Impact of COVID-19 pandemic in safe abortion and safe motherhood services in provincial hospital of rural Nepal: comparison of 3 waves of COVID-19

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ABSTRACT

Introduction: The COVID-19 pandemic has challenged the whole world with a major public health crisis, both directly due to the disease and indirectly in all dimensions of the health care system. This included safe abortion services and safe motherhood services but data quantifying this in a lower resource setting is lacking. This study analyzed the trends of safe abortion services, post abortion contraception opted during pandemic and safe motherhood services at a provincial hospital in rural Nepal during 25 months of COVID-19 pandemic, comparing data of three major waves.

Method: This is a retrospective observational study conducted at Pashupati Chaulagain Memorial Hospital. The data were collected from records of abortion and safe motherhood service registers. We compared the overall trends of safe abortion, family planning and safe motherhood services during first, second and third waves of COVID-19 pandemic and analyzed the sociodemographic profile of patients. Data analysis was done using SPSS 25 version.
Result: During the study period from February 2020 to February 2022, a total of 634 and 2054 clients received safe abortion services and safe motherhood services respectively. There were reductions in clients visiting for safe abortion services during lockdown periods of first and second waves, but no differences noted during the third wave. More numbers of women opted for condoms as a family planning method during lockdown period of first and second waves with less intake of Long Acting Reversible Contraceptives and permanent methods compared to non-lockdown period.

Conclusion: Utilization of safe abortion services was seriously affected in the first two waves due to COVID-19 pandemic presumably due to lockdowns, travel restrictions, home isolation, patient fear of going to hospitals, and health facilities prioritizing only COVID-19 and other emergencies. However, there was no impact in third wave for reproductive and safe motherhood services.

Keywords: COVID-19, family planning, safe abortion service, safe motherhood

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INTRODUCTION

COVID-19 pandemic has challenged the whole world with major public health crisis in all dimensions of health care system. COVID-19 was first reported in 2019 December in China and has spread throughout the whole world. Reproductive health care and safe motherhood services were affected leading to compromised overall maternal care globally due to lockdown measures.[1]

The devastating effect of COVID-19 resulted in 2.7 million unwanted pregnancies and additional 11,000 maternal deaths.[2] The rapid health assessment carried out in April 2020 by UNFPA (United Nations Population Fund) also showed less utilization of reproductive health services in Nepal.[3]

Safe Abortion Service (SAS), Safe Motherhood Services (SMS) and Family Planning Services (FPS) are essential healthcare services for women during COVID-19 pandemic. In lower resource countries, it has been estimated that if there is decrease in 10% contraceptive use, 15,401,000 unintended pregnancy occurs.[4] Due to successful safe motherhood program, there was decrease in Maternal Mortality Rate (MMR) from 901 per 100,000 live births in 1990 to 258 deaths per 100,000 live births in 2016.[5]

This study analyzes the trends of Safe Abortion Services (SAS), Family Planning (FP) methods opted during pandemic and Safe Motherhood (SM) services at a lower resource setting during 25 months of COVID-19 pandemic comparing three major waves.

METHOD

This is a retrospective observational study carried out at Pashupati Chaulagain Memorial Hospital (previously called Charikot Hospital) which is an upgraded provincial level hospital of Bagmati Province. This hospital is a referral hospital in the Dolakha district which serves for more than 60% of total deliveries in the district and only center for second trimester abortion in Dolakha and neighboring districts Sindhupalchok, Ramechhap and Okhaldhunga.

The data were collected from hospital records of SM, FP and SAS registers from 2020 February to 2022 February (25 months). First lockdown at the district occurred from May 2020- June 2020, second lockdown occurred from May 2021 to June 2021. We have taken data of 2 months prior and after the two major first and second lockdown. And, for the third wave, only 2 months prior to pandemic (January 2022- February 2022) was considered as there was no lock down.

We reviewed the sociodemographic characteristics, obstetric profile of all women visiting for SAS and numbers of deliveries and caesarian sections during three waves of COVID-19 pandemic. Data analysis was done with Microsoft Excel and SPSS version 25.

RESULT

Data of 25 months were collected and compared among 3 major waves of COVID-19. The total of 634 women received Safe Abortion Service during the period shown in Table 1. Among them, 370 (58%) women underwent Medical Abortion (MA), 124(20%) women received surgical abortion (MVA-Manual Vacuum Aspiration), 60 (9%) women underwent Medical Induction (MI) and 80 (13%) women received Dilatation and Evacuation (D&E) services. In Safe Motherhood program, 2054 women received delivery care and 399 (19%) women underwent C-sections.

