The Changing Face of Reproductive Autonomy: Exploring Self-Managed Abortion Landscape in India through NFHS-5

Sushanta K. Banerjee[a], Sumit Gulati[a], Erin Pearson[b]

INTRODUCTION

India took a landmark step in 1971 by enacting the Medical Termination of Pregnancy (MTP) Act, a progressive law that allowed abortion under a range of conditions—threats to a woman's life, risks to physical or mental health, economic or social challenges, rape or incest, fetal abnormalities, and contraceptive failure among married women (MTP ACT, 1971 | Ministry of Health and Family Welfare | GOI, n.d.). Under this legislation, the responsibility for performing abortions rested solely with registered medical practitioners in approved facilities.

Since then, the trajectory of abortion care in India has evolved significantly. A significant turning point came in 2002, when the Drugs Controller of India approved mifepristone for terminating pregnancies up to 49 days. This was further advanced in 2008 with the approval of a mifepristone–misoprostol combination, extending the limit to 63 days of gestation. These regulatory changes placed India among the global frontrunners in expanding access to medical abortion (Ganatra et al., 2010).

However, despite the availability of medical abortion (MA) in the country for over two decades, its adoption as a standard method in both public and private health sectors has been limited. At the same time, access to abortion has shifted dramatically, with widespread availability of MA drugs through pharmacies enabling more self-managed abortions (SMA) (Iyengar et al., 2016). According to Singh et al. (2018), an estimated 73% of abortions—around 11.2 million annually—take place outside formal healthcare facilities, primarily through self-managed medical methods. However, most facility-based studies continue to focus on regulated services, offering only a partial view of how women access abortion care. There remains limited research on the prevalence, patterns, and determinants of self-managed abortion, despite its growing relevance in India's reproductive health landscape (Banerjee et al., 2018).

This study utilizes data from the National Family Health Survey Round 5 (NFHS-5), conducted in 2019–2020, to examine the prevalence and emerging patterns of self-managed abortion (SMA) in India. It further explores the sociodemographic characteristics associated with the choice of SMA as opposed to provider-assisted abortion. In addition, the study assesses self-reported post-abortion complications, comparing outcomes between women who self-managed their abortions and those who accessed care from trained healthcare providers.

DATA AND METHODS

This study draws on data from the National Family Health Survey Round 5 (NFHS-5), India's Demographic and Health Survey, conducted between 2019 and 2021. The survey included 724,115 women aged 15–49 and, for the first time, collected detailed information on abortion experiences—including method (medicines, manual vacuum aspiration, surgical, other), gestational age, reason, place, type of service provider, year of abortion, and self-reported postabortion complications.

Abortion-related data were available for 7,696 women who experienced a pregnancy loss (abortion, miscarriage, or stillbirth) since January 2014 and whose last such event was an abortion. Women who

[a]Research & Evaluation, Ipas Development Foundation, New Delhi, India
[b]Center on Gender Equity and Health, Department of Medicine, University of California, San Diego, USA

reported a pregnancy loss were asked follow-up questions to confirm if it was an abortion, and those who did were asked detailed questions about their abortion experience.

This study defines self-managed abortion (SMA) as the use of medical abortion (MA) drugs obtained from a pharmacy and taken at home without any clinical supervision. SMA cases were identified using three variables: place of abortion (home), method (medical abortion), and provider (self or non-clinical support such as relatives). Abortions that took place outside the home and involved clinical assistance from any healthcare provider were classified as provider-assisted abortions.

Temporal trends in SMA were examined using the reported year of abortion. To ensure the sample included only those at risk of pregnancy during the whole reference period (January 2014 to survey date), we restricted analysis to 6,423 women aged 24–49 at the time of the survey, ensuring they were of reproductive age throughout the study period.

We conducted both bivariate and multivariate analyses to explore the determinants of SMA. Independent variables included sociodemographic characteristics (age, education, residence, caste, religion, wealth index), reproductive history (number of living children), gestational age, reason for abortion, and year of abortion. Gestational age was reported in completed months; for instance, 2 months approximates 8–11 weeks of gestation. Reasons for abortion were captured through a multiple-choice question offering ten response options (e.g., unplanned pregnancy, contraceptive failure).

The primary outcome, SMA, was treated as a binary variable (1 = SMA; 0 = provider-assisted abortion). We also examined the relationship between abortion method and self-reported postabortion complications, adjusting for key covariates. For this analysis, 297 cases with unknown abortion method were excluded.

FINDINGS

Data Subset Used for Analysis

Figure 1 outlines the analytic sample. Of the 724,115 women interviewed in NFHS-5, 29,702 reported a pregnancy loss between January 2014 and the survey date. Among them, 7,696 identified their most recent loss as an abortion and answered follow-up questions. Based on abortion method, provider, and place, 2,229 were classified as having a self-managed abortion, and 5,467 as provider-assisted. Of these, 1,124 women reported post-abortion complications. Most provider-assisted abortions occurred in private facilities and were primarily conducted by physicians, with some involvement of nurses, ANMs, or community health workers (data not shown).

[Figure 1]

Regional variations in Self-Managed Abortion

A clear regional pattern emerged in the prevalence of self-managed abortions (SMAs) across India (Figure 2). The eastern (45%), central (39%), and northeastern (31%) regions reported the highest proportions of SMAs. In contrast, significantly lower rates were observed in the southern (9%) and western (11%) regions. These regional disparities highlight important differences in access to services, awareness, and sociocultural factors that influence abortion-seeking behaviour across the country.

[Figure 2]

A clear trend emerged over the eight years from 2014 to 2021 (Figure 3). Among women aged 24–49 who reported an abortion during this time, the use of self-managed abortion increased steadily, from

19% in 2014 to 45% in 2021. In contrast, provider-assisted abortions declined from 81% to 55%. This shift reflects a growing reliance on self-management over clinical abortion care.

