

Assessment of delayed termination of pregnancy in India: Evidence from National Family Health Survey, 2019–21

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ABSTRACT

Background: Compared to first trimester abortions, those in the second trimester significantly contribute to maternal morbidity and mortality, particularly in low- and middle-income settings where access to safe second trimester abortion services is restricted. This study aimed to evaluate the prevalence and factors associated with induced second trimester abortions in India.

Data and methods: Retrospective calendar data for 7,696 women aged 15–49 years from fifth round of National Family Health Survey (2019–2021) was used for the study. Bivariate analysis was conducted to determine the prevalence of second trimester abortion, while logistic regression was utilized to model the factors associated with second trimester abortion.

Results: thirteen percent of all women who underwent an abortion had delayed their termination till second trimester. A significant proportion of women without children and without a male child were observed to have a high rate of delayed termination. The likelihood of terminating the pregnancy at an advanced gestational stage was also found to be higher among women who had no children or a male child.

Conclusions: The findings emphasize the urgent need to address son-preference prevalent in certain regions of India. Again, to improve the reproductive health of women in India accessible and comprehensive abortion care is imperative to prevent delays that could exacerbate complications and add many fold risks to women's health. Furthermore, there is a need for strengthened governmental initiatives, especially targeting underprivileged communities, to encourage the uptake of contraceptives.

Background

While the majority of abortions occur during the first trimester, a notable percentage of pregnancy terminations worldwide happen during the second trimester. The second trimester abortion refers to the termination of pregnancy occurring between 13 to 28 weeks of gestation. This period is further categorized into the early period, spanning from 13 to 20 weeks, and the late period, ranging from 20 to 28 weeks [1]. Among women of reproductive age, morbidity and mortality estimates are significantly influenced by pregnancy loss, primarily attributed to induced abortion. Annually, over 42 million abortions are conducted worldwide, with a significant proportion of them occurring during the second trimester. More than half of these second-trimester abortions are deemed unsafe, significantly increasing the risk of maternal mortality [2]. Despite of heightened risk of complications,

particularly when abortion is conducted through unsafe means, a significant number of married women undergo abortion during second trimester in India [3]. Key reasons for opting for second-trimester abortions include delays in recognizing unintended pregnancies, limited involvement in abortion-related decisions, concerns regarding stigma & confidentiality, and financial constraints [4]. Population-based studies in India have estimated induced abortion rates as 27 per thousand women aged 15–49 [5]. Another analysis of the National Family Health Survey reported a 14.3 % rate of induced abortion in India [6], studies also have revealed a high prevalence of second-trimester abortions in India [7]. Additionally, sex-selective abortion has been identified as a contributing factor to second-trimester abortions in India [3,4]. There is a growing perception in India that second-trimester abortions are still being used for sex selection, prompting discussions on implementing measures such as pregnancy registration and monitoring, as

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well as restricting second-trimester abortions, to address the incidence of sex-selective abortion [8].

For over five decades since the introduction of the Medical Termination of Pregnancy (MTP) Act in 1971, women in India have had legal access to abortion services provided by registered facilities and certified practitioners [9,10]. These services are available for various reasons, including situations where the mother's life or health is at risk, instances of rape, pregnancies likely to result in children with physical or mental abnormalities, and cases of contraceptive failure. The MTP Act allows abortions up to 20 weeks of gestation without requiring the consent of the husband or guardian for adult women. However, even with the legal framework established by the Medical Termination of Pregnancy (MTP) Act, which was further amended in 2021 to facilitate safer and more accessible abortions for women, [10], majority of the estimated abortions performed annually in India are carried out by uncertified providers in unsafe setting [5]. Induced abortion especially at an advanced gestational age, is associated with complications such as incomplete pregnancy, haemorrhage, sepsis, and other complications related to women's reproductive health [11]. Moreover, these events can lead to psychological trauma for women and their families [12].

