Extended abstract

The contraceptive use behaviour before and after unintended birth in Colombia and Peru: does it change?

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As prepared for the European Population Conference 2016

1. Background

Colombia and Peru are two Latin American countries which entered a stage of fertility transition where TFR declined close to replacement level. At the same time, despite substantial increases in the contraceptive prevalence rates, in both of the countries high levels of unintended childbearing persist. Compared to other world regions, Latin America has been historically standing out as having distinctively high level of unintended fertility. In Colombia the proportion of births reported as unintended increased in the last 20 years from 35 to 55%, in Peru it has been stable at a high level of 55% (Measure DHS 2015). Moreover, the levels of repeated unintended births in the region are substantial (Gomes 2012).

Contraceptive use has been widely studied as a determinant of unintended childbearing, but little is known about the contraceptive behaviour in the postpartum period after unintended birth. Even less is known about whether the contraceptive use behaviour after birth differs from that before unintended pregnancy. Consequently, the knowledge about the existence of change in the contraceptive practices after unintended birth experience is virtually absent. Yet the contraceptive use in the postpartum period is an important determinant of birth intervals and subsequent unintended childbearing (Yeakey et al. 2009, Tocce et al. 2012). Moreover, there is currently no evidence on the topic from low and middle income countries where the levels of unintended fertility are highest.

The understanding of the contraceptive use behaviour in relation to unintended birth is limited and current evidence comes only from the US. Orcutt and Cooper (1997) examined the change in the contraceptive

practice after unintended birth among teenagers in New York. According to the results, adolescents who reported an unintended birth did not improve their contraceptive behaviour (both in terms of any method use and effectiveness), compared to teenagers without unintended pregnancy experience. Moreover, they were poorest contraceptive users both before pregnancy, as well as afterwards. Authors suggest that the factors related to lack of change in the studied behaviour might encompass cultural or structural barriers to contraceptive use (e.g. accessibility or persistent health concern issues). It might also be related to the lack of change in the motivation to avoid pregnancy or combination of both explanations. Although advancing the knowledge on the topic, this study is limited in terms of geographical location and examined population subgroup (study of 466 teenagers in years 1989-1990 in one city in the US). Currently, there is no analysis which uses nationally representative data on contraceptive histories. Recent examination of these processes is also lacking, as well as evidence outside of the high income countries' context.

2. Research aims

This study aims to examine whether the experience of unintended birth is associated with the contraceptive use behaviour change in Colombia and Peru. First, the relationship between the pre-pregnancy and postpartum contraceptive use is investigated. This is followed by the examination of how the studied relationship differs between women who reported an unintended and wanted then birth. This allows for the comprehensive analysis and interpretation of contraceptive method switching in relation to the experience of unintended birth. Moreover, examination of the contraceptive use dynamics in relation to unintended childbearing in Colombia and Peru aims at providing insights into how the studied processes differ in countries representing two distinct contraceptive mix regimes. While the method mix in Colombia is mainly focused on limiting, permanent methods, in Peru the spacing, traditional methods dominate.

3. Data and Methods

This study uses nationally representative Demographic and Health Survey data: CDHS 2010 for Colombia and PDHS 2012 for Peru. It utilizes the reproductive calendar module which provides monthly longitudinal information about reproductive events for each individual during five years prior to the survey: births, pregnancies and monthly contraceptive use. For the purpose of this study the reproductive calendar is merged with maternity histories which include information about the birth intention status, breastfeeding, sexual activity and postpartum amenorrhea, as well as maternal health services utilization. In this study the DHS retrospective birth intention status definition is used. Births are classified as "wanted then" if a woman reported that at time of pregnancy she wanted to become pregnant. Conversely, if a woman provided an answer that she wanted to become pregnant later or not at all, the birth is classified as "unintended"

(MEASURE DHS, 2013). The contraceptive practice before pregnancy refers to the last episode of contraceptive use, if any, during five months before pregnancy. Contraceptive use after birth is specified as the first method initiation during the twelve months after birth. This is following WHO classification of the extended postpartum period referring to a year after birth (WHO, 2013).

The transition matrices and discrete-time competing-risk hazard models are applied to examine the transitions between the last method used before pregnancy and first method adopted after birth. Method use before and after birth is classified into four categories according to the increasing level of effectiveness: (i) non-use, (ii) traditional and barrier methods, (iii) pills and injections, (iv) IUDs and implants for the pre-pregnancy use and IUDs, implants and sterilization for the after-birth use.

