

## **Do abortion users exhibit better contraceptive behaviour? Evidence from Nepal**

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### **Abstract**

The government of Nepal introduced Comprehensive Abortion Care (CAC) in March 2004 along with concerted efforts to improve access to modern contraception. An integral component of CAC is post-abortion contraceptive care including counselling services. To date, there is no national level evidence on post-abortion contraceptive uptake in Nepal. More importantly, the interaction between abortion care and family planning is poorly understood in Nepal where abortion interventions are widely discussed in policy arena. There is also a concern that medical abortion program is promoted too aggressively in Nepal such that potential contraceptive users may have begun to opt for a 'quick and easy fix' thus essentially substituting abortion for contraception. Using the contraceptive calendar data drawn from the 2011 Nepal Demographic and Health Survey, this research investigates the level of contraceptive use before and after an abortion and examines the timing and determinants of post-abortion contraceptive use comparing women who had a live or still birth. Additional analysis focuses on the rates of discontinuation among users of post-abortion contraceptive method. The research is conceptualised based on the hypothesis that women who experience an abortion are generally found to be more motivated than their counterparts to use contraception in the post-abortion period.

In Nepal, after a long-period of relatively stable high fertility (a life time-birth of around 6 per woman, Feeney *et al.* 2001, Retherford and Thapa 1999) fertility transition begun in the 1980s, when desired family size declined from 4 per woman to in the previous decades to 3.5 in the mid-1980 (Thapa *et al.* 1994). In subsequent years, the transition took a more rapid pace such that by 2011 the desired family size stood at just over 2 among married women (Ministry of Health and Population, New ERA, ICF International Inc 2011). As a corollary, current use of contraception increased from 28.5% in 1996 to 49.7% in 2011 (among currently married women of reproductive age, 15-49), indicating a 21.2 percentage points or 1.4 percentage point change annually over the last 15 years. During the same period, the percentage of women with unintended- unwanted or mistimed- pregnancy stood at 37.3% in 1996 and it declined to 25.7% in 2011. Thus, although there has been some decline in unintended pregnancy (most likely due to increasing contraceptive use), still in 2011 fully quarter of all currently married women of reproductive age had an unintended pregnancy in the county. The actual level of unintended pregnancy could, in fact, be much higher, as the retrospectively collected data on unintended pregnancy are known to be as much as 11.5% downwardly biased (Koenig *et al.* 2006). If we applied the same adjustment factor, it would indicate that nearly 2 of every 5 pregnancies (37.2%) is unintended in Nepal. The government of Nepal introduced Comprehensive Abortion Care (CAC) in March 2004 to reduce the rate of unintended pregnancy, along with concerted efforts to improve access to modern contraception (Thapa, 2004). An integral component of CAC is post-abortion contraceptive counselling and related services. However, to date there is no national level evidence on post-abortion contraceptive uptake in Nepal. More importantly, the interaction between abortion care and family planning is poorly understood in Nepal, where abortion policies and interventions have received considerable attention in recent years. There is also a policy concern that medical abortion program is promoted too aggressively in Nepal such that potential contraceptive users may have begun to opt for a 'quick and easy fix' this essentially substituting abortion for contraception. The fact that medical abortion is now easily available in the country makes access to abortion even more convenient, fuelling the debate.

This research investigates the extent of contraceptive use before and after an abortion and further examines the timing and determinants of post-abortion contraceptive use comparing women who have had a natural or still birth. Additionally, the paper considers analysis of method discontinuation rates among those who had used a method after an abortion or a live birth. The study makes use of the contraceptive calendar data drawn from the 2011 Nepal Demographic and Health Survey (NDHS) which recorded detailed retrospective data on pregnancy outcomes and contraceptive histories for the five years preceding the survey. It is hypothesised that women who experience an abortion are more motivated than their counterparts to use contraception in the post-abortion period. This research addresses three key research questions.

1. How does contraceptive use prior to pregnancy vary between women who have an abortion and those who have a live birth?
2. Do women who have an abortion start contraceptive use more rapidly in the post-abortion period than those who did not have an abortion?
3. Do women who have an abortion less likely to discontinue a contraceptive method in the post-abortion period, compared to those who did not have an abortion?