In India, the incidence rate of recurrent induced abortion is notably higher compared to Western countries [13]. The prevalence of induced abortion varies significantly depending on the gestational period. Rates are highest in early pregnancy, particularly between 6–8 weeks, followed by 9–11 weeks and 12–20 weeks per thousand pregnancies. Literature have stated that although in India most induced abortions occur in the first trimester, a considerable share still occurs in the second trimester [14]. Early diagnosis of pregnancy and access to safe abortion services can mitigate many complications and maternal health risks [15]. Therefore, understanding the factors associated with induced abortion in different trimesters is crucial. The literature on second-trimester abortion in India is sparse, therefore obtaining accurate and disaggregated data is challenging. While some authors in the past had suggested that India may have the highest number of second trimester abortions globally [16], such claims lacked conclusive supporting data. The rationale for this study is driven by the fact that there is limited evidence on the factors influencing delayed pregnancy termination in India. While existing studies offer some insights, there remains a significant gap in understanding what specifically drives abortions at advanced gestational ages. Additionally, though sex-selective abortion has long been a concern in the country, there is a lack of updated evidence to substantiate this issue in the context of delayed terminations. Against this backdrop, this paper aims to explore the prevalence of second and third trimester abortions using calendar data from a nationally representative dataset, with a focus on identifying factors associated with these advanced gestational terminations in India.

Data and methods

Data for this study was derived from the fifth round of India's National Family Health Survey, 2019–21 (NFHS-5). It is a nationally representative household survey conducted across all states and union territories of India. The data incorporated calendar data encompassing the reproductive history of the women spanning from past five years from the date of survey, capturing events such as pregnancy, childbirth, contraceptive usage, and reasons for contraception discontinuation. 7,24,115 women aged 15–49 years were interviewed in the survey. Among them the current study focused on women who experienced at least one pregnancy terminated in abortion during last five years (n = 7,696).

Outcome and Predictor variables

The primary dependent variable was gestational age at the time of pregnancy termination in abortion (categorized in trimester) among respondents aged 15–49 years who had experienced at least one

pregnancy in the five years preceding the survey.

Predictor variables included having at least one son (Yes, No), age group (19–24 years, 25–29 years and 30 years & above), number of living children at the time of abortion (no children, one child, two children and more than 2 children), Used any contraceptive method before abortion (Yes, No), method employed in abortion (pills, MVA, surgical and others), Place of abortion (Public, Private and other) reason for abortion (unplanned pregnancy, health related reason, sex of the child and economic reasons) religious affiliation (Hindu, Muslim, Christian, other), urban–rural residence, social class (Scheduled Caste, Scheduled Tribe, Other Backward Classes, Other Caste), educational attainment (Primary, Secondary, Higher), household wealth index (poor, middle, rich), mass media exposure (No, Yes), and geographical regions of India (East, West, North, South, Central, North-east).

Statistical analysis

We conducted cross tabulation to assess the prevalence of second and third trimester abortion in India across various socio-demographic factors. Statistical significance was determined using Chi square test. Furthermore, we employed a generalized logistic regression model to ascertain the risk factors associated with second trimester abortion. The model's output provides adjusted relative risks of induced abortion in second trimester across various socio-demographic factors among the women in reproductive age group, along with their corresponding 95 % confidence intervals (95 % CI). Statistical significance was determined at a p-value of < 0.05. Data analysis was carried out using Stata software (version 16.0; Stata Corp LLC, College Station, TX).

Results

Out of the women who had chosen to terminate their pregnancies, the majority opted for termination during the first trimester (86 %), while thirteen percent women waited until the second trimester to undergo abortion (Fig. 1).

Overall, the percentage of women having abortion during first trimester was higher across various socio-demographic characteristics of the women. Proportion of abortion cases were found to be higher among Hindu women, women residing in rural areas, belonging to OBC category of social castes, having secondary levels of education, falling into the rich wealth index category, with exposure to mass media, and living in the central and east region of the country region of the country. A major proportion of the women reported using medicine to abort their

