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An Estimate of Abortion Incidence and Unintended Pregnancies

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ABSTRACT

Background: After the legalization of abortion in Nepal, there has been remarkable changes in policies and service delivery. However, even after two decades of legalization, access to and use of safe abortion services remains limited. The objective of this study is to estimate the incidence of abortion and unintended pregnancies in Nepal.

Methods: A cross sectional study was conducted in 767 health facilities using structured questionnaires to assess the availability of abortion services, and 231 key informant interviews were conducted. Information on medical abortion drugs was collected from distributors and pharmacies. Abortion estimations were segmented into categories: those performed within healthcare facilities, those conducted outside healthcare facilities, and those using other traditional methods. To estimate pregnancy outcomes, we utilized secondary data from national censuses and health surveys.

Results: The total incidence of induced abortion cases in Nepal was estimated to be 333,343 for the year 2021. Only 48 percent of abortion services were provided from the listed (legal) sites and providers. The estimates showed that total facility based induced abortion in Nepal was 176,216 in 2021, more than half were medical abortions. The highest and lowest abortion cases were in Bagmati and Karnali province respectively. The result showed that more than half of the pregnancies were unintended (53.3%).

Conclusions: Despite a relatively liberal legal environment, more than half of all abortions are extra-legal in Nepal. Unintended pregnancies are also common, resulting in induced abortion. This demands for increasing access to information and services on contraception and safe abortion among women and girls.

Keywords: Abortion incidence; legal abortion; unintended pregnancy.

INTRODUCTION

Abortion services in Nepal have undergone significant changes in the last two decades, with the government taking to endorse safe abortion service laws and improve access to safe and legal abortion services.[1, 2] This has been driven by the recognition of the need to address Nepal's high rates of maternal mortality and morbidity,[3] and the importance of upholding women's reproductive rights. The legalization was seen as a way to empower women and give them greater control over their own reproductive health.[4, 5] However, even after two decades of legalization, knowledge on, access to and use of safe abortion services remains limited,[6] leading to non-legal and often less safe abortion service uptake,[7] This study aims to estimate the national and sub-national incidence of unintended pregnancies and abortions in Nepal.

METHODS

This is a cross sectional study conducted in all provinces to assess the status of abortion services in Nepal in 2022. A multi-stage sampling was carried out, two districts

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from each province, two municipalities (one urban and one rural) from each district were sampled at the initial stage. Kathmandu and Lalitpur metropolitan areas were selected to capture high volume health facilities (HFs). A total of 30 municipalities were selected for the survey. A census of all HFs that fell under these selected municipalities was done. A census was also carried out of all the federal level hospitals including academic institutions/teaching hospitals, that are eligible to provide safe abortion services (SAS). A total of 767 HFs were surveyed using a structured questionnaire on the availability of abortion services. We also used women of reproductive age (WRA) and live birth data from the 2021 census to estimate abortion incidence and rate of unintended pregnancies. In addition, 231 key informant interviews (KIIs) with HF in-charge/service providers, female community health volunteers, women leaders, and traditional healers and in-depth interviews (men and in-laws) were conducted to identify abortion practices and estimate the out-of-facility and other types of abortion services. Information on medical abortion (MA) drugs sold in 2021 was also collected from super distributers of legally registered drugs. A total of 61 private pharmacies were also surveyed to collect information on dispensing MA drugs, and availability of non-registered drugs.

The data analysis involved both quantitative and qualitative methods. The mean number of abortion cases was calculated using Stata 15.0. The qualitative information was analyzed using thematic analysis. The information was used to estimate abortion performed outside of HFs and to understand traditional practices on abortion at community level.