Comparing 3 waves of COVID-19, graph 1 shows there was an increase in total number of deliveries in the first wave from 181 to 190 during first lockdown however total SAS intake was decreased from 58 to 38 and again there is rise in SAS intake after post COVID period. In the second wave, there was impact of COVID-19 lockdown in both SAS intake and delivery care from the hospital. However, during third wave, there was no change in SAS intake and total number of delivery.

Table 2 shows family planning intake before, during and after major first 2 waves of COVID-19 and lockdown among those women who came for safe abortion service at the hospital. Before lockdown, 44% of the women seeking for SAS used Depo-Provera as a main FP method, during lockdown 67% of the clients opted for condoms but after post COVID period, only 16% women opted for condoms, and they have received Implants, IUCDs in fairly good numbers.

Table 3 shows demographic and obstetric profile of clients visiting for SAS and SM services at PCMH. In all 3 waves, maximum number of clients receiving SAS was noted in 20-30 years of age, Ethnicity wise, Janajati were predominantly receiving SAS services. Almost 1/3rd of women received SAS from Bhimeshwor municipality and nearly half of para 1 women received delivery service in all 3 waves of COVID-19.

Table 1. SAS and SM services of PCMH during 25 months (From Feb 2020- Feb 2022)

Date	Safe Abortion Service				Safe motherhood Services		Remarks
	First Tri MA	First Tri MVA	Second Tri MI	Second Tri D&E	ND	CS	
Feb 2020	19	9	0	0	76	18	
March-2020	17	3	3	2	76	10	
Apr-2020	23	4	0	6	77	18	
May-2020	11	3	2	7	64	18	First lock-down at district
June- 2020	**7**	**5**	**1**	**2**	**92**	**16**	
July-2020	23	7	2	1	63	7	
Aug-2020	9	4	2	6	70	2	
Sep-2020	17	3	3	1	70	14	
Oct-2020	8	7	4	3	68	20	
Nov-2020	13	5	5	6	77	11	
Dec-2020	15	12	0	0	80	18	
Jan-2021	14	3	4	5	77	18	
Feb-2021	14	2	3	3	66	14	
Mar-2021	16	10	4	0	69	16	
Apr-2021	15	1	3	6	50	16	
May-2021	8	2	3	2	47	17	Second lock down at district
June-2021	10	3	2	3	54	17	
July-2021	18	4	3	0	75	17	
Aug-2021	10	9	2	3	63	19	
Sep-2021	12	6	2	3	71	24	
Oct-2021	15	8	0	3	58	22	
Nov-2021	19	4	4	7	56	20	
Dec-2022	17	7	0	4	47	13	
Jan-2022	20	1	1	4	57	21	Third Variant (No lock down)
Feb 2022	20	2	3	3	52	13	
Total	370(58%)	124(20%)	60 (9%)	80(13%)	1655	399(19%)	

Notes: Tri- Trimester, MA- Medical Abortion, MVA- Manual Vacuum Aspiration, MI- Medical Induction and D&E- Dilatation & Evacuation, ND- Normal Delivery, CS- C-Section.