[Figure 3]

Factors associated with self-management of abortion

Table 1 presents the socio-demographic and pregnancy-related characteristics of women who reported an abortion (n=7,696). These women were generally younger, more likely to be married, and had at least two children. While the average age for both self-managed and provider-assisted abortions was around 28 years, younger women—especially those aged 15–19—were more likely to choose SMA. Rural women had higher odds of SMA, although this difference was not statistically significant. Education mattered: women with higher education were less likely to choose SMA (OR: 0.75). No significant differences were found by wealth, marital status, caste, or number of children. Muslim women had slightly lower odds of SMA than Hindus (OR: 0.82). Working women were more likely to opt for SMA (OR: 1.20). Regional variation was striking: women in the eastern (OR: 4.68) and central (OR: 3.94) regions had much higher odds of SMA than those in the west. Women who were up to 2 months pregnant had 2.93 times higher odds of opting for self-managed abortion (CI: 2.51–3.42), while those with a gestational age of less than 2 months had 4.28 times higher odds compared to women who had abortions after 3 months of pregnancy. The reasons reported for terminating the pregnancy were also associated with the likelihood of SMA. Compared to women who cited unplanned pregnancy, those who reported pregnancy complications, contraceptive failure, or fetal sex (male/female) as the reason had lower odds of choosing self-managed abortion.

[Table 1]

Self-Reported Complications Following Self-Managed Abortion

Almost one-seventh (14.6%) of women reported experiencing complications related to abortion. To examine the factors associated with these reported complications, we compared outcomes across different abortion methods, including medical and surgical procedures (Table 2). The highest rates of complications were reported among women who had abortions after three months of gestation—18.1% for medical abortions and 19.4% for surgical ones. A smaller share of women who self-managed their abortion reported complications (12.6%), compared to those who received provider-assisted abortions (14.9%). Multivariate analysis further showed that, after adjusting for socio-demographic factors, self-managed abortion did not result in significantly higher odds of complications compared to medical abortion conducted by a healthcare provider (OR: 0.83, CI: 0.69–1.00). Complication rates were notably lower among women with earlier gestational ages at the time of abortion, for both medical and surgical methods.

[Table 2]

We also examined how abortion type (self-managed vs. provider-assisted) and gestational age together influenced the likelihood of complications, stratified by abortion method (Table 3). Among women who used medical abortion, those who had provider-assisted abortions after three months of gestation had significantly higher odds of reporting complications compared to those who had provider-assisted abortions before two months (OR: 1.5, CI: 1.10–1.94). In contrast, self-managed abortions did not show higher odds of complications at any gestational age when compared to provider-assisted abortions at under two months. Women who self-managed their abortions before two months had lower odds of reporting complications than those who received provider-assisted care in the same gestational age range (OR: 0.7, CI: 0.52–0.97). Similarly, for surgical abortions, the odds of reporting complications were also higher when performed after three months of gestation (OR: 1.4, CI: 1.00–1.98).

[Table 3]

DISCUSSION

The findings suggest that approximately one in three abortions in India are self-managed, with a steady rise in such cases over the years, accompanied by a decline in provider-assisted abortions. This shift is more pronounced among women with lower education, limited wealth, and those living in rural areas. If the trend continues, self-managed abortion could soon become the dominant method in India. While this mirrors findings from earlier studies (Banerjee et al., 2018; Singh et al., 2018), it remains unclear whether this change reflects women's increased autonomy and awareness or limited access to quality facility-based care.

Self-managed abortion (SMA) is widely recognized as a safe and effective method of pregnancy termination, and often comparable to provider-based care (Kapp et al., 2023; Moseson et al., 2022, 2023). We found no increased risk of complications among women who self-managed their abortions compared to those who had provider-assisted medical abortions. Self-reported complication rates were higher only at later gestational ages (3 months or more). While more women who self-managed beyond 3 months reported complications, the difference was not statistically significant, consistent with NFHS-4 findings (Goemans et al., 2023). Global evidence also supports the safety of SMA, with success rates of 80–97%, comparable to or better than those of clinic-based care (Akin et al., 2004; Bracken, 2010; Elul et al., 2001; Karki et al., 2009). Studies also have shown the ability of women to estimate gestational age accurately and recognize when to seek care for complications (Clark et al., 2007; Shannon & Winikoff, 2008; Shellenberg et al., 2017). However, like this study, two others from India reported higher risks of complications at advanced gestational ages (Chuni & Chandrashekhar, 2009; Kalyankar et al., 2014).

Although NFHS-5 captured national-level data on abortion methods and providers for the first time in nearly three decades, it did not explore the reasons behind the choice of abortion methods, particularly, the reasons behind the rise in self-managed abortion (SMA). Several potential factors may explain this trend. Medical abortion has been legally available since 2002, leading to widespread access through pharmacies. Increased facility-based use of MA may have also improved public awareness of self-use methods. The lower direct or indirect cost, easier access to MA, privacy, and self-control compared to clinic-based care, likely contribute to the growing preference for SMA (Banerjee et al., 2018; Jardine, 2016). International evidence also shows high satisfaction with SMA due to its affordability, privacy, and convenience (Elul et al., 2001; Ngoc et al., 2004; Shah et al., 2005). More research is needed to understand the drivers of this shift in India.

While SMA with medical abortion expands access, it also raises important concerns. As SMA becomes more common, providers may lose hands-on experience in manual vacuum aspiration (MVA) and managing later-term abortions or complications, due to reduced practice, exposure, and training. This shift may lead to a decline in the health system's ability to provide safe, provider-based care, potentially limiting women's access to their preferred method. Additionally, SMA can lead to complications—especially at higher gestational ages—making it essential for women to recognize warning signs and know when to seek medical care (Kapp et al., 2023).

To expand safe and timely abortion access in India, future efforts must focus on a few critical areas. First, SMA should be supported by ensuring consistent availability of medical abortion (MA) drugs in pharmacies, along with proper orientation for pharmacists. Many lack the knowledge to guide clients on gestational age, correct dosage, timing, complications that require medical attention, and legal limits (Hajri et al., 2004; Powell-Jackson et al., 2015). While training improves knowledge, more research is

needed on changing pharmacist behaviour (Diamond-Smith et al., 2019). Pharmacists can also serve as key referral points for women needing post-abortion care.