We adopted the methodology from a study of abortion incidence in India by Guttmacher Institute in 2016.[8] The methods consisted of three components to estimate total abortion incidence. First, estimation of facility-based abortion was based on the mean abortion cases per annum by level and type of facilities surveyed, which captured the monthly and annual case load of abortion services by types. Official data from Marie Stopes International (MSI) and Family Planning Association of Nepal (FPAN) were obtained to validate the survey data. Second, the incidence of medical abortion outside of facilities was estimated using the information from the super-distributors of MA drugs in Nepal. Several adjustments had to be made based on expert opinion, pharmacy survey data, and assumptions that the study team considered about the distribution of MA across the provinces, the flow of counterfeit drugs from India and wastage of the MA drugs. The cross border and wastage/expiry/damaged adjustment were also validated by KIIs and the pharmacy survey. The number of medical abortions provided at HFs was deducted from the total number of MA drug sales to avoid duplication. Lastly, other types of abortion were estimated based on KII and existing literature. This component comprises women who obtain abortions using traditional methods. It is generally considered that this group is now extremely small. Additionally, it is difficult to obtain related data, and it could not be estimated directly using data from our survey. We estimated abortion using other methods mainly through the expert opinions in this study, which was in line with the findings from Nepal Demographic and Health Survey (NDHS) 2016 (4.6%) and another population-based survey conducted by Ipas Nepal in 2022 among 717 WRA (7.7%). In addition, international literatures for similar settings also suggested that 5% abortion were performed by other methods.[8] The study was approved by Nepal Health Research Council. This article is the part of bigger study with multiple objectives and sampling strategies. Subsequent publication will present the other finding of the study and it is ensured that there will be no duplication of data presented.

RESULTS

Of the total health facilities surveyed (767) in the study, abortion service was available only in a third of the facilities. To estimate the induced abortion cases at the facility level, the mean number of induced abortion cases per annum was calculated based on the number of abortion services by the level of health facilities surveyed. The result revealed that the highest annual mean number of induced abortion cases was at federal and teaching hospitals (551 cases), followed by FPAN and MSI HFs with 501 cases. The least number of induced abortion cases per annum was in Basic Health Service Centers (BHSC) with 42 cases.

In 2022 in Nepal, there was a total of 1469 listed HFs providing safe abortion services. The total number of abortion services from the facilities was estimated using the mean number of induced abortion cases per annum, by type of HFs. The estimates showed that total facility based induced abortion in Nepal was 176,216 in 2021. The survey result revealed that half of the abortion services provided in the HF are medical, and rest are medical induction (MI) (5.5%), manual vacuum aspiration (MVA) (39.7%) and dilation and evacuation (D&E) (4.3%).

Similarly, the study also estimated abortion incidence outside of health facilities. This was estimated based on the total medical abortion drugs sold in the year, using

the information from the drug suppliers, the pharmacy survey and KII. The total number of MA drugs sold by super distributors was 239,141 in the year 2021. After adjusting for wastage and expired drugs, medical abortions provided in HFs (total of MA and MI) and adjusting the cross-border transaction of the MA drugs from India, we estimated that the incidence of abortions outside of HFs was 140,460. The rate of cross- border transaction of MA drugs was different for different provinces, ranging from 3 percent to 17 percent (Table 1), with the national average of 10 percent.

After reviewing different scenarios and previous findings in the literature, this study estimates an incidence of 5 percent for other methods to induce abortion. As outlined above, the total induced abortion cases at health facilities and outside facilities were 316,676. Using this as a reference, the number of abortions by other methods was estimated to be 16,667. Thus, the total incidence of induced abortion cases in Nepal was estimated to be 333,343 for the year 2021. The highest abortion cases were in Bagmati province, followed by Lumbini. The lowest abortion cases were in Karnali province.

Table 1. Total abortion services in Nepal.