The proposed research addresses a critically important reproductive health issue in Nepal and contributes to a better scientific understanding of contraceptive use dynamics in abortion care hitherto not systematically analysed at the national level.

## **Abortion context in Nepal**

Two years after abortion liberal law was passed in Nepal in 2002, the government provided access to CAC in response to protecting women's rights to have safe motherhood and better reproductive health (GoN, DoHS, FHD et al. 2006; Thapa 2004). Ever since the legalization of the procedure, abortion services have spread across the country to about 286 clinics by 2009 (Thapa and Sharma, 2012; Puri et al. 2012). More than one third of women in Nepal reported of having heard of the legal status of abortion and more than half of women reported that they knew where to obtain abortion services (Thapa and Sharma, 2012). There is also evidence of better access and quality of care for abortion care across Nepal in a relatively short period of time (Samandari et al. 2012).

Recent research show increasing use of abortion especially multiple or repeat procedures suggesting abortion as a potential substitute for modern family planning methods (Thapa and Neupane, 2012). On the other hand, modern contraceptive use which increased from 26% in 1996 to 44% in 2006 showed a reversal trend around 43% in 2011 (MoHP, New Era and ICF, 2012). There is, however, evidence to suggest that increase in contraceptive prevalence can have a measurable impact in reducing unwanted pregnancies and abortions (Serbanescu, Stupp and Westoff, 2010; Bongaarts and Westoff, 2000). Contraceptive use trends are discouraging in Nepal where both unmet need is high especially among young couples, and alongside, the number of sexually active unmarried young people has increased considerably in recent years (MoHP, New Era and ICF, 2012). Unfortunately, little is known about contraceptive use in the post-abortion period in Nepal especially at the national level. However, evidence from other countries, including India, show poor uptake of method use and discontinuation rates after an abortion (Zavier and Padmadas, 2012; Cheng et. 2004).

## **Data and sample selection**

This analysis makes use of the contraceptive calendar data from the 2011 Nepal Demographic and Health Survey. The contraceptive calendar provides high quality data of pregnancy histories, contraceptive use, switching and discontinuation and pregnancy outcomes including live birth and abortion for the 70 months preceding the survey date (MoHP, New Era and ICF, 2012). Although the data requirements for the contraceptive calendar are intensive for respondents, contraceptive calendars remain the most reliable means of collecting retrospective information (Strickler et al. 1997, Becker and Sosa, 1992).

The analysis considers the most recent pregnancy outcome, a birth or an abortion within the contraceptive calendar, to overcome potential bias and recall errors associated with events on the other extreme of the calendar. Only married women are included in the analysis since the data on pregnancy and contraceptive histories are recorded only for married women. It is often difficult to collect reliable pregnancy related data from unmarried women due to social and cultural taboos attached to childbearing outside marriage. According to the NDHS data, currently married women constitute about 75% of the overall sample (MoHP, New Era and ICF, 2012). Sexual activity outside of marriage is rare in Nepal; less than 1% of never married women reported having had sex. Women who reported to have been ever or formerly married, the vast majority reported no recent sexual activity. These women comprise just over 3% of the total sample. To ensure consistency and quality of survey responses, we included only women who reported currently in marital. In Nepal, spousal separation due to economic migration is quite common. Previous evidence in other settings suggest that migration and fertility behaviour are closely related (Clifford, 2009). The household data of the

NDHS enable to decode information about the timing of spousal separation, which will be incorporated into the final analysis.

## **Method**

Each research question is addressed separately. RQ 1 is assessed via a logistic regression. The response variable is whether the most recent pregnancy ended in abortion or live birth. The primary predictor variable is the type of method used and user status 2 months prior to the pregnancy. Other control variables considered include age of woman, educational attainment, residence, wealth quintile and ecological zones. These variables have been shown to influence abortion decision making in other social settings (Westoff, 2000, 2005). In addition, women's ethnicity is considered based on an extended listing of different ethnic groups (Bennett et al. 2008).

