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CLINICAL ARTICLE

Contraceptive behavior among women after abortion in Nepal ☆

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ABSTRACT

Objective: To investigate the timing of contraceptive use and estimate the discontinuation rates of temporary methods among women after abortion, or a live birth or stillbirth. *Methods:* A sample of married women with detailed pregnancy and contraceptive histories was analyzed in a population-based cross-sectional study based on calendar data extracted from the 2011 Nepal Demographic and Health Survey. Kaplan–Meier cumulative and discrete-time hazard models were used to estimate the timing of contraceptive use and discontinuation rates among users of temporary methods. *Results:* The final analysis sample included 3190 women. Of 684 women who had had an abortion, 298 (43.6%) had not initiated any contraceptive use in the 12 months afterwards. Women initiated contraceptive use significantly earlier after abortion (hazard ratio [HR] 2.25; 95% CI, 1.96–2.59; $P < 0.001$). The rate of discontinuation among contraceptive users was significantly higher in the post-abortion group (HR 1.32; 95% CI, 1.05–1.65; $P < 0.05$). Women who were educated, wealthier, had used contraceptives before the index pregnancy, had two sons and had autonomy initiated contraceptive use significantly earlier in the post-abortion period than their counterparts. *Conclusion:* Postabortion contraceptive use is low in Nepal. Postabortion family-planning counseling and related services should be strengthened with systematic monitoring and follow-up interventions.

1. Introduction

Women who have an abortion are generally motivated to use contraception and prevent subsequent unintended pregnancies [1]. An important factor that facilitates contraceptive use among these women may be their contact with a health facility, where safe abortion services, family-planning counseling, and contraceptive services are provided; such services are considered an integral part of the delivery of safe abortion services [2].

The number of contraceptive methods available at a particular setting may vary depending on how the services are organized. For example, abortion clinics managed and franchised by Marie Stopes International in many countries around the world provide almost all contraceptive methods in one place [3]. However, in other settings, family-planning and abortion clinics operate separately, and women are often referred to family-planning clinics for specific contraceptive methods. If the referral systems are weak or dysfunctional, then women are left with restricted choices and may not use contraceptives, even though they may be motivated to prevent an unintended pregnancy.

By contrast, in low-income countries, contraceptive uptake is generally low among most women who have recently given birth at home [4,5], even among those who access a health facility later for immunization services [6]. Furthermore, in countries where breastfeeding is the norm, many women may choose to abstain from using contraceptives for the first few months in the postpartum period [7,8]. It can be surmised that contraceptive use is lower in the immediate postpartum period than in the postabortion period; however, the difference in continuation of contraceptive use between the two groups of women may depend on when and what method is initiated.

Abortion became legal in Nepal in only 2002 [9]. The abortion law allows women to terminate unintended pregnancies, thereby making Nepal one of the 56 countries in the world to offer the procedure "without restriction as to reason" [10]. The law grants the right to voluntary termination of pregnancy to all women in Nepal, irrespective of marital status. The consent of the husband or guardian is not required if the woman seeking abortion is aged older than 16 years. A surgical abortion service was initiated in 2004 [11], and second trimester abortion was

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introduced in 2008 [12]. Medical abortion (mifepristone and misoprostol) was approved for use in 2009 [13]. Since 2004, more than 500 000 Nepali women have received safe abortion services, and two in five women were aware of the official abortion law in Nepal in 2011 [14,15].

Despite nearly a decade of implementation of a safe abortion program, little is known about postabortion contraceptive behavior dynamics in Nepal at a national level. The nexus between abortion and family planning is not well understood in Nepal and, more importantly, the linkage in services between abortion and family planning remains weak [15,16].

The timing and level of contraceptive use in the postabortion period are valuable indicators to monitor and evaluate the effectiveness of family-planning programs in Nepal and similar settings. The aim of the present study was to investigate the timing of contraceptive use and associated factors after abortion and post partum, and to examine the rates of discontinuation among women who initiated a temporary method after an abortion, or a live birth or a stillbirth.

2. Materials and methods

The present population-based cross-sectional study used unique contraceptive calendar data drawn from the 2011 Nepal Demographic and Health Survey (NDHS), which collected data on reproductive health, family planning, and relevant demographic and socioeconomic characteristics from 12 674 women aged 15–49 years. The NDHS was previously approved for ethical considerations, including informed consent procedures and data confidentiality [17], and data were collected from only the respondents who voluntarily consented to take part in the survey.

The NDHS data are available in anonymous format in the public domain for research use [18]. The response rate of women in the survey was 98.1%. Further details of sampling design and data collection procedures have been previously described in the national report [17]. The survey included a pregnancy and contraceptive calendar, and collected detailed monthly data on each pregnancy outcome and contraceptive use status for the 60 months immediately preceding the survey date.