	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudur-paschim	National
Abortion services by level of HFs (A)								
Federal hospitals/teaching hospitals	1,652	1,102	3,305	1,652	3,305	1,102	551	12,668
Provincial hospitals	3,617	2,302	3,617	3,289	4,275	2,960	2,302	22,362
Local Hospitals	6,091	4,277	4,795	2,851	4,536	1,296	2,592	26,438
BHSC (HPs/UHCs, CHUs)	6,066	3,623	5,350	6,192	6,234	2,485	5,434	35,383
Private Hospitals	5,240	5,090	13,698	3,743	3,743	823	1,647	33,984
Private clinics	742	1,098	8,766	835	758	309	294	12,800
NGO clinics (FPAN & MSI)	6,015	3,509	6,516	2,506	9,022	1,504	3,509	32,580
Abortion by type of procedure								
MA	14,866	10,610	23,265	10,645	16,104	5,295	8,250	89,035
MI	1,612	1,150	2,522	1,154	1,746	574	894	9,652
MVA	11,669	8,328	18,261	8,355	12,640	4,156	6,475	69,884
D&E	1,276	911	1,998	914	1,383	455	708	7,645
Sub Total	**29,423**	**20,999**	**46,047**	**21,068**	**31,872**	**10,479**	**16,328**	**176,216**
Abortion outside HFs (B)								
Total MA drugs sold	39,930	28,498	62,490	28,591	43,254	14,221	22,158	239,141
Total drugs after adjusting 10% expired/wastage	35,937	25,648	56,241	25,732	38,928	12,799	19,942	215,227
Outside HFs reducing MA & MI from HFs	19,460	13,888	30,454	13,934	21,080	6,930	10,799	116,546
Cross border transaction of MA drugs	5,990	4,845	1,875	966	6,488	427	3,324	23,914
cross border rate	15%	17%	3%	3%	15%	3%	15%	10%
Sub-total	**25,449**	**18,733**	**32,329**	**14,900**	**27,568**	**7,357**	**14,123**	**140,460**
Other method for abortion (C)								
Sub total	**2,888**	**2,091**	**4,125**	**1,893**	**3,128**	**939**	**1,603**	**16,667**
Total Abortion (A+B+C)	**57,761**	**41,824**	**82,501**	**37,861**	**62,569**	**18,775**	**32,053**	**333,343**

The study also sought to estimate the percentage of legal and non-legal abortions in Nepal based on current definition. Per national standards and guidelines, abortions carried out in listed health facilities are legal abortions. Globally, non-legal abortions tend to be less safe as they may not meet WHO's criteria for safe abortion. Based on this definition, the abortion performed in non-listed facilities, non-listed providers, outside facility and other

methods are considered as non-legal. Based on this study, only 48 percent abortions are legal in Nepal in 2021. Legal abortion services were lowest in Madhesh Province, with only 40 percent (Figure 1).

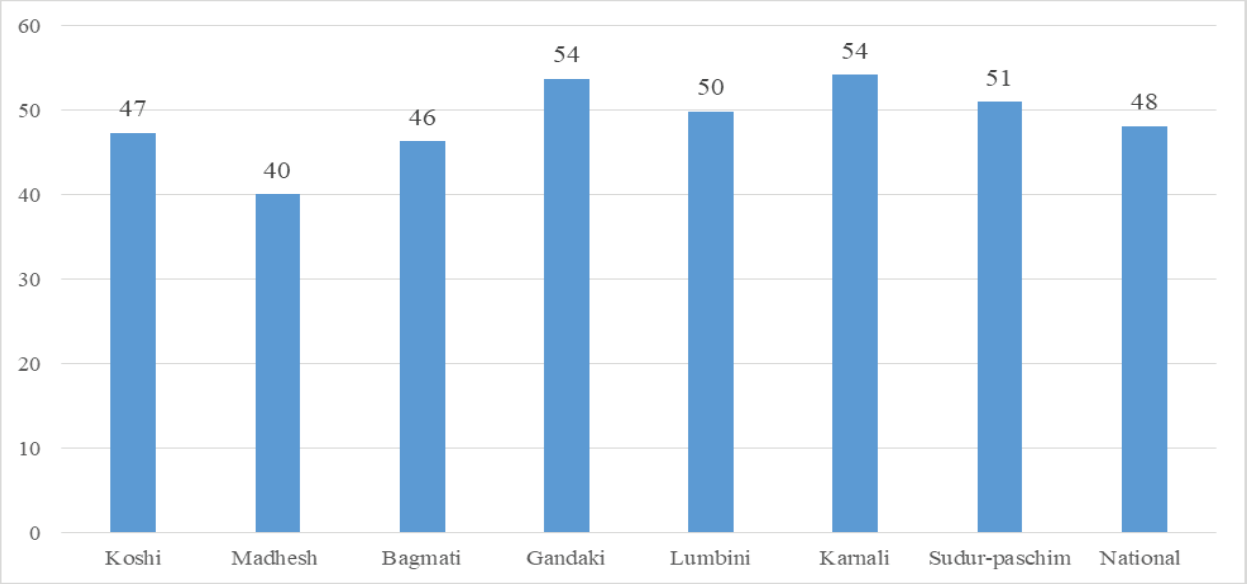

Figure 1.Percentage abortion from listed sites (%)