At the facility level, providers must be equipped to deliver non-judgmental, effective post-abortion care, especially for women who self-manage and may hesitate to seek clinical help. Finally, women need clear information on the legal grounds for abortion, how to use MA safely, expected symptoms, and when to seek medical support. Strengthening these points across the system can significantly improve women's access, safety, and overall experience with abortion care.

Limitations

These findings should be interpreted with caution due to several limitations. All data are self-reported, which may lead to underreporting—especially for abortion-related information—given the cultural sensitivity and stigma surrounding the topic. SMA may be particularly underreported, as accessing MA drugs without a prescription is not permitted under the MTP Act. This is likely more pronounced among marginalized groups such as unmarried or childless women, potentially understating the role of key sociodemographic factors.

On the other hand, SMA may also be overestimated, as data were unavailable on whether women who obtained MA from pharmacies had prior consultations with providers. Additionally, the study could not verify the qualifications of reported abortion providers or the type and severity of self-reported complications.

These limitations highlight the challenges of researching and generalizing sensitive topics in restrictive contexts, and should be considered when applying these findings to inform policy or program decisions.

REFERENCES

Akin, A., Blum, J., Ozalp, S., Onderoğlu, L., Kirca, U., Bilgili, N., Koçoğlu, G., Philip, N., & Winikoff, B. (2004). Results and lessons learned from a small medical abortion clinical study in Turkey. *Contraception*, *70*(5), 401–406. https://doi.org/10.1016/j.contraception.2004.05.005

Banerjee, S. K., Kalyanwala, S., Manning, V., Andersen, K. L., Raj, R., & Das, A. (2018, March). *Is self-use of medical abortion a viable option?: A systematic review of global evidence with a special focus on India*. https://abortioncompendium.in/index.php/document/73

Bracken, H. (2010). Home administration of misoprostol for early medical abortion in India. *International Journal of Gynecology & Obstetrics*, *108*(3), 228–232. https://doi.org/10.1016/j.ijgo.2009.09.027

Chuni, N., & Chandrashekhar, T. S. (2009). Early pregnancy termination with a simplified mifepristone: Medical abortion outpatient regimen. *Kathmandu University Medical Journal (KUMJ)*, *7*(27), 209–212. https://doi.org/10.3126/kumj.v7i3.2725

Clark, W. H., Hassoun, D., Gemzell-Danielsson, K., Fiala, C., & Winikoff, B. (2005). Home use of two doses of misoprostol after mifepristone for medical abortion: A pilot study in Sweden and France. *The European Journal of Contraception & Reproductive Health Care: The Official Journal of the European Society of Contraception*, *10*(3), 184–191. https://doi.org/10.1080/13625180500284581

Clark, W. H., Gold, M., Grossman, D., & Winikoff, B. (2007). Can mifepristone medical abortion be simplified? A review of the evidence and questions for future research. *Contraception*, *75*(4), 245–250. https://doi.org/10.1016/j.contraception.2006.11.011

Conkling, K., Karki, C., Tuladhar, H., Bracken, H., & Winikoff, B. (2014). *A prospective open-label study of home use of mifepristone for medical abortion in Nepal*. http://dx.doi.org/10.1016/j.ijgo.2014.09.022

Diamond-Smith, N., Phillips, B., Percher, J., Saxena, M., Dwivedi, P., & Srivastava, A. (2019). An intervention to improve the quality of medication abortion knowledge among pharmacists in India. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics*, *147*(3), 356–362. https://doi.org/10.1002/ijgo.12960

Elul, B., Hajri, S., Ngoc, N. N., Ellertson, C., Slama, C. B., Pearlman, E., & Winikoff, B. (2001). Can women in less-developed countries use a simplified medical abortion regimen? *Lancet (London, England)*, *357*(9266), 1402–1405. https://doi.org/10.1016/s0140-6736(00)04563-3

Gambir, K., Kim, C., Necastro, K. A., Ganatra, B., & Ngo, T. D. (2020). Self-administered versus provider-administered medical abortion. *Cochrane Database of Systematic Reviews*, *3*.

Ganatra, B., Kalyanwala, S., Elul, B., Coyaji, K., & Tewari, S. (2010). Understanding women's experiences with medical abortion: In-depth interviews with women in two Indian clinics. *Global Public Health*, *5*(4), 335–347. https://doi.org/10.1080/17441690802551340

Goemans, S., Singh, A., Yadav, A. K., McDougal, L., Raj, A., & Averbach, S. H. (2023). The Association Between Self-Managed versus Clinician-Managed Abortion and Self-Reported Abortion Complications: A Cross-Sectional Analysis in India. *International Journal of Women's Health*, *15*, 1467–1473. https://doi.org/10.2147/IJWH.S414599

Hajri, S., Blum, J., Gueddana, N., Saadi, H., Maazoun, L., Chélli, H., Dabash, R., & Winikoff, B. (2004). Expanding medical abortion in Tunisia: Women's experiences from a multi-site expansion study. *Contraception*, *70*(6), 487–491. https://doi.org/10.1016/j.contraception.2004.06.012

IDF, Parveen, S., Banerjee, S. K., & Manning, V. (2023). *Self-Managed Abortion Journeys of Women*. Ipas Development Foundation. https://www.ipasdevelopmentfoundation.org/wp-content/uploads/2024/02/Main_Report_SMA-journeys_A-research-study-using-diary-method-in-two-states-of-India.pdf

Iyengar, K., & Iyengar, S. D. (2016). Improving access to safe abortion in a rural primary care setting in India: Experience of a service delivery intervention. *Reproductive Health*, *13*(1), 54. https://doi.org/10.1186/s12978-016-0157-5

Jardine, O. (2016, October 4). *Medical Abortion in India: A model for the rest of the world?* MSI Reproductive Choices. https://www.msichoices.org/latest/medical-abortion-in-india-a-model-for-the-rest-of-the-world-research-and-analysis/