RQ 2 is addressed using a discrete-time hazard model, where the response variable is defined as the timing of contraceptive use after an abortion or birth, in order to evaluate whether contraceptive use is more rapid among abortion users when compared with those who had a live birth. The exposure is defined as 3 months after the event to account for the fact that women have no motivation to use contraception during the postpartum infecund period or until their menstrual cycle has not resumed (Curtis, 1996). We then follow the women for the next 30 months until they start using a contraceptive method or until they are censored. The same set of control variables are employed.

To address RQ3, we use a discrete time competing risk hazard model. This model assesses the duration from postpartum contraceptive use until discontinuation. We disaggregate the discontinuations by the reason for discontinuation, which allows us to distinguish between discontinuation consistent with a woman's fertility desires and those which are due to programmatic failures. The reasons for discontinuation include: wanting to become pregnant, medical reason/side effects, no reason to use method (menopausal, husband away) became pregnant (contraceptive failure) or the method was not convenient (could not get hold of the method). These are modelled in a competing risk framework. From a policy perspective, the last two reasons are the most important, as the woman could still potentially wish to avoid pregnancy but is unable to do so. These discontinuations are modelled as competing risks: the woman can potentially experience any one of these discontinuations (depending on her characteristics). The controls previously outlined are included.

## **Preliminary findings**

The predicted probability of a pregnancy ending in abortion disaggregated by type of method used before pregnancy is presented in Figure 1. It is clear that women who have not been using a method have a low probability of terminating the pregnancy suggesting that they are determined to give a birth. On the other hand, users have a higher probability of aborting the pregnancy especially those who rely on withdrawal or oral pill. The statistical association between high use of withdrawal and contraceptive failure has been reported elsewhere (Trussell, 2008) or in explaining repeat abortions (Westoff, 2000; 2005).

Turning to RQ2, women who use abortion seem to be slower to start using a contraceptive following an abortion than women who had a live birth. In the hazard model, controlling for other factors,

women who had an abortion have a hazard only 51% (95% CI: 37%-71%) that of women who had a live birth. This result is significant at 1% significance. Predicted survival curves (the proportion of women yet to adopt a contraceptive following pregnancy) of contraceptive uptake in the months following abortion/birth are presented in figure 2. This shows that women who had an abortion tend to resume contraceptive use at a slower rate than women who had a live birth after pregnancy.

Further work will address the third research question, the influence of abortion behaviour on contraceptive discontinuation. We expect that women who use abortion will be more likely to discontinue contraceptive use than women who have live births. In particular, we expect that women who use abortion will be more likely to discontinue due to contraceptive failure or because the not convenient. Additionally, future analyses will provide a detailed incorporating the effect of spousal separation.

Figure 1: Predicted probabilities of pregnancy ending in abortion by method used prior to pregnancy