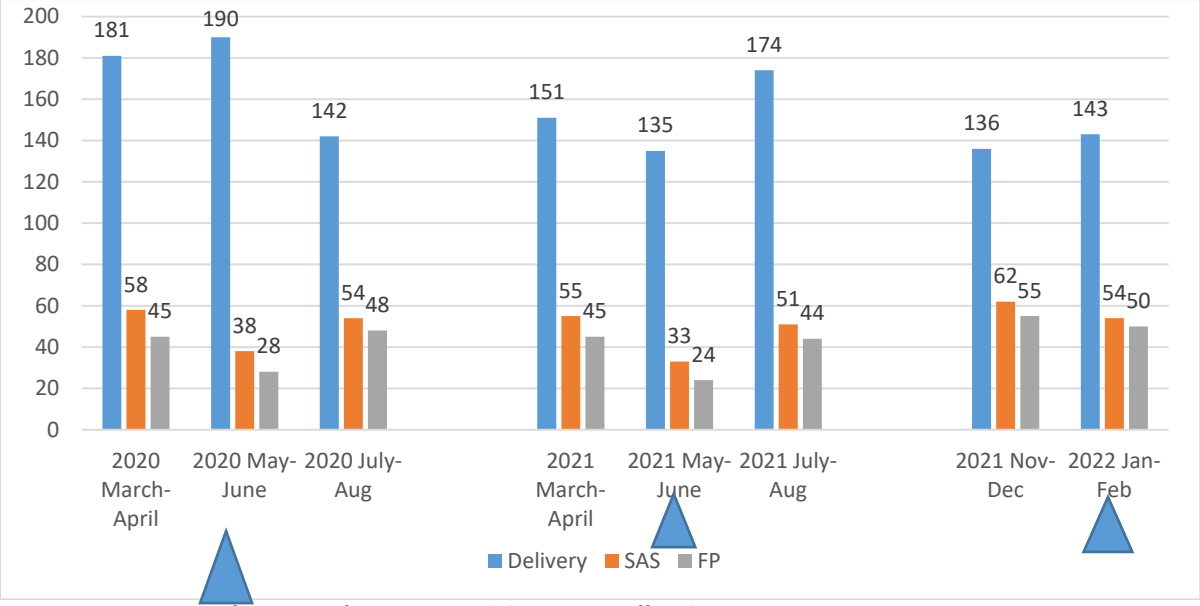

Figure 1. Comparison of 3 waves of COVID-19 and the services offered at PCMH.
Notes: FP- Family Planning, SAS- Safe Abortion Services

Table 2. Family planning intake before, during and after major first 2 waves of COVID-19 and lockdown among those women who came for safe abortion service at the hospital.

FP methods	Before Lockdown (First and second waves)	During Lockdown (First and second waves)	After lock-down (First and second waves)
Condoms	19 (21%)	35 (67%)	15 (16%)
Pills	10	5	12
Depo-Provera	40 (44%)	5	30 (32%)
Implants	7	0	13
IUCD	7	0	10
Permanent	2	0	5
None	5	7	7

Table 3. Demographic and obstetric profile of clients visiting PCMH for SAS during first and second lockdown and third wave without lockdown

	First lockdown	Second lockdown	Third wave (no lock down)
Average period of gestation for SAS (First trimester)	7.5	6.7	7.4
Average period of gestation for SAS (Second trimester)	14.1	13.2	15.3
Age Group for SAS			
<20 years	15	14	18
20-30 years	20(34%)	21	25
31-40 years	15	17	15
41-50 years	8	3	4
Ethnicity for SAS			
Brahmin/Chhetri	20	19	22
Janajati	25 (43%)	26	30
Dalit	12	10	10
Madhesi	1	0	0
Municipality (SAS)			
Bhimeshowr	18 (31%)	16	20
Tamakoshi	4	5	7
Kalinchok	5	5	5
Baiteshwor	7	6	5
Bigu	4	5	6
Melung	5	6	5
Jiri	6	4	6
Gaurishankar	4	3	4
Sailung	3	2	2
Others	2	3	2

DISCUSSION

The COVID-19 pandemic has had a profound effect on Safe Abortion Service in first and second waves during lockdown without compromising safe motherhood service intake during first lockdown. However, there was not much effect of COVID-19 in first wave for safe motherhood service intake at PCMH and obviously there was no difference noted in SAS and SM service utilization in third wave. Regarding FP service utilization, during lockdown of first and second waves, significant number of clients used condoms as a main family planning method with very less use of Long-acting reversible contraceptives (LARC) and permanent methods.

This study shows reduction in utilization of SAS and FP services during first and second waves. The decrease in maternal mortality in Nepal has been linked to the legalization of abortion and expansion of SAS all over the country.[6] Abortion care was legalized in Nepal in 2002, which is available up to 12 weeks of gestation on request of the women, up to 28 weeks' gestation in cases of rape or incest and severe mental health conditions, and at any time if the pregnancy poses a danger to the women's life or there is a gross fetal abnormality.[7] A study done by *Mishra SK et al* [8] shows a significant reduction in utilization of abortion services by 34% in first lockdown in COVID-19 pandemic and in contrast our study shows 35% reduction in first wave and 40% reduction in second lockdown of COVID-19 comparing pre-COVID utilization. And, after easing the first lockdown, there was 50% increment in service utilization of SAS in another study done by Aryal, et al.[9], in contrast our study shows 30% and 36% increment in service utilization after easing

first and second lockdown. The sharp decline in service during lock down indicates an increase in unintended pregnancies as well as unsafe abortions. Though we don't have data to verify this but we recommend to do community based study.