Kalyankar, B., Kalyankar, V., Yelikar, K., & Kshirsagar, A. (2014). Study of Home use of Oral Misoprostol in Medical Abortion. *International Journal of Biomedical and Advance Research*, *5*. https://doi.org/10.7439/ijbar.v5i5.777

Kapp, N., Mao, B., Menzel, J., Eckersberger, E., Saphonn, V., Rathavy, T., & Pearson, E. (2023). A prospective, comparative study of clinical outcomes following clinic-based versus self-use of medical abortion. *BMJ Sexual & Reproductive Health*, *49*(4), 300–307. https://doi.org/10.1136/bmjsrh-2022-201722

Karki, C., Pokharel, H., Kushwaha, A., Manandhar, D., Bracken, H., & Winikoff, B. (2009). Acceptability and feasibility of medical abortion in Nepal. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics*, *106*(1), 39–42. https://doi.org/10.1016/j.ijgo.2009.02.007

Larrea, S., Hidalgo, C., Jacques-Aviñó, C., Borrell, C., & Palència, L. (2022). "No one should be alone in living this process": Trajectories, experiences and user's perceptions about quality of abortion care in a telehealth service in Chile. *Sexual and Reproductive Health Matters*, *29*(3), 1948953. https://doi.org/10.1080/26410397.2021.1948953

Malik, M., Girotra, S., Zode, M., & Basu, S. (2023). Patterns and predictors of abortion care-seeking practices in India: Evidence from a nationally representative cross-sectional survey (2019-2021). Cureus, 15(7), Article e41263. https://doi.org/10.7759/cureus.41263

Maurya, C., & Sahoo, H. (2019). Post-abortion complications and treatment-seeking behaviour among women in India. Social Science Spectrum, 5(2), 99-111.

Ministry of Law and Justice. (2021). The Medical Termination of Pregnancy (Amendment) Act, 2021 NO. 8 OF 2021. The Gazette of India. https://prsindia.org/files/bills_acts/acts_parliament/2021/Medical%20Termination%20of%20Pregnancy%20Amendment%20Act%202021.pdf

Moseson, H., Jayaweera, R., Egwuatu, I., Grosso, B., Kristianingrum, I. A., Nmezi, S., Zurbriggen, R., Bercu, C., Motana, R., & Gerdts, C. (2023). Effectiveness of Self-Managed Medication Abortion Between 9 and 16 Weeks of Gestation. *Obstetrics and Gynecology*, *142*(2), 330–338. https://doi.org/10.1097/AOG.0000000000005266

Moseson, H., Jayaweera, R., Egwuatu, I., Grosso, B., Kristianingrum, I. A., Nmezi, S., Zurbriggen, R., Motana, R., Bercu, C., Carbone, S., & Gerdts, C. (2022). Effectiveness of self-managed medication abortion with accompaniment support in Argentina and Nigeria (SAFE): A prospective, observational cohort study and non-inferiority analysis with historical controls. *The Lancet Global Health*, *10*(1), e105–e113. https://doi.org/10.1016/S2214-109X(21)00461-7

MTP ACT, 1971 | Ministry of Health and Family Welfare | GOI. (n.d.). Retrieved March 5, 2024, from https://main.mohfw.gov.in/?q=acts-rules-and-standards-health-sector/acts/mtp-act-1971

Ngoc, N. T. N., Nhan, V. Q., Blum, J., Mai, T. T. P., Durocher, J. M., & Winikoff, B. (2004). Is home-based administration of prostaglandin safe and feasible for medical abortion? Results from a multisite study in Vietnam. *BJOG: An International Journal of Obstetrics and Gynaecology*, *111*(8), 814–819. https://doi.org/10.1111/j.1471-0528.2004.00209.x

Platais, I., Tsereteli, T., Grebennikova, G., Lotarevich, T., & Winikoff, B. (2016). Prospective study of home use of mifepristone and misoprostol for medical abortion up to 10 weeks of pregnancy in Kazakhstan. *International Journal of Gynecology & Obstetrics*, *134*(3), 268–271. https://doi.org/10.1016/j.ijgo.2016.02.018

Podolskyi, V., Gemzell-Danielsson, K., Maltzman, L. L., & Marions, L. (2023). Effectiveness and acceptability of home use of misoprostol for medical abortion up to 10 weeks of pregnancy. *Acta Obstetricia Et Gynecologica Scandinavica*, *102*(5), 541–548. https://doi.org/10.1111/aogs.14549

Powell-Jackson, T., Acharya, R., Filippi, V., & Ronsmans, C. (2015). Delivering Medical Abortion at Scale: A Study of the Retail Market for Medical Abortion in Madhya Pradesh, India. *PLOS ONE*, *10*(3), e0120637. https://doi.org/10.1371/journal.pone.0120637

Pradhan, M. R., & Saikia, D. (2023). Patterns and correlates of post-abortion complications in India. BMC women's health, 23(1), 97. https://doi.org/10.1186/s12905-023-02254-x

Rahaman, M., Das, P., Chouhan, P., Das, K. C., Roy, A., & Kapasia, N. (2022). Examining the rural-urban divide in predisposing, enabling, and need factors of unsafe abortion in India using Andersen's behavioral model. *BMC Public Health*, *22*(1), 1497. https://doi.org/10.1186/s12889-022-13912-4

Shah, R., Baji, S., & Kalgutkar, S. (2005). Attitudes about medical abortion among Indian women. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics*, *89*(1), 69–70. https://doi.org/10.1016/j.ijgo.2004.12.036

Shannon, C., & Winikoff, B. (2008). How much supervision is necessary for women taking mifepristone and misoprostol for early medical abortion? *Women's Health (London, England)*, *4*(2), 107–111. https://doi.org/10.2217/17455057.4.2.107

Shellenberg, K. M., Antobam, S. K., Griffin, R., Edelman, A., & Voetagbe, G. (2017). Determining the accuracy of pregnancy-length dating among women presenting for induced abortions in Ghana. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics*, *139*(1), 71–77. https://doi.org/10.1002/ijgo.12235