To determine when contraception had been initiated (i.e. timing) and the rates of discontinuation, the present analysis considered the most recent pregnancy outcome, classifying women according to whether their last pregnancy ended in abortion, or a live birth or a stillbirth. Only currently married women were included in the analysis because childbearing in Nepal is mostly confined within marriage [19,20].

The underlying time variable to estimate the timing of contraceptive initiation post partum or after abortion was the duration in months since the last pregnancy outcome. As per the WHO guidelines, abortion users were considered to resume contraception immediately without any lag, whereas a 6-month lag for contraceptive initiation was allowed for postpartum women, taking into account the duration of postpartum abstinence and amenorrhea, including exclusive breastfeeding [21,22]. In the present study, the outcome event was the initiation of a modern or traditional method of contraception.

The unadjusted rates of contraceptive use were estimated using Kaplan–Meier cumulative hazard plots, stratified by whether the index (last) pregnancy outcome was a live birth or a stillbirth, or an abortion. Discrete-time hazard models were fitted to determine the timing of contraceptive use post partum or after abortion, controlling for demographic and socioeconomic characteristics including respondent's age, parity, contraceptive use before the index pregnancy, sex composition of children, wife's and husband's education, migration status of husbands, female autonomy, household wealth, developmental zone, and ecologic regions. Household wealth was a composite measure of living standards derived by principal component analysis [23]. Female empowerment was a dichotomous variable that took into account whether the woman made any decisions, including about purchase of major household goods, her own health care, and visits to family and relatives [17].

Contraceptive discontinuation was defined on the basis of whether or not a woman was still using the same (temporary) method since initiating use after the pregnancy outcome. Women who started using permanent methods were excluded from the analysis, because their hazard of discontinuation was zero. Method switching occurred rarely in the calendar data, and hence was not considered in the analysis.

Statistical analysis was conducted via Stata version 12.0 (StataCorp, College Station, TX, USA). Cumulative survival rates of contraceptive use were fitted, and then hazard models were estimated with two primary predictors of interest—status of last pregnancy outcome (abortion/live birth or stillbirth) and type of method used (modern/traditional)—adjusting for relevant characteristics similar to those identified in the previous model. The nonparametric specification of the baseline hazard of discontinuation provided a best fit for the selected models, based on likelihood tests, pseudo-R^2 and Akaike Information Criterion diagnostics. The analyses used sample weights and, where appropriate, selected variables were screened for potential multicollinearity problems via a priori bivariate measures of association between predictor variables.

3. Results

The respondents who reported being divorced, separated, or widowed (n = 377) were excluded from the analysis. Of the 9457 currently married women, the analysis further excluded: 4958 women who had not given birth in the 60 months preceding the survey date, 884 inconsistent cases with void records of pregnancy or contraceptive events within the contraceptive calendar (noninformative) and 425 women who had a pregnancy outcome in the past 3 months because these women had little exposure to contraceptive use. Therefore, the final analysis sample included 3190 women with detailed pregnancy and contraceptive histories, of whom 684 were in the postabortion group and 2506 in the postpartum group. A total of 298 (43.6%) women in the postabortion group reported not using a method for 12 months after an abortion, compared with 1665 (66.4%) women in the postpartum group.

Overall, among the 386 women who initiated a method within the first 12 months after an abortion, 109 (28.2%) reported using injectable contraceptives, 78 (20.2%) oral pill, 13 (3.4%) intrauterine device, 14 (3.6%) implants, 73 (18.9%) condoms, 77 (19.9%) a traditional method (which mainly relied on withdrawal [63, 16.3%]), and 22 (5.7%) female sterilization. Owing to the small sample size, the survival curves were not disaggregated by all methods, except for injectable method users. The method mix patterns were slightly different for the postpartum group. Among the 841 women who initiated a method within the first 12 months after a live birth or stillbirth, 333 (39.6%) reported using injectable contraceptives, 136 (16.2%) condoms, 130 (15.5%) a traditional method, 124 (14.7%) oral pill, 80 (9.5%) female sterilization, 22 (2.6%) intrauterine device, and 16 (1.9%) implants.

Contraceptive uptake was generally more rapid among abortion users, with a steady increase in the months immediately following the termination (Fig. 1). Approximately 45% of women who had an abortion reported initiating use at 3 months; this increased to approximately 50% at 4 months (Fig. 1). In contrast, contraceptive uptake for postpartum women was initially slow and then gradually increased (Fig. 1). Less than one-fifth of women had initiated contraceptive use 6 months after a live birth; this value increased modestly to approximately one-third at 12 months (Fig. 1).

The adjusted hazard ratios of contraceptive initiation among the postpartum and postabortion groups (Table 1) confirmed the patterns seen in Fig. 1. Initiation of contraceptive use was twice as likely for women after abortion than for those who had a live birth ($P < 0.001$) (Table 1). Older women, particularly those aged 30–34 years, were significantly more likely to initiate contraceptive use than were women aged 15–24 years (Table 1). Higher parity women were inclined to initiate contraception more rapidly, although the difference between nulliparous and parous women was not significant (Table 1).