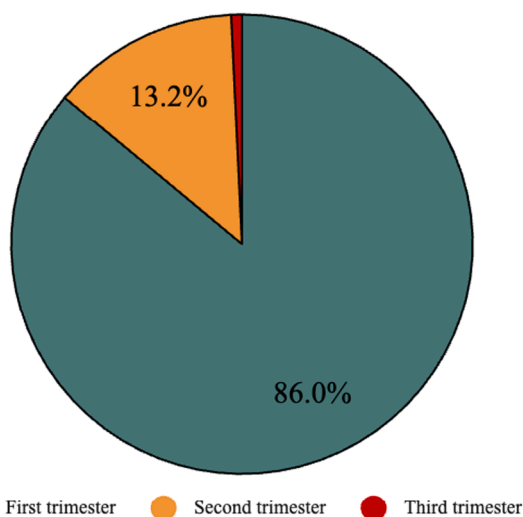


Fig. 1. Distribution of abortion cases by trimester among the women aged 15–49 years in India (NFHS-5, 2019–21).

pregnancies (n = 5,183, 67.3 %). Reason for most of the women being unplanned pregnancy (n = 3,595, 46.7 %), a greater proportion of the women had chosen private facility to carry out the abortion. (n = 4,218, 54.8 %) (Table 1).

A notable observation was that twenty-eight per cent of the women with no children and fourteen per cent women who mothered a single child had chosen to wait till second or third trimester to abort their pregnancy. Another crucial finding was that among the women who did not have a son, 20.6 % of them were observed to have delayed their termination till second or third trimester. A twenty per cent women less than 20 years of age opted for second trimester abortion. Assessing the method employed for abortion it was found that around eleven per cent women had used medicine and another twenty one percent women used other methods which also included unlisted unsafe methods to abort their pregnancies in second or third trimester (Table 1). Another notable finding was that 28 % women who had to abort their pregnancy because of health-related reason either of the child or the mother waited till second or third trimester to abort their pregnancy. 17.5 % women who had chosen to terminate their pregnancy in second or third trimester stated their reason for abortion as the sex of the unborn child. Among the women who did not carry out their abortion in any healthcare facilities, 3.6 % women had second or third trimester abortion. 18.6 % of the interviewed women with no education was observed to have delayed their termination till second or third trimester. Second and third trimester abortion among the women from poor wealth quintile was found to be 13 % while it was 14.9 % and 14.3 % among the women in middle and rich wealth quintiles respectively. Highest proportion of second trimester abortion was observed among the Christian women (16.6 %), while the results observed within other categories did not vary much. 17.2 % women who were not using any contraceptive method before the termination had second or third trimester abortion. In southern region twenty-five per cent among the women who had an abortion chose to terminate their pregnancy in second or third trimester. A fifteen per cent women residing in rural areas had second or third trimester abortion, it was also observed that a greater proportion of the women having no exposure to mass media had second trimester abortion (15 %). Results suggested that of all the caste categories, proportion of second or third trimester abortion was highest among the women belonging to Scheduled caste (Table 1).

Another crucial observation from the current study was that as compared to the women who had terminated their pregnancies with medicine, women aborting pregnancies with any other methods are in a higher likelihood of delaying the abortion till second or third trimester (ORs: 1.45 for MVA, 1.72 for surgical method and 1.61 for any other method). The women who choose to abort their pregnancies due to health-related reasons and because of sex of the child shows three-fold and double fold risk of delaying the abortion till second trimester respectively compared to the women who chose abortion because of unplanned pregnancies (OR 3.78 and 2.62 respectively), again the women choosing abortion because of economic constraints on their end had a higher likelihood of delaying abortion to later gestational age when compared to the women facing unplanned pregnancy (OR:1.92). Women with some education when compared to their uneducated counterparts and women belonging to middle or rich wealth quintile when compared to the poorer counterparts showed less likelihood for carrying out the abortion in second trimester (Table 2). As compared to the women with no children women with children are less likely to go for second trimester abortion (ORs: 0.77, 0.61 and 0.54 for women with single, two and more than two children respectively). Another notable finding was that the women who were mother to at least one son were less likely to delay their abortion till second or third trimester when compared to the women with no son (OR:0.78). Women who were using any contraceptive method before the termination showed lower likelihood of delaying abortion till advanced gestational age when compared to the women who did not use any (OR: 0.79). Women residing in the Southern region of India were observed to have a higher likelihood for