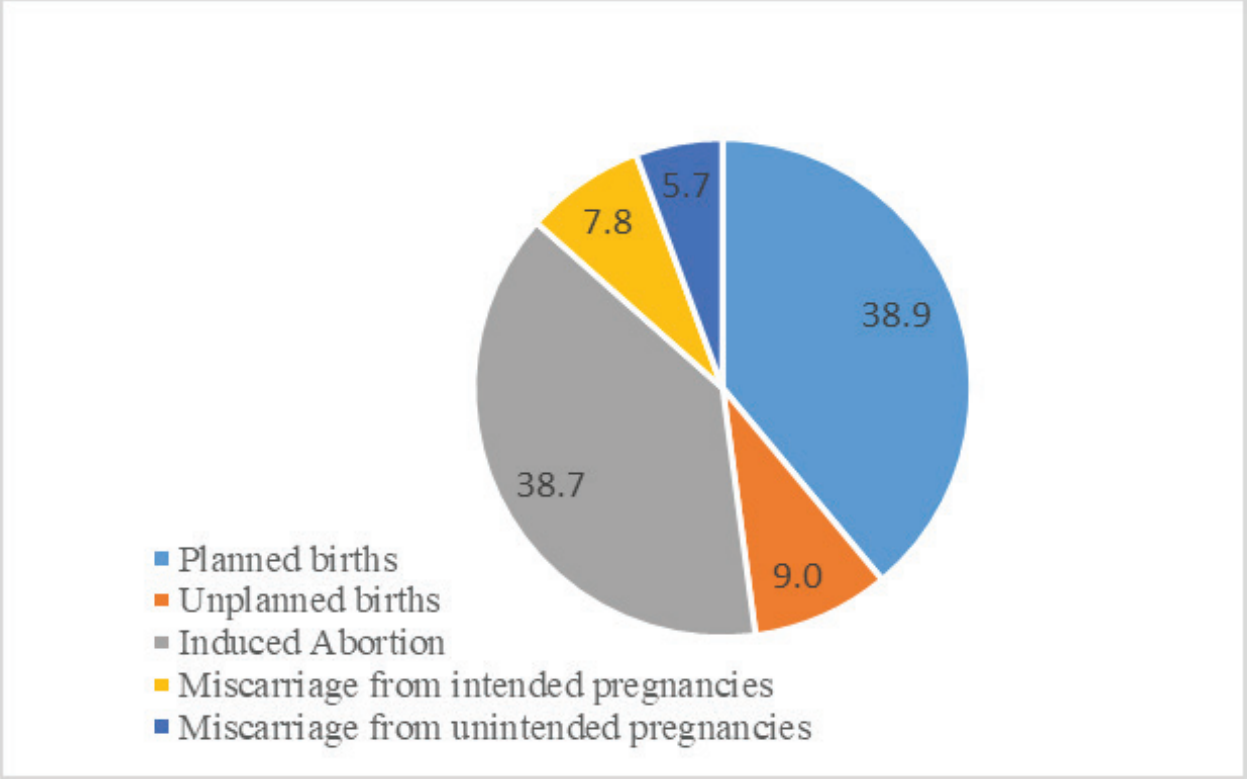

Figure 2. Pregnancy outcome in Nepal, 2021.

The study used the total live births (412,935) from the census 2021, estimated abortions data from the survey (333,343) and multiplier from the NDHS 2016 (18.7% live births are unplanned)[6] and other international literature

Table 2. Abortion incidence and unintended pregnancy in Nepal.