Throughout the three waves of COVID-19, most of the women have preferred Medical abortion (MA) in first trimester and Dilatation and Evacuation (D&E) in second trimester which is quite similar to the recent study done by Aryal, et al.[9]

Post-abortion contraception is an integral part of abortion service. In this study, Depot Medroxyprogesterone injection was the second common contraceptive method opted after condoms during COVID first and second lockdown in contrast to Depot Medroxyprogesterone being the most common contraceptive methods as per national data of 2016.[10] This study shows that no women opted for LARC and permanent contraceptive methods during the lockdown period.

Government of Nepal, did not prohibit SAS in the country during the COVOD-19 pandemic, however, healthcare facility had to ensure sufficient capacity to treat COVID-19 patients but people in our region thought that abortion and family planning services were not provided. Travel restrictions, regular follow up, home isolation and delay in availability of family planning services from health care facility were common reasons for low intake of LARC and permanent methods. This study shows that service utilization for LARC and permanent methods increased substantially after lockdown in contrast to previous pandemic due to Ebola, in which service utilization was not recovered even after 6 months.[11]

This study shows increase in clients visiting for delivery in first and third waves during lockdown of COVID-19 however there was drastic decrease in women receiving delivery services as per three delays of care model.[12] This signifies severity of second wave was most significant causing more deaths and fear for travels and seeking care.

Our study has some limitations. We did not explore prevalence and direct impact of COVID-19 on health outcomes. Qualitative interviews were not taken to assess the real decrease in service utilization. This is just a hospital-based study with small sample size. So, the finding can't be interpreted at population level. Hence, we recommend multi-centric study with qualitative component.

CONCLUSION

Utilization of SAS was seriously affected in first two waves due to COVID-19 pandemic probably due to lockdown, travel restrictions, home isolation and health facility prioritizing only COVID-19 and other emergencies. However, there was no impact in third wave for SAS. Due to more severity context of second wave, massive decrease in service utilization for safe motherhood was noted.

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Conflict of Interest

None

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None

REFERENCES

1. Adelekan T, Mihretu B, Mapanga W, Nqeketo S, Chauke L, Dwane Z, et al. Early effects of the COVID-19 pandemic on family planning utilisation and termination of pregnancy services in Gauteng, South Africa: March–April 2020. Wits J Clin Med. 2020;2(2):145-52. | Web Link | http://dx.doi.org/10.18772/26180197.2020.v2 n2a7
2. Cousins S. COVID-19 has “devastating” effect on women and girls. Lancet. 2020;396(10247):301-2. | DOI |
3. UNFPA, Nepal. COVID-19 turning pregnancy excitement into fear [Internet]. UNFPA Nepal. 2020 May 7. | Web Link) (Accessed: 28 March 2022).
4. Riley T, Sully E, Ahmed Z, Biddlecom A. Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in low-and middle-income countries. Int Perspect Sex Reprod Health. 2020;46:46. | DOI |
5. Ministry of Health and Population, Nepal. Annual Report 2071/72 (2014/2015) Kathmandu: Ministry of Health and Population, 2015.
6. Henderson JT, Puri M, Blum M, Harper CC, Rana A, Gurung G, et al. Effects of abortion legalization in Nepal, 2001-2010. PLOS One. 2013;8(5):e64775. | DOI |
7. Center for Reproductive Rights. Safe motherhood and reproductive health regulation in Nepal, 2020. Kathmandu: Ministry of Health and Population. 2021. 34p. | Full Text | Web Link |
8. Mishra SK, Rana TG, Adhikary SP, Paudel S, Sah P. Impact of COVID-19 pandemic on safe abortion and family planning services at a tertiary care women’s hospital in Nepal. Int J Reprod Contracept Obstet Gynecol. 2021;10(6):2453-8. | Web Link |

9. Aryal S, Nepal S, Pant SB. Safe abortion services during the COVID -19 pandemic: a cross-sectional study from a tertiary center in Nepal [Internet]. F1000Research. 2021;10:112. | DOI |
10. Pant PD, Pandey JP, Bietsch K. Unmet need for family planning and fertility in Nepal: levels, trends, and determinants. DHS Further Analysis Reports No. 119. Rockville, Maryland, USA: ICF. 2019. | Full Text |
11. Camara BS, Delamou A, Diro E, Béavogui AH, El Ayadi AM, Sidibé S, et al. Effect of the 2014/2015 Ebola outbreak on reproductive health services in a rural district of Guinea: an ecological study. Trans R Soc Trop Med Hyg. 2017 Jan;111(1):22-9. | DOI |
12. Thaddeus S, Maine D. Too far to walk: maternal mortality in context. Soc Sci Med. 1994;38(8):1091-110. | DOI |