Table 1

Sample characteristics of the women having abortion at different trimesters (First and second & third trimester) (NFHS-5, 2019–21).

| Variables | First trimester | Second & third trimester | Total | P Value |
|--|-----------------|--------------------------|--------------|-----------------|
| Age at abortion | | | | <0.001 |
| Less than 20 | 80.4 | 19.6 | 153 | |
| 20–24 | 84.1 | 15.9 | 1,559 | |
| 25–29 | 86.1 | 14.0 | 2,696 | |
| 30 or more | 87.2 | 12.8 | 2,867 | |
| Method of abortion | | | | <0.001 |
| Medicines | 89.4 | 10.6 | 5,183 | |
| MVA | 80.2 | 19.9 | 888 | |
| Surgical | 79.3 | 20.7 | 1,263 | |
| Other | 79.1 | 20.9 | 354 | |
| Reason of abortion | | | | <0.001 |
| Unplanned pregnancy | 94.6 | 5.4 | 3,595 | |
| Health related reasons | 72.2 | 27.9 | 2,186 | |
| Sex of the child | 82.5 | 17.5 | 474 | |
| Economic reasons | 87.9 | 12.1 | 1,434 | |
| Place of abortion | | | | <0.001 |
| Public facility | 81.0 | 19.0 | 1,597 | |
| Private facility | 83.7 | 16.3 | 4,218 | |
| Elsewhere | 96.4 | 3.6 | 1,873 | |
| Educational qualification | | | | <0.001 |
| No education | 81.4 | 18.6 | 1,011 | |
| Primary | 90.0 | 10.0 | 889 | |
| Secondary | 86.7 | 13.3 | 4,285 | |
| Higher | 85.9 | 14.1 | 1,512 | |
| Wealth Index | | | | Not significant |
| Poor | 86.9 | 13.1 | 2,902 | |
| Middle | 85.1 | 14.9 | 1,666 | |
| Rich | 85.7 | 14.3 | 3,128 | |
| Religion | | | | Not significant |
| Hindu | 86.2 | 13.8 | 6,499 | |
| Muslim | 86.9 | 13.2 | 880 | |
| Christian | 83.4 | 16.6 | 120 | |
| Others | 86.9 | 13.1 | 198 | |
| Number of living children at the time of abortion | | | | <0.001 |
| No children | 71.8 | 28.2 | 1,277 | |
| Single | 86.1 | 13.9 | 2,658 | |
| Two | 91.2 | 8.8 | 2,304 | |
| More | 91.3 | 8.7 | 1,450 | |
| Have at least one son | | | | <0.001 |
| No | 79.6 | 20.4 | 2,335 | |
| Yes | 88.8 | 11.2 | 5,361 | |
| Used any contraceptive method before abortion | | | | |
| No | 82.8 | 17.2 | 4,854 | |
| Yes | 92.1 | 7.9 | 2,842 | |
| Region | | | | <0.001 |
| North | 87.3 | 12.8 | 875 | |
| Central | 91.0 | 9.0 | 1,874 | |
| East | 88.5 | 11.5 | 1,819 | |
| North | 94.0 | 6.0 | 444 | |
| West | 87.4 | 12.6 | 1,091 | |
| South | 74.6 | 25.4 | 1,593 | |
| Place of Residence | | | | <0.001 |
| Urban | 88.7 | 11.3 | 2,866 | |
| Rural | 84.8 | 15.2 | 4,830 | |
| Media Exposure | | | | Not significant |
| No | 84.9 | 15.1 | 1,376 | |
| Yes | 86.5 | 13.5 | 6,320 | |
| Caste | | | | <0.001 |
| Scheduled caste | 85.0 | 15.0 | 1,775 | |
| Scheduled tribe | 86.3 | 13.7 | 445 | |
| OBC | 85.8 | 14.2 | 3,271 | |
| Others | 87.8 | 12.2 | 2,205 | |
| Total | 6,636 | 1,060 | 7,696 | |

Table 2
Factors associated with delaying abortion from first trimester to second & third trimester (NFHS-5, 2019–21).

