. However, the study did not specify the type of modern contraceptive method commonly adopted. There was a similar temporal trend noted overall in Pakistan as the pandemic affected the basic health services provision and utilization in the low and middle income countries. This was highlighted in a commentary based on the findings of three countries, i.e., Bangladesh, Nigeria and

Table I: Comparison of age, educational status, socioeconomic status, mode of delivery, time of contraception and type of contraception before and during Covid-19 pandemic.

Variable	Groups	Pre-pandemic	During Covid -19 pandemic	p-value
Age (mean \pm SD)		31.4 \pm 4.1 years	32.1 \pm 3.9 years	< 0.001
Education level	uneducated	233 (57.8%)	170 (42.2%)	< 0.001
	primary	966 (39.2%)	1496 (60.8%)	
	Matric/intermediate	1407 (55.6%)	1122 (44.4%)	
	Graduation and higher	231 (57.3%)	172 (42.7%)	
Socioeconomic status	Lower	1155 (40%)	1730 (60%)	< 0.001
	Middle	1653 (57.4%)	1227 (42.6%)	
	Upper	29 (90.6%)	3 (9.4%)	
Mode of Delivery	SVD	1826 (64.4%)	1834 (62%)	0.058
	LSCS	1011 (35.6%)	1126 (38%)	
Time of contraception	Immediate	1245 (43.9%)	1417 (47.9%)	0.002
	Interval	1592 (56.1%)	1543 (52.1%)	
Type of contraception	IUCD	1606 (48.1%)	1735 (51.9%)	< 0.001
	Bilateral tubal ligation	228 (49%)	237 (51%)	
	Depot injection	457 (46.7%)	521 (53.3%)	
	Implant	127 (46.9%)	144 (53.1%)	
	OCPs	419 (56.5%)	323 (43.5%)	

SVD: spontaneous vaginal delivery; LSCS: lower segment cesarean section; IUCD: intra uterine contraceptive device; OCPs: oral contraceptive pills

South Africa. They concluded that the antenatal and family planning services uptake was reduced due to decreased attendance to the family planning clinics and disruption of the services. This data was from the first peak of the COVID pandemic, and the issue led to concern that there may be difficulty in achieving the target goal set by sustainable developmental goals.¹³ Therefore, population control measures were taken afterwards.

Majority of patients were middle aged females with age more than 30 years in our study. This is similar to a local study done in the selected areas of the three main provinces of Pakistan i.e., Sindh, Punjab and Khyber pakhtunkhwah. This study was based on the client interviews done by the Suraj Social Franchise facilities in the outreach areas. According to that study, females were in the reproductive age group with majority having age more than 30 years. The greater number of clients in the study were either uneducated or until primary grade 5 level. In the same way our majority of study participants were either primary grade 5 level or until matriculate/intermediate level. This may be due to the difference in the geographical background of the participants of both studies.⁷

There was a study conducted at Stanford University, California, in which 2 cohort population sub groups of pre-covid was compared to the COVID cohort.¹⁴ The study concluded that during the COVID peak, patients had no plan for contraception at the time of birth and in the early postpartum period, as there was no antenatal counseling done for that. Apart from this, the most effective long-acting contraceptive method uptake was also reduced. But there was no difference seen in interval IUCD in both groups. However, this was in contrast to our study, which showed postpartum IUCD uptake more as compared to interval IUCD.

In contrary to our results, a study done in Kenya which belongs to the low and middle income countries group and they reported an overall increase in the uptake of contraceptive services by about 3.6% that was statistically significant as compared to pre-pandemic data. But the proportion of new clients seeking family planning services were decreased.⁴ However, we observed a decrease from 38% to 26.9%. The difference may be because of increased number of non booked and emergency cases in our setup during the pandemic which were excluded from the study.

According to our study, the most common method adopted during the pandemic time was immediate IUCD

followed by depot injections. But the majority of the studies done showed reduced uptake of IUCD and OCPs uptake was increased due to telemedicine.¹¹ A study done in Kenya showed increased use of injectable methods.⁴ In one of the study done in South Africa, the uptake of contraceptive methods by clients in the covid period was compared with the pre-covid period of two years. They noted an overall increase in uptake of injectable hormonal methods during the pandemic. Apart from this, there was 30% increase in oral contraceptive pills usage. The female sterilization method remained stable whereas 10 % decline noted in the IUCD and furthermore in implants uptake.¹⁵ This shifting towards the least effective method was indirectly an indication of reduction in clients' visits for methods requiring medical assistance and decreased provision of resources as well. A similar decline in IUCD and injectable contraceptive usage by about 21% and 36% respectively, was seen in India during the period of the first COVID wave.¹⁶ However, in contrast to our results, a study done in Jordan showed decreased contraceptive services during the total lockdown time. But following that period, contraceptive uptake was augmented again. The common methods practised before and after the lockdown were IUCD followed by male condoms.¹⁷

Conclusion

The contraceptive uptake rate in the postpartum patients declined in the COVID pandemic period. But following the first COVID peak wave and partial lockdown period, the immediate IUCD was most prevalent method adopted by the patients followed by the injectable progesterone method.

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