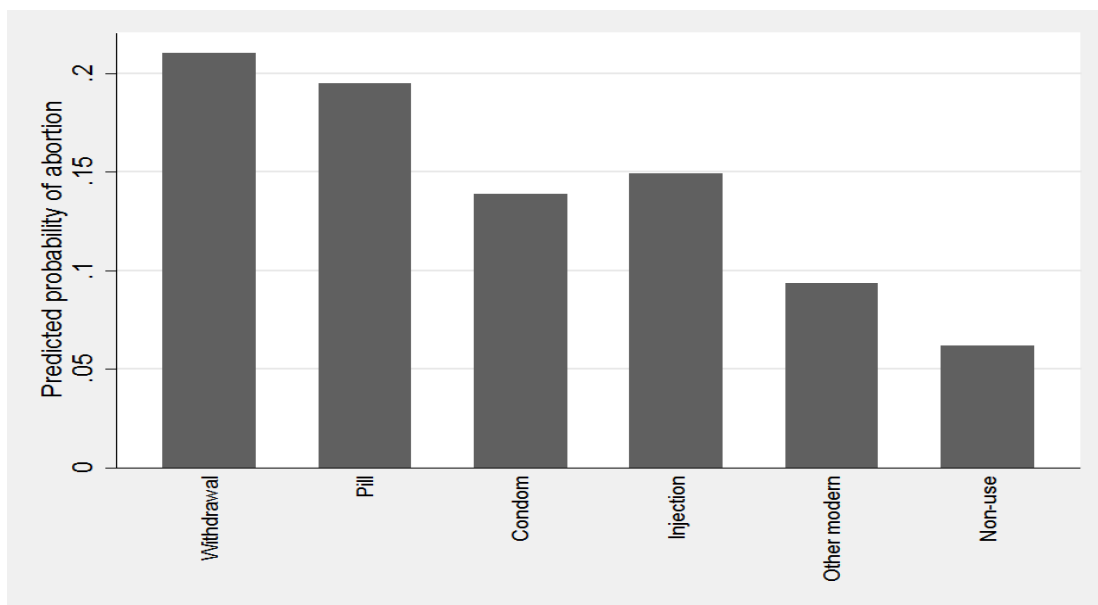
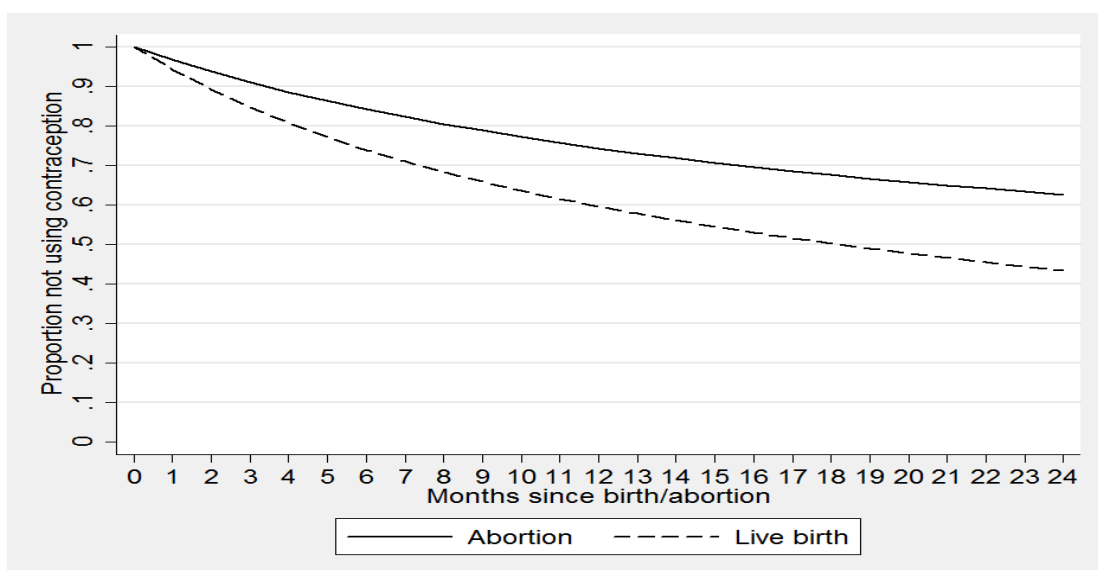