Indicators	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudur-paschim	National
WRA Census 2021	1393488	1599321	1797206	710933	1499219	461474	770539	8,232,180
Live Birth Census 2021	64190	96557	70380	27940	76243	31323	46302	412935
Pregnancy outcome								
Planned birth	52,186	78,501	57,219	22,715	61,986	25,466	37,644	335,716
Unplanned birth (a)	12,004	18,056	13,161	5,225	14,257	5,857	8,658	77,219
Induced abortion (b)	57,761	41,824	82,501	37,861	62,569	18,775	32,053	333,343
Miscarriage on planned pregnancy	10,437	15,700	11,444	4,543	12,397	5,093	7,529	67,143
Miscarriage on unplanned pregnancy (c)	8,177	7,794	10,882	4,831	9,108	3,049	4,937	48,778
Unintended pregnancies (a+b+c)	77,941	67,673	106,544	47,917	85,935	27,681	45,648	459,340
Total pregnancies	**140,565**	**161,874**	**175,207**	**75,175**	**160,317**	**58,240**	**90,821**	**862,199**
Unintended pregnancy proportion, %	**55.4**	**41.8**	**60.8**	**63.7**	**53.6**	**47.5**	**50.3**	**53.3**
Abortion incidence (induced abortion per 1000 WRA)	**41.45**	**26.15**	**45.91**	**53.26**	**41.73**	**40.68**	**41.60**	**40.49**

(20% miscarriage rate for unplanned births and 10% miscarriage for induced abortions).[9, 10] (Figure 2).

The pregnancy outcomes were calculated as a planned and unplanned birth, miscarriage, and induced abortion. The result showed that more than half of the pregnancies were unintended (53.3%). The unintended pregnancies were highest in Gandaki and Bagmati, and lowest for Madhesh province (Table 2).

The total number of women of reproductive age (WRA) in Nepal is 8,354,327 in 2021.[11] The total number of abortions (333,343) and WRA were used to calculate the abortion incidence rate. The total induced abortion per 1,000 WRA in Nepal was estimated to be 41. This means that for every 1,000 WRA, 41 induced abortions occur in the country in a year. This estimate of the incidence of induced abortion in Nepal can be used as a benchmark to compare with other countries or to monitor changes in the induced abortion incidence over time. The rate is highest for Gandaki followed by Bagmati, and lowest for Madhesh province.

DISCUSSIONS

This study provides the first national estimate of induced abortion disaggregated by Province after the federalization of the country. As there is partial availability of total abortion data in Nepal, this study estimated 333,343 abortion per annum in 2021. This is very high compared to the number of abortion services reported (90,733) by the health information system of MoHP,[12] which might be due to under reporting by the HFs. A similar study with different methodology also estimated 323,100 abortions in 2014.[7] These estimates indicate that the majority of abortions takes place using the available alternatives such as self-induced abortions by using MA drugs outside of HFs, and traditional, unsafe methods like use of herbs and sharp objects at the community level. The proportion of WRA using traditional methods is five percent. Looking at the provinces, total abortion is highest in Bagmati province, followed by Lumbini and Koshi, while it is lowest in Karnali.

The study findings show that despite relatively liberal laws, policies and programs in Nepal,[13, 14] only 48 percent of abortion services are provided from the listed (legal) sites and providers in 2021, which has only increased marginally compared to the last incidence study in 2014.[7] Even after two decades of legalization of abortion service in Nepal, women and girls are still using traditional methods to abort their pregnancies, indicating limited knowledge on abortion[6] and limited access to safe abortion services in the country.[13] On the other hand, the study also found high rates of medical abortion use outside of HFs. This indicates that the government may need to revise the current criteria of listing the service sites and providers to increase access to quality abortion services to women and girls. This may indicate the need for increasing HF monitoring visits and increasing regulation of the private sector HFs providing abortion services, including pharmacies.[15, 16] The Safe Motherhood and Reproductive Health act 2018 and its Regulation issued in 2020 recognize the right to access safe, legal, and comprehensive abortion services as women's right. The contradiction in policy commitments and availability of services may create

confusion and challenges for women in Nepal who may seek abortion, as well as for healthcare providers who may fear prosecution for providing such services.[13]

The study shows that along with a low number of abortion cases in Madhesh province, the provision of legal service availability is also low, which indicates that many women are receiving extralegal and likely less safe abortion services. Koshi and Bagmati provinces also have lower legal abortion services than the national average. Though there are fewer listed sites in Karnali, the utilization of legal services is one of the highest among the provinces, which may demand further study.