Shochet, T., Berro Pizzarossa, L., Larrea, S., Blum, J., Jelinska, K., Comendant, R., & Sagaidac, I. (2023). Self-managed abortion via the internet: Analysis of one year of service delivery data from Women Help Women. Gates Open Research, 7, 41. https://doi.org/10.12688/gatesopenres.14369.1

Singh, S., Sundaram, A., Hossain, A., Puri, M. C., Sathar, Z., Shekhar, C., Crowell, M., & Moore, A. M. (2020). Abortion service provision in South Asia: A comparative study of four countries. *Contraception*, 102(3), 210-219. https://doi.org/10.1016/j.contraception.2020.05.015

Singh, S., Hussain, R., Shekhar, C., Acharya, R., Pandey, N., & Stillman, M. (2020). Incidence of treatment for postabortion complications in India, 2015. BMJ Global Health, 5, e002372. https://doi.org/10.1136/bmjgh-2020-002372

Singh, S., Shekhar, C., Acharya, R., Moore, A. M., Stillman, M., Pradhan, M. R., Frost, J. J., Sahoo, H., Alagarajan, M., Hussain, R., Sundaram, A., Vlassoff, M., Kalyanwala, S., & Browne, A. (2018). The incidence of abortion and unintended pregnancy in India, 2015. *The Lancet Global Health*, *6*(1), e111–e120. https://doi.org/10.1016/S2214-109X(17)30453-9

Tamang, A., Puri, M., Masud, S., Karki, D. K., Khadka, D., Singh, M., Sharma, P., & Gajurel, S. (2018). Medical abortion can be provided safely and effectively by pharmacy workers trained within a harm reduction framework: Nepal. *Contraception*, *97*(2), 137–143. https://doi.org/10.1016/j.contraception.2017.09.004

Figure 1. Flow chart of analysis sample

```
                        ┌─────────────────────────┐
                        │   Women interviewed     │
                        │                         │
                        │     (n=724,115)         │
                        └─────────────────────────┘
                                    │
                ┌───────────────────┴───────────────────┐
                ▼                                        ▼
┌─────────────────────────────┐          ┌─────────────────────────────┐
│ Reported a pregnancy loss   │          │ Reported no pregnancy loss  │
│ between 2014-2021           │          │ between 2014-2021           │
│                             │          │                             │
│      (n=29,702)             │          │      (n=694,413)            │
└─────────────────────────────┘          └─────────────────────────────┘
        │          \                              │
        │           \                            │
        │            ▼                           │
        │   ┌─────────────────────────────┐      │
        │   │ Last pregnancy loss:        │      │
        │   │ Miscarriage                 │      │
        │   │      (n=19,548)             │      │
        │   │ Last pregnancy loss:        │      │
        │   │ Stillbirth                  │      │
        │   └─────────────────────────────┘      │
        │                   \                    │
        ▼                    ▼                   ▼
┌─────────────────────────────┐          ┌─────────────────────────────┐
│ Last pregnancy loss:        │          │ No abortion reported        │
│ Abortion                    │          │                             │
│      (n=7,696)              │          │      (n=716,419)            │
│ MA=5,089, Surgical=2,310,   │          │                             │
│ Method Missing=297          │          │                             │
└─────────────────────────────┘          └─────────────────────────────┘
        │
  ┌─────┴──────────────────────────────────┐
  ▼                                         ▼
┌──────────────────────┐          ┌──────────────────────┐
│ Abortion type:       │          │ Abortion type:       │
│ Self-managed         │          │ Provider-assisted    │
│ (n=2,229; 29.0%)     │          │ (n=5,467; 71.0%)     │
└──────────────────────┘          └──────────────────────┘
        │                                  │
        ▼                                  ▼
┌──────────────────────┐          ┌──────────────────────┐
│ Abortion complication│          │ No abortion           │
│ (n=1,124; 14.6%)     │          │ complications         │
│                      │          │ (n=6,572; 85.4%)     │
└──────────────────────┘          └──────────────────────┘
```
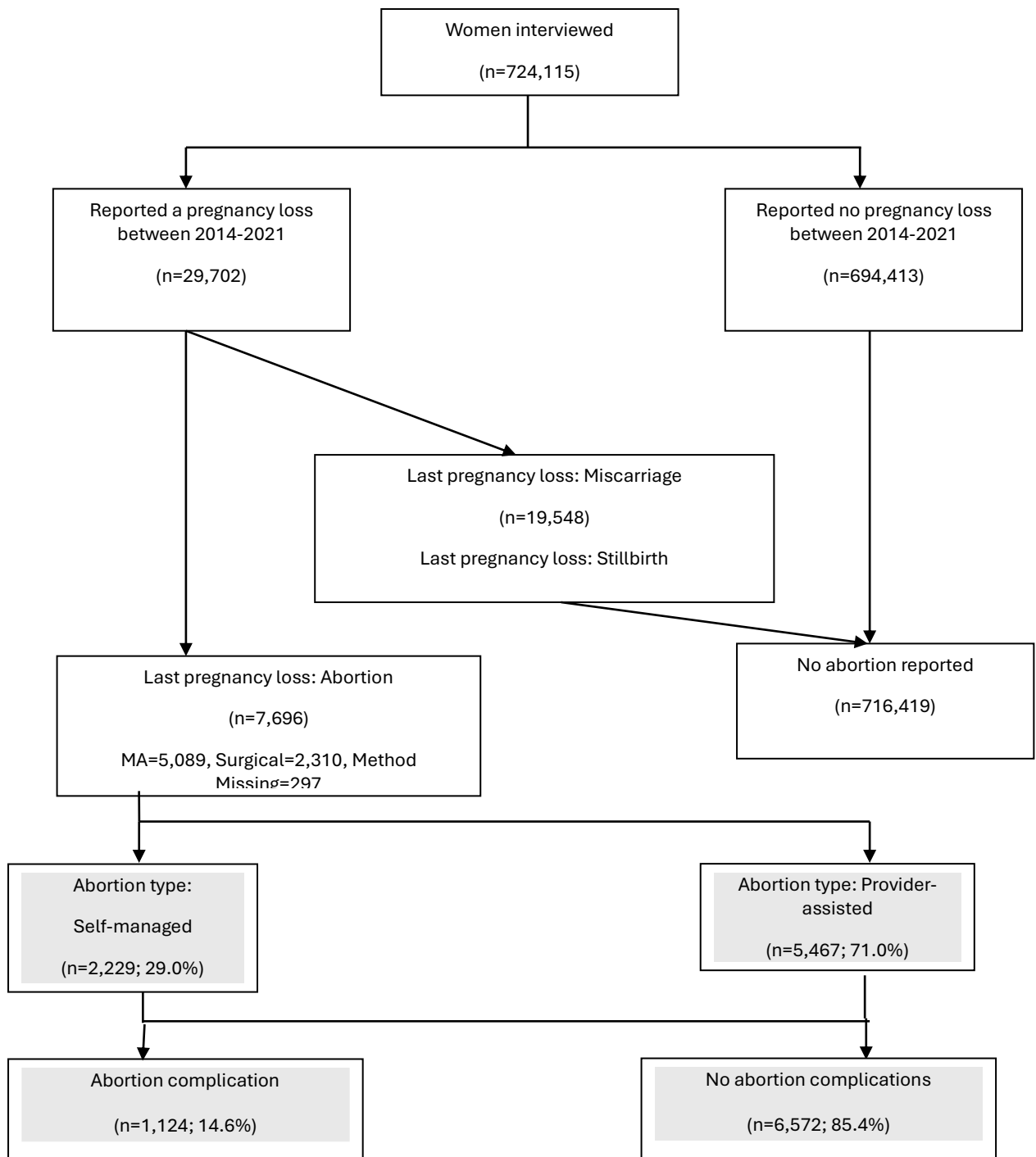
Figure 2. Proportion of abortions reported as self-managed by state and union territory (n=7,696)