Figure 2: Predicted survival curves by outcome of previous pregnancy



## References

- Becker, S. and Sosa, D. (1992). An experiment using a month-by-month calendar in a family planning survey in Costa Rica. *Studies in Family Planning*. 23(6): 386-391.
- Bennett, Lynn, Dilli Ram Dahal and Pav Govindasamy, 2008. *Caste, Ethnic and Regional Identity in Nepal: Further Analysis of the 2006 Nepal Demographic and Health Survey*. Calverton, Maryland, USA: Macro International Inc.
- Bongaarts, J. and Westoff, C.F. (2000). The potential role of contraception in reducing abortion. *Studies in Family Planning*. 31: 193–202.
- Cheng, Y., Gno, X., Li, Y. et al. (2004). Repeat induced abortions and contraceptive practices among unmarried young women seeking an abortion in China. *International Journal of Gynecology and Obstetrics*, 87(2): 199–202.
- Clifford, D. (2009) Spousal separation, selectivity and contextual effects: exploring the relationship between international labour migration and fertility in post-Soviet Tajikistan. *Demographic Research*. 21 (32): 945-975.
- Curtis, S.L. (1996). The impact of postpartum redundant use of contraception on contraceptive failure rates. *Demography*. 33(1): 24-34.
- Feeney G, Thapa S, and Sharma KR (2001) One and a half centuries of demographic transition in Nepal, *Journal of Health, Population and Nutrition*, 19(3):160-166
- GoN, DoHS, FHD, WHO and CREHPA (2006). Unsafe abortion, Nepal country profile 2006. Kathmandu, Nepal: GoN/DoHS/FHD/WHO/CREHPA.
- Koenig, MA, Acharya R, Sing S, Roy TK, (2006) Do current measurement approaches underestimate level of unwanted childbearing? Evidence from rural India, *Population Studies* 60(3): 243-256.
- Ministry of Health and Population, New ERA, ICF International Inc. *Nepal Demographic and Health Survey 2011*. Kathmandu, Nepal: Ministry of Health and Population, New ERA, and ICF International, Calverton, Maryland, 2012.
- MoHP (Ministry of Health and Population Nepal), New ERA, and ICF International Inc. (2012). *Nepal Demographic and Health Survey 2011*. Kathmandu, Nepal: Ministry of Health and Population, New ERA, and ICF International, Calverton, Maryland.
- Puri, M., Lamichhane, P., Harken, T. et al. (2012). "Sometimes they used to whisper in our ears": health care workers' perceptions of the effects of abortion legalization in Nepal. *BMC Public Health*. 20(12): 297.
- Retherford RD and Thapa S, (1999) The trend of fertility in Nepal, 1961-1995, *Genus*, 3-4:61-97
- Samandari, G., Wolf, M., Basnett, I. et al. (2012). Implementation of legal abortion in Nepal: a model for rapid scale-up of high-quality care. *Reproductive Health*. 9(7): 1-11.

- Serbanescu, F., Stupp, P. and Westoff, C. (2010) Contraception matters: two approaches to analyzing evidence of the abortion decline in Georgia. *International Perspectives on Sexual and Reproductive Health*. 36(2): 99-110.
- Strickler, J.A., Magnani, R.J., McCann, H.G. et al. (1997). The reliability of reporting of contraceptive behavior in DHS calendar data: evidence from Morocco. *Studies in Family Planning*. 28(1): 44-53.
- Thapa S, Pandey KR, Family Planning in Nepal: An update, *Journal of Nepal Medical Association*, 1994, 32:131-143.
- Thapa, S. (2004). Abortion law in Nepal: The road to reform. *Reproductive Health Matters*. 12(24 Suppl): 85-94.
- Thapa, S. (2012). Women's awareness of liberalization of abortion law and knowledge of place for obtaining services in Nepal. *Asia Pacific Journal of Public Health*. 20(10): 1-9.
- Thapa, S. and Neupane, S. (2012). Risk factors for repeat abortion in Nepal. *International Journal of Gynecology and Obstetrics*. Published online (doi: 10.1016/j.ijgo.2012.07.016).
- Trussell, J. (2008) The essentials of Contraception, Efficacy, Safety, and Personal Considerations *Contraceptive Technology (18<sup>th</sup> Edition)* Hatcher, R., Trussell, J., Stewart, F., Nelson, A.L., Cates, W., Guest, F., Kowal, D., New York, Ardent Media.
- Westoff, C. (2000). The substitution of contraception for abortion in Kazakhstan in the 1990s. DHS Analytical Studies No 1. Calverton, Maryland: ORC Macro.
- Westoff, C. (2005) Recent trends in abortion and contraception in 12 Countries. DHS Analytical Studies No 8. Calverton Maryland, ORC Macro.
- Zavier, F and Padmadas, S.S. (2012). Post-abortion contraceptive use and method continuation in India. *International Journal of Gynecology & Obstetrics*. 118(1): 65-70.