| Variables | OR (95 % CI) |
|--|---------------------|
| Age at abortion | |
| 15-24® | |
| 25–29 | 1.07 (0.88–1.29) |
| 30 or more | 1.16 (0.94–1.42) |
| Method of abortion | |
| Medicines ® | |
| MVA | 1.45** (1.17–1.78) |
| Surgical | 1.72*** (1.44–2.05) |
| Other | 1.61** (1.18–2.21) |
| Reason of abortion | |
| Unplanned pregnancy ® | |
| Health related issues | 3.78*** (3.11–4.58) |
| Sex of the child | 2.62*** (1.96–3.52) |
| Economic reasons | 1.92*** (1.54–2.4) |
| Place of abortion | |
| Public ® | |
| Private | 0.84** (0.72–0.99) |
| Elsewhere | 0.31*** (0.24–0.42) |
| Educational attainment | |
| No education ® | |
| Primary | 0.63** (0.47–0.84) |
| Secondary | 0.62*** (0.5–0.78) |
| Higher | 0.44*** (0.33–0.59) |
| Wealth Index | |
| Poor ® | |
| Middle | 0.85 (0.7–1.05) |
| Rich | 0.83* (0.67–1.03) |
| Religion | |
| Hindu ® | |
| Muslim | 0.97 (0.77–1.22) |
| Christian | 0.9 (0.58–1.39) |
| Others | 0.78 (0.55–1.12) |
| Number of living children at the time of abortion | |
| No children ® | |
| Single | 0.77** (0.64–0.93) |
| Two | 0.61*** (0.48–0.76) |
| More | 0.54*** (0.41–0.72) |
| Have at least one son | |
| No ® | |
| Yes | 0.78* (0.67–0.92) |
| Used any contraceptive method before abortion | |
| No ® | |
| Yes | 0.79** (0.67–0.94) |
| Region | |
| North ® | |
| Central | 0.7** (0.54–0.91) |
| East | 0.87 (0.67–1.14) |
| North | 0.46*** (0.34–0.62) |
| West | 0.81 (0.61–1.08) |
| South | 1.56*** (1.23–1.97) |
| Place of Residence | |
| Urban ® | |
| Rural | 1.44*** (1.21–1.71) |
| Media Exposure | |
| No ® | |
| Yes | 0.96 (0.78–1.18) |
| Caste | |
| Scheduled caste ® | |
| Scheduled tribe | 0.93 (0.71–1.23) |
| OBC | 0.91 (0.76–1.1) |
| Others | 0.94 (0.76–1.17) |
| Constant | 0.2*** (0.13–0.3) |

Pseudo R2 = 0.158.

Note: Significance level *p < 0.1, **p < 0.05, ***p < 0.001.

®: Reference category.

delayed abortion as compared to the women residing in the Northern part of the country (OR: 1.56). Women residing in rural areas and belonging to southern region are more likely to go for second trimester abortion as compared to their urban counterparts (OR: 1.44). It was also suggestive from the current study that the women having exposure to Mass media as compared to the women who did not have any and the

women from all the other categories of caste when compared to the women belonging to Scheduled caste had a lower likelihood of getting second or third trimester abortion (Table 2).