This study's finding shows the incidence of abortion is 40 per 1000 WRA in Nepal, which is higher than NDHS 2022 (10%) but comparable with previous studies in Nepal[7] and with the regional estimates.[17, 18] This suggests that abortion incidence has been almost stagnant for the last decade. The abortion incidence rate is highest for Gandaki followed by Bagmati provinces which have better socioeconomic conditions. There is scope for further research.

The study shows that more than half of pregnancies are unintended in Nepal, which is one of the reasons for high induced abortion The highest unintended pregnancies has been observed in Gandaki, and Bagmati, where the abortion incidence is also high, indicating the direct relationship between unintended pregnancy and abortion. This directly impacts maternal morbidity and mortality. The maternal mortality rate in Nepal has decreased significantly since the legalization of abortion in 2002. In 1996, the rate was 539 deaths per 100,000 live births, but by 2021, it had dropped to 151 per 100,000 live births, reduced the deaths due to abortive complications from 7 to 5 percent from 2008/9 to 2021.[3] The reduction in unintended pregnancies and unsafe abortion may further reduce maternal mortality. The recent NDHS also shows that among WRA who received abortion services, 62 percent of them didn't want to have children and 25 percent sought an abortion due to mistimed pregnancy, indicating the huge issues around unintended pregnancies.[11] This also indicates limited knowledge on contraception and access to contraceptive services.[19, 20]

The inclusion of abortion services in the basic health service package,[21] the introduction and the availability of medical abortion drugs at pharmacies, and the training of non-physician health workers or the expansion of the cadre of providers legally allowed to provide abortion care have all contributed to the improvement of maternal health outcomes in Nepal. [14, 22-25] While there is still more work to be done to ensure that all women in Nepal have access to safe abortion services, the progress made in the last two decades is a testament to the positive impact that expanding access to abortion can have on maternal health.

CONCLUSIONS

In Nepal, challenges remain to make abortion safer despite relatively liberal legal environment. More than half of all abortions are extra-legal- happening in HF not meeting the regulatory criteria and by traditional, unsafe methods. As nearly three-fifths of all abortions are induced with MA, a review of how to strengthen medical abortion services to further increase access especially as these services can be provided by basic health care facilities and lower-level providers with specific MA skill. High rates of unintended pregnancy led to high induced abortion (73%), leading to higher potential for abortion complications- a leading cause of maternal mortality in Nepal. The government needs to focus on increasing access to contraception, safe abortion, and knowledge on abortion among WRA, particularly considering the provincial disparities.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Rogers C, Sapkota S, Tako A, Dantas JAR. Abortion in Nepal: perspectives of a cross-section of sexual and reproductive health and rights professionals. BMC women's health. 2019;19(1):40.doi: https://doi.org/10.1186/s12905-019-0734-1

2. Shrestha DR, Regmi SC, Dangal G. Abortion: Still Unfinished Agenda in Nepal. J Nepal Health Res Counc. 2018;16(1):93-8.doi: https://doi.

org/10.3126/jnhrc.v16i1.19375

3. MoHP, National Statistics Office. National Population and Housing Census 2021: Nepal Maternal Mortality Study 2021. Kathmandu, Nepal: Ministry of Health and Population; National Statistics Office.; 2022.

4. Guttmacher Institute. Abortion Incidence and Unintended Pregnancy in Nepal. Guttmacher Institute 2017.

5. Center for Reproductive Rights. Safe and Legal Abortion is a Woman's Human Right. Kathmandu, Nepal: Center for Reproductive Rights 2011.

6. Ministry of Health Nepal, New ERA, ICF. Nepal Demographic and Health Survey 2016. Kathmndu, Nepal Ministry of Health, Nepal.; 2017.

7. Puri M, Singh S, Sundaram A, Hussain R, Tamang A, Crowell M. Abortion Incidence and Unintended Pregnancy in Nepal. International perspectives on sexual and reproductive health. 2016;42(4):197-209.doi: https://doi.org/10.1363/42e2116

8. Singh S, Shekhar C, Acharya R, Moore AM, Stillman M, Pradhan MR, et al. The incidence of abortion and unintended pregnancy in India, 2015. The Lancet Global health. 2018;6(1):e111-e20.doi: https://doi.org/10.1016/S2214-109X(17)30453-9

9. Bongaarts J, Potter RE. Fertility, biology, and behavior: An analysis of the proximate determinants: Academic press; 2013.