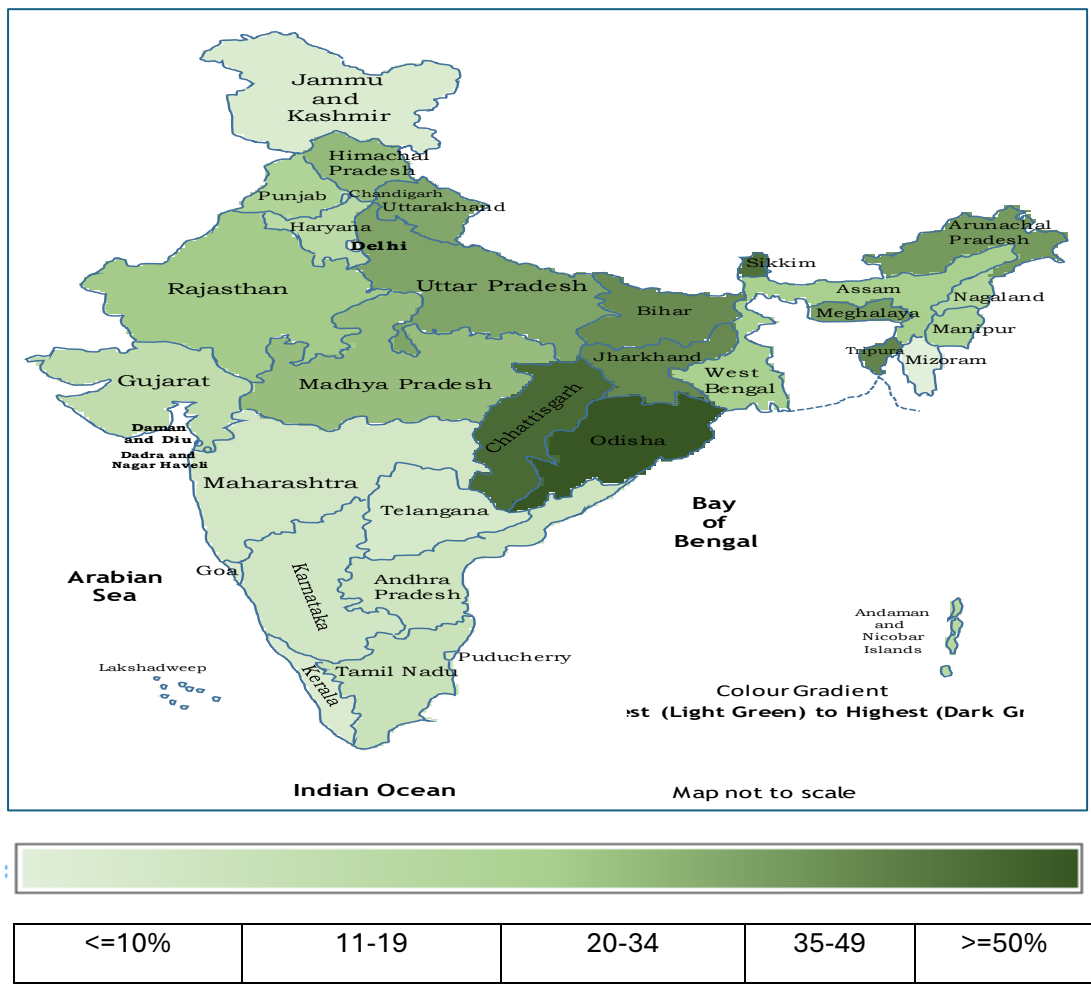| <=10% | 11-19 | 20-34 | 35-49 | >=50% |