Discussion

We conducted an analysis to estimate the abortion cases specifically in the second and third trimester, along with their predictors. Several significant findings emerged from our analysis. While the prevalence of abortion was higher in the first trimester, a notable proportion of the women underwent abortion in second or third trimester which exhibited disparities across various socio-economic domains. A crucial finding revealed that women without sons were more inclined to opt for second or third trimester abortions. Existing literature underscores the persistence of son preference and the continued occurrence of sex-selective abortions in certain regions of India [17]. Despite numerous government efforts, a portion of women still choose sex-selective abortion. Effective policies aimed at raising awareness about laws prohibiting sex detection are necessary in these regions. It was observed that a greater proportion of the women in the younger reproductive age group had opted second or third trimester abortion. Women in the younger reproductive age groups are more prone to have experienced unwanted pregnancies as their awareness about reproductive health, available services and contraceptive methods are limited [18], stigma associated with abortion also might cause the delay in seeking abortion care for the young women. Bivariate analysis highlighted that second or third trimester abortion were comparatively higher among the women who had aborted their pregnancies due to health-related reasons, A plausible explanation for this could be that since the pregnancy wasn't unwanted, women may opt to wait to see if they can carry it to term. Additionally, in cases of fetal anomaly, the waiting period for diagnostic tests and the decision-making process might result in a delay in seeking abortion until the pregnancy has advanced to a later gestational age [19]. The study further unveiled that the Christian women, women with no formal education, belonging to scheduled caste or tribe, and residing in rural areas exhibited a higher proportion of second or third trimester abortions. This highlights persistent socioeconomic disparities that influence the decision-making process of women or their families [20]. Women without children displayed a relatively higher proportion of second or third trimester abortions, possibly due to their strong desire to have children despite facing obstacles. This desire may contribute to delays in seeking abortion among these women. Nulligravida women are prone to certain underlying health conditions and certain issues such as spontaneous uterine rupture, rendering the womb unsuitable for sustaining the pregnancy which can compel women to undergo abortion at a later stage of gestation [21]. Women who were not using any contraceptive methods before were found to have delayed seeking abortion till second or third trimester. Existing literature indicates that contraceptive usage among women in India remains low [22], which increases the risk of subsequent pregnancies [23]. Moreover, non-use of any contraceptive method suggests a potential desire for children, this may subsequently result in abortions due to some underlying reasons, as it was also revealed from the finding that women in the middle and rich wealth quintiles are less likely to go for an abortion at later gestational age so another possible explanation being marginalized and disadvantaged sections of society who lack access to effective contraceptive methods often encounter logistical and cost-related barriers to access safe abortion services, which in turn cause delays in seeking timely care. A major proportion among the women residing in the southern region of the country were found to have sought abortion at a later gestational age, in comparison to other regions of India, women in southern India tend to have higher levels of educational attainment, their career-oriented approach often leads to cause delay in child-bearing, thereby increasing the risk of foetal anomalies [24].

The presence of son preference in Indian societies was evident in the current study, as women without sons showed a higher propensity for

opting for second-trimester abortions. Existing literature frequently discusses sex-selective abortion in India [25], highlighting the necessity for effective measures to address this issue. Furthermore, the finding is supported by another result that the women who stated that they aborted their pregnancy due to the sex of the child showed a significantly higher risk of undergoing second or third trimester abortion. Number of living children also showed to have contributed to the decision of delaying abortion to a later stage, desire for child bearing serve the explanation to this finding [26]. With increasing level of education, a lower likelihood of undergoing second trimester was observed when compared to uneducated women abortion possible reason maybe with higher levels of education had a lower chance of experiencing abortion, potentially due to better reproductive health awareness and economic empowerment.

Women who were using contraceptive method before abortion showed a lower likelihood of delaying their abortion A plausible explanation for this might be that women with access to contraceptive methods also have access to other reproductive health services making it easier for them to seek timely care. Women living in rural areas and those with no exposure to mass media were observed to be more likely to delay seeking abortion until the second or third trimester. Accessibility and awareness of available services also awareness about safe period of aborting a pregnancy could offer a plausible explanation for this trend. Socio cultural disparity in reproductive health decisions among the women was also evident from the study when it was found that the women belonging to scheduled caste exhibited higher likelihood of delaying abortion seeking when compared to the other categories of caste. Women residing in the southern part of India showed a significant increased likelihood of delaying abortion till second or third trimester. One recent study carried out in southern India had found that most of the second-trimester termination were due to congenital anomalies [27]. The widespread prevalence of consanguineous marriage in the southern part of India [28] remains a risk factor for congenital anomalies [29]. Moreover, the delayed age of childbearing due to career and economic reasons may also contribute to foetal anomalies and in turn causing delay in abortion seeking.