10. Bongaarts J. A Framework for Analyzing the Proximate Determinants of Fertility. Population and Development Review. 1978;4(1):105-32.doi: https://doi.org/10.2307/1972149

11. National Statistics Office. National Population and Housing Census 2021 (National Report). Thapathali, Kathmandu, Nepal: Government of Nepal, Office of the Primeminister and Council of Ministers, National Statistics Office; 2023.

12. Government of Nepal MoH, Department of Health Services. Annual Report - 2021/2022 Kathmandu, Nepal Department of Health Services; 2022.

13. Bell SO, Zimmerman L, Choi Y, Hindin MJ. Legal but limited? Abortion service availability and readiness assessment in Nepal. Health Policy Plan. 2018;33(1):99-106.doi: https://doi.org/10.1093/heapol/czx149

14. Andersen KL, Basnett I, Shrestha DR, Shrestha MK, Shah M, Aryal S. Expansion of Safe Abortion Services in Nepal Through Auxiliary Nurse-Midwife Provision of Medical Abortion, 2011-2013. J Midwifery Womens Health. 2016;61(2):177-84.doi: https://doi.org/10.1111/jmwh.12419

15. Puri MC. Providing medical abortion services through pharmacies: Evidence from Nepal. Best practice & research Clinical obstetrics & gynaecology. 2020;63:67-73.doi: https://doi.org/10.1016/j.bpobgyn.2019.06.003

16. Rogers C, Sapkota S, Paudel R, Dantas JAR. Medical abortion in Nepal: a qualitative study on women's experiences at safe abortion services and pharmacies. Reproductive health. 2019;16(1):105. doi: https://doi.org/10.1186/s12978-019-0755-0

17. Bearak JM, Popinchalk A, Beavin C, Ganatra B, Moller AB, Tuncalp O, et al. Country-specific estimates of unintended pregnancy and abortion incidence: a global comparative analysis of levels in 2015-2019. BMJ global health. 2022;7(3).doi: https://doi.org/10.1136/bmjgh-2021-007151

18. Sedgh G, Bearak J, Singh S, Bankole A, Popinchalk A, Ganatra B, et al. Abortion incidence between 1990 and 2014: global, regional, and subregional levels and trends. Lancet. 2016;388(10041):258-67.doi: https://doi.org/10.1016/S0140-6736(16)30380-4

19. Ministry of Health and Population N, New ERA N, and ICF. Nepal Health Facility Survey 2021 Final Report Kathmandu, Nepal: Ministry of Health and Population, Kathmandu; New ERA, Nepal; and ICF, Rockville, Maryland, USA; 2022.

20. Ministry of Health and Population [Nepal], New ERA, ICF. Nepal Demographic and Health Survey 2022. Kathmandu, Nepal: Ministry of Health and Population [Nepal]; 2023.

21. Public Health Regulation, 2077, Para 3. Sect. 10 and Annex 1.2 Gha (2020).

22. Andersen K, Fjerstad M, Basnett I, Neupane S, Acre V, Sharma SK, et al. Determination of medical abortion eligibility by women and community health volunteers in Nepal: A toolkit evaluation.

PloS one. 2017;12(9):e0178248.doi: https://doi.org/10.1371/journal.pone.0178248

23. Andersen K, Ganatra B, Stucke S, Basnett I, Karki YB, Thapa K. A prospective study of complications from comprehensive abortion care services in Nepal. BMC public health. 2012;12:9.doi: https://doi.org/10.1186/1471-2458-12-9

24. Basnett I, Shrestha MK, Shah M, Pearson E, Thapa K, Andersen KL. Evaluation of nurse providers of comprehensive abortion care using MVA in Nepal. J Nepal Health Res Counc. 2012;10(1):5-9.[Download PDF]

25. Benson J, Healy J, Dijkerman S, Andersen K. Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. Reproductive health. 2017;14(1):154. doi: https://doi.org/10.1186/s12978-017-0416-0