Figure 3: Proportion of reported abortions that were self-managed vs. provider-assisted by year (2014-2021) among women aged 24-49 years at the time of the survey (n=6,423)
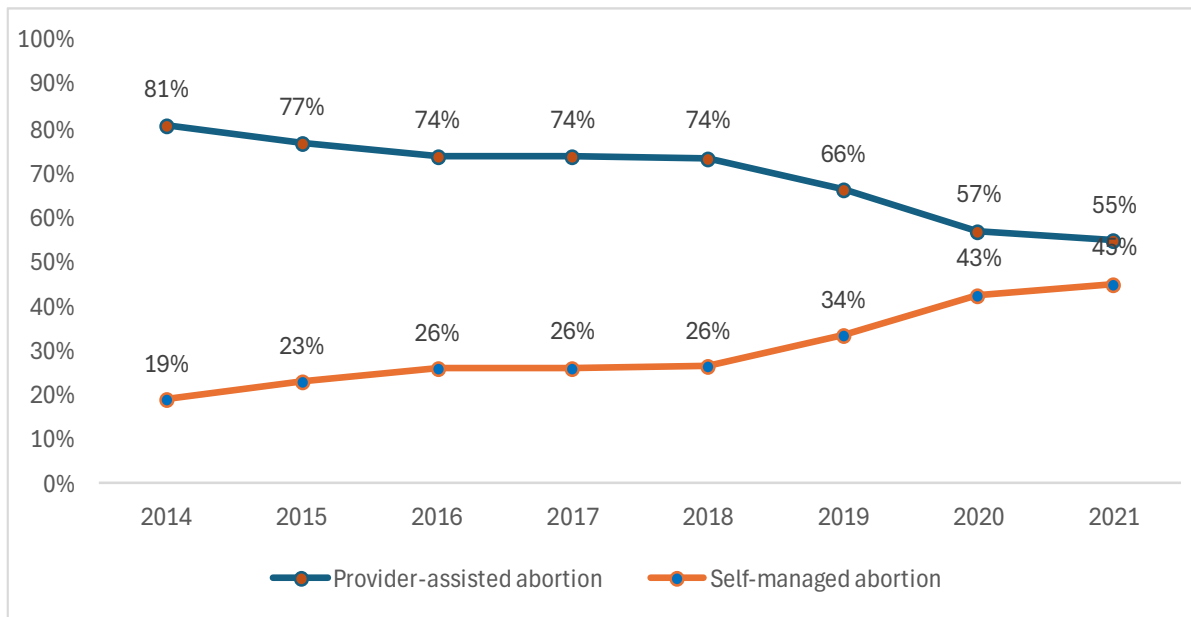
Table 1. Sociodemographic characteristics of the all women sample (n=724,115) and abortion sample (n=7,696) and results of multivariate logistic regression models for factors associated with self-managed abortion (=1) versus provider-assisted abortion (=0)

Characteristics of women	Abortion sample (N=7,696)		Adjusted OR (95% CI)
	Self-managed abortion (N=2,229)	Provider-assisted abortion (N=5,467)	
	%	**%**	
Age			
15-19 (ref)	1.9	2.0	
20-24	22.0	20.4	0.99 (0.64-1.52)
25-29	38.0	34.4	0.80 (0.52-1.23)
30-34	22.8	25.2	0.67 (0.42-1.05)
35 & above	15.3	18.0	0.50 (0.31-0.80)
Place of residence			
Urban (ref)	31.8	39.4	
Rural	68.2	60.6	1.05 (0.91-1.21)
Region			
West (ref)	5.9	17.4	
North	12.4	11.0	3.22 (2.37-4.37)
Central	33.2	21.0	3.94 (2.93-5.28)
East	35.3	19.1	4.68 (3.48-6.30)
Northeast	5.9	5.7	2.34 (1.72-3.18)
South	7.4	25.8	1.16 (0.82-1.62)
Education			
No education (ref)	16.0	12.0	
Primary	13.2	10.5	0.88 (0.71-1.09)
Secondary	56.8	55.3	0.93 (0.77-1.12)
Higher	14.0	22.2	0.75 (0.58-0.95
Caste			
General (ref)	26.9	29.4	
Scheduled Tribe (ST)	6.7	5.4	1.17 (0.95-1.45)
Scheduled Caste (SC)	24.1	22.6	1.06 (0.89-1.26)
Other Backward Caste (OBC)	42.4	42.6	1.05 (0.90-1.21)
Religion			
Hindu (ref)	86.0	83.8	
Muslim	11.2	11.5	0.82 (0.67-1.00)
Christian	0.9	1.8	1.04 (0.75-1.45)
Sikh	1.1	1.5	0.90 (0.59-1.39)
Others	0.8	1.3	0.78 (0.55-1.13)
Employment Status			
Not working (ref)	82.7	85.2	

Working	17.3	14.8	1.20 (1.04-1.40)
Wealth Index			
Rich (ref)	39.7	48.9	
Middle	18.9	22.0	0.94 (0.80-1.12)
Poor	41.4	29.1	1.17 (0.99-1.38)
Marital Status			
Currently married (ref)	97.9	97.9	
Currently not married	2.1	2.1	0.99 (0.61-1.59)
Years since marriage			
15 years and above (ref)	17.5	16.1	
10-14 years	24.5	21.8	0.96 (0.78-1.18)
5-9 years	39.6	40.0	1.02 (0.81-1.30)
0-4 years	17.7	21.3	1.12 (0.83-1.51)
Never married	0.7	0.7	2.03 (1.00-4.13)
Living Children			
0-1 (ref)	31.5	39.9	
2	40.2	37.9	1.00 (0.85-1.17)
3+	28.3	22.2	1.12 (0.91-1.36)
Gestational age at the time of abortion			
3 months & above (ref)	14.1	41.5	
2 months	44.7	36.5	2.93 (2.51-3.42)
Less than 2 months	41.2	22.0	4.28 (3.63-5.04)
Reason for abortion			
Unplanned pregnancy (ref)	61.8	36.2	
Contraceptive failure	2.6	3.7	0.67 (0.50-0.91)
Complications(s) in pregnancy	1.9	14.8	0.11 (0.07-0.15)
Health did not permit	6.8	15.1	0.39 (0.31-0.48)
Female foetus	1.5	2.2	0.46 (0.29-0.73)
Male foetus	0.2	0.5	0.33 (0.12-0.91)
Economic reasons	2.8	3.2	1.07 (0.78-1.46)
Last child too young	11.9	8.6	0.89 (0.74-1.05)
Foetus had congenital abnormality	0.5	6.0	0.09 (0.05-0.19)
Husband/mother-in-law did not want	5.0	3.3	0.99 (0.77-1.28)
Other	5.0	6.4	0.39 (0.30-0.52)
Overall Prevalence	29.0	71.0	