While our study benefits from a nationally representative dataset and a robust methodology, the study also had a few limitations. Since the data was derived from a cross-sectional survey, with self-reported data it may be prone to recall bias. Underreporting has consistently been a challenge with abortion data, which may have impacted the information collected for the survey. Additionally, information on pregnancy outcomes (such as live birth, miscarriage, abortion, or stillbirth) was only available for the most recent pregnancy in the calendar data, preventing an analysis of pregnancies terminated prior to the most recent one. Future research should explore additional reproductive health variables and consider longitudinal designs to better understand the complexities of abortion and its consequences on women's health. Another study conducted in the same region revealed that the majority of women sought second-trimester abortions due to unsuccessful attempts with unsafe methods or informal providers during the first trimester [30]. Moreover, previous studies [2] have reported that maternal mortality attributed to abortion is higher in cases of late-term abortions. However, this could not be analysed in the current study due to paucity of data. Again, the survey was conducted during the COVID-19 pandemic, which may have affected access to abortion services. Although this is a potential covariate, no data was available to analyse its impact in the current study.

The findings underscore the urgent need for addressing son-preference prevalent in some parts of India. Initiatives are required to reduce the obstacles women face when seeking abortions, especially, to guarantee that marginalized section and economically disadvantaged women have access to safe and timely abortion services. Comprehensive dissemination of awareness regarding the locations of suitable abortion facilities, the provision of free services in the public sector, and women's entitlement to access these services and make abortion decisions is

crucial. Efforts should also emphasize the significance of early pregnancy termination and the importance of seeking abortion from qualified providers rather than resorting to unsafe methods or relying on unqualified providers and pharmacists. This study also serves the evidence indicating that having a son and number of living children plays a significant role in second-trimester abortions, there is a urgent need for more effective implementation of the Pre-natal Diagnostics Techniques (Regulation and Prevention of Misuse) Act (PNDT Act). In addition to ongoing efforts to change deeply entrenched social norms favouring sons in most of the Indian societies, it is essential to address the misconception that second and third trimester abortions are solely driven by sex selection motives. This paper also pointed out that there exists some influence of poverty, restricted access to facilities, and inadequate education as potential factors influencing abortions at a later gestational age.

There exists a significant knowledge gap related to second and third trimester abortions in India. It is evident that raising community awareness about the legal status of abortion in India is imperative, particularly considering PNDT act that may have suggested to some section of the society that all abortions are illegal, which is not the case.

Conclusion

This study underscores the intricate interaction of various factors that contribute to delayed pregnancy termination among women in India. Our findings indicate that women seeking termination due to health-related reasons, or economic constraints, are more likely to experience delays until the second or third trimester. To address these challenges, it is essential to expand the cadre of service providers. In expansion of provider base for medication method of abortion it should include non-allopathic doctors and qualified nurses who possess the necessary clinical skills, backed by appropriate training and supervision. As mifepristone–misoprostol gains prominence in abortion care, involving pharmacists and chemists in capacity-building and sensitization initiatives is necessary.

Despite the widespread knowledge and legal prohibition of prenatal sex determination and sex-selective abortion, sex selection remained a common reason for delayed pregnancy termination among married women in this study. Only profound social changes that focus on enhancing female autonomy, strengthening women's economic power, and elevating the value of the girl child are likely to significantly reduce the demand for sex-selective abortions. Conversely, women with prior contraceptive use, higher education levels, and those from wealthier households are less likely to face such delays. Regional disparities were evident, with women in southern and rural areas showing a greater likelihood of delayed terminations. Values clarification among health-care providers is essential to address the barriers that prevent the most vulnerable women from accessing necessary timely services. Engaging the teaching faculties of medical and nursing colleges in these initiatives is crucial, as they play a key role in influencing future generations of providers. Additionally, it is imperative to identify and regulate unsafe, illegal providers to ensure the delivery of timely safe and reliable abortion services.

India has the potential to significantly reduce morbidity and mortality associated with second trimester abortions through improved service delivery and access. To facilitate this change, it is crucial to enhance family planning services across the country, along with a national policy that prioritizes safe and timely abortion within the framework of women's sexual and reproductive rights. This holistic approach will ultimately enhance reproductive health outcomes and uphold women's autonomy in decision-making.

CRedit authorship contribution statement

Chander Shekhar: Writing – review & editing, Supervision, Conceptualization. **Harihar Sahoo:** Writing – review & editing,

Validation, Supervision, Methodology. **Labhita Das:** Writing – original draft, Formal analysis, Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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