Table 2. Results of multivariate logistic regression models for factors associated with post-abortion complications (Yes=1 & No=0) by abortion method*

Characteristics of women	Medical abortion (N=5,089)		Surgical abortion (N=2,310)	
	Complications %	Adjusted OR (95% CI)	Complications %	Adjusted OR (95% CI)
Management of abortion				
Provider-assisted abortion (ref)	14.9			
Self-managed abortion	12.6	0.83 (0.69-1.00)		
Gestational age at time of abortion				
3 months & above (ref)	18.1		19.4	
2 months	12.6	0.64 (0.52-0.78)	14.0	0.69 (0.53-0.89)
Less than 2 months	11.7	0.62 (0.49-0.77)	13.4	0.69 (0.49-0.98)
Age				
15-19 (ref)	14.7		22.0	
20-24	13.8	1.03 (0.57-1.85)	16.8	0.88 (0.39-1.99)
25-29	12.4	1.03 (0.57-1.87)	16.3	0.95 (0.41-2.18)
30-34	14.5	1.24 (0.67-2.31)	17.6	1.07 (0.45-2.54)
35 & above	15.7	1.11 (0.58-2.14)	14.4	0.86 (0.34-2.14)
Place of residence				
Urban (ref)	13.1		14.6	
Rural	14.2	0.98 (0.79-1.19)	17.1	1.36 (1.02-1.80)
Region				
West (ref)	13.6		20.3	
North	17.2	1.34 (0.92-1.95)	19.7	0.99 (0.66-1.48)
Central	14.4	1.23 (0.84-1.79)	17.3	0.93 (0.61-1.42)
East	15.5	1.22 (0.84-1.78)	16.3	0.80 (0.51-1.28)
Northeast	12.6	0.82 (0.55-1.25)	12.6	0.58 (0.37-0.90)
South	9.8	0.61 (0.41-0.90)	14.1	0.58 (0.36-0.93)
Education				
No education (ref)	16.3		18.3	
Primary	16.0	1.06 (0.79-1.45)	10.4	0.55 (0.33-0.92)
Secondary	13.8	0.94 (0.72-1.22)	17.1	0.98 (0.67-1.42)
Higher	10.9	0.73 (0.51-1.04)	16.6	0.91 (0.57-1.44)
Caste				
General (ref)	15.5		18.6	
Scheduled Tribe (ST)	14.0	0.85 (0.62-1.16)	13.2	0.83 (0.52-1.32)
Scheduled Caste (SC)	14.4	0.94 (0.74-1.21)	17.9	1.12 (0.79-1.57)
Other Backward Caste (OBC)	12.6	0.89 (0.72-1.10)	14.9	0.82 (0.62-1.09)
Religion				
Hindu (ref)	13.4		15.8	
Muslim	16.6	1.19 (0.92-1.56)	23.7	1.78 (1.26-2.50)
Christian	12.9	1.25 (0.75-2.07)	11.5	0.91 (0.43-1.89)

Sikh	14.9	0.81 (0.45-1.47)	16.7	0.77 (0.37-1.60)
Others	18.2	1.42 (0.87-2.23)	11.3	0.88 (0.40-1.91)
Employment Status				
Not working (ref)	14.2		16.8	
Working	12.4	0.89 (0.70-1.12)	14.3	0.90 (0.65-1.24)
Wealth Index				
Rich (ref)	12.6		16.5	
Middle	13.7	1.09 (0.86-1.38)	19.3	1.31 (0.96-1.80)
Poor	15.4	1.22 (0.96-1.55)	14.6	0.95 (0.68-1.32)
Marital Status				
Currently married (ref)	13.7		16.2	
Currently not married	19.5	1.14 (0.61-2.11)	26.7	1.29 (0.51-3.28)
Years since marriage				
15 years and above (ref)	17.4		15.1	
10-14 years	12.6	0.69 (0.51-0.93)	16.5	0.94 (0.62-1.43)
5-9 years	13.2	0.74 (0.53-1.03)	16.1	0.79 (0.49-1.26)
0-4 years	13.4	0.69 (0.46-1.05)	17.3	0.71 (0.39-1.26)
Never married	21.6	1.08 (0.43-2.69)	42.9	2.50 (0.54-11.45)
Living Children				
0-1 (ref)	15.2		18.8	
2	13.0	0.76 (0.61-0.93)	15.4	0.73 (0.54-0.98)
3+	13.5	0.58 (0.43-0.76)	13.9	0.57 (0.38-0.85)

*297 abortion cases were excluded from the models as the method of abortion was missing

Table 3: Results of multivariate logistic regression models for the interaction effect of provider type and gestational age on post-abortion complications (N=5,089 for MA and N=2,310 for surgical abortion*)

Interaction	Medical Abortion (N=5,089)		Surgical Abortion (N=2,310)	
	Complications	Adjusted OR (95% CI)	Complications	Adjusted OR (95% CI)
	%		%	
Performed by provider and gestation <2 months (ref)	13.0		13.7	
Performed by provider and gestation 2 months	12.6	0.9 (0.68-1.23)	13.9	0.9 (0.67-1.38)
Performed by provider and gestation 3 months and above	18.0	1.5 (1.10-1.94)	19.4	1.4 (1.00-1.98)
Self-managed and gestation <2 months	10.7	0.7 (0.52-0.97)		
Self- managed and gestation 2 months	12.6	0.8 (0.61-1.12)		
Self- managed and gestation 3 months and above	18.6	1.3 (0.88-1.92)		

*297 abortion cases were excluded from the multivariate models as the method of abortion was missing