In addition to transition matrices examination (as in Table 1 for Colombia and Table 2 for Peru), the multivariate analysis will be conducted. This will be done in order to study the risk of making a given type of contraceptive use related transition and accounting for women's socioeconomic and demographic characteristics, postpartum period behaviour and use of maternal health care services. The models will make it possible to examine whether the differences in the contraceptive transitions between methods and birth intention status groups are statistically significant. The main explanatory variable in the model will be the contraceptive use before conception and birth intention status. The model will be a way to assess how the first method initiation in the postpartum period is related to the contraceptive behaviour before pregnancy, and how the processes differ according to a method type and birth intention status. In order to examine the latter, the model with an interaction term between the birth intention status and pre-pregnancy contraceptive method used will be fitted.

4. Preliminary results

Tables 1 and 2 present the transition matrices depicting the distribution of contraceptive methods used after birth, given a method used before pregnancy, if any, by birth intention status. In both countries, among women who reported a birth wanted then after method use, the majority goes back to the same method as used before pregnancy (except for traditional and barrier methods users in Colombia and IUDs and implants users in Peru[1]). If they change a method, they tend to change it to a more effective one than the one used before pregnancy (light yellow area). This is particularly pronounced for the least effective method users before pregnancy. However, the pattern is not observed for previous pills and injections users in Peru; when switching a method, they overwhelmingly turn to methods of lesser effectiveness. This reflects the fact that the most effective methods constitute a very small proportion of the method mix there.

[1] The results in the transition matrices for Peru for previous IUDs and implants users need to be interpreted with caution as small proportion of women used these methods before pregnancy (0,9% for women who reported a birth wanted then and 0,3% for women who reported an unintended birth).

Comparison between the upper and bottom tables for each country reveals that the patterns of use before pregnancy and after birth differ by birth intention status. Women who reported an unintended birth after method use are more likely to transition to more effective methods after birth, compared to the method used before pregnancy, than women who reported a birth wanted then. For example in Peru, 58% of traditional and barrier methods users before wanted then pregnancy used the same method after birth and 29% of women turned to more effective methods. For women who reported an unintended birth, 43% turned to the same method after birth, while 41% turned to methods of higher effectiveness. This might suggests that women who experienced an unintended birth might look for alternative methods after delivery, for example due to dissatisfaction with previously used methods. Similarly as among women who reported a birth wanted then, if women change the method after unintended birth, they are more likely to turn to more effective, rather than less effective methods. This is again except for previous pills and injections users in Peru. Among previous IUDs and implants users in both countries, there is a bigger shift to less effective methods after unintended birth than used before pregnancy, compared to women who reported a birth wanted then[1].

Transition matrices show that there exists a more distinct pattern of method change for women who reported an unintended birth, however, not for previous non-users. In general, for both birth intention status groups, women who did not use contraception before pregnancy are most likely of all women to stay non-users also after birth. This pattern is more pronounced among women who reported an unintended birth: they are more likely not to use contraception after birth in both countries. Tables show that 30% of women in Colombia and 26% of women in Peru who did not use contraception before unintended pregnancy kept not using any method after birth. This is an important finding as it means that up to one third of women who reported their last birth as unintended might be at risk of subsequent pregnancy and short inter-pregnancy intervals.

These processes will be further explored using hazard models which will allow to account for women's characteristics and test whether the differences in the contraceptive method transitions between the birth intention status groups found in the transition matrices are statistically significant.

Table 1: Distribution of methods used after birth, given a method used before pregnancy, by birth intention status, Colombia (%)

wanted then	non-use	traditional/barrier	pills/injections	IUDs/implants/sterilization	Total
non-use	21.8	17.4	35.7	25.2	100.0
traditional/barrier	13.5	45.4	21.3	19.8	100.0
pills/injections	10.2	13.1	50.9	25.8	100.0
IUDs/implants	7.3	9.7	22.3	60.7	100.0
Total	17.5	20.4	36.1	26.1	100.0

unintended	non-use	traditional/barrier	pills/injections	IUDs/implants/sterilization	Total
non-use	30.3	13.4	31.5	24.8	100.0
traditional/barrier	14.7	33.1	27.1	25.1	100.0
pills/injections	12.2	13.1	41.1	33.6	100.0
IUDs/implants	11.1	12.3	25.3	51.2	100.0
Total	21.7	17.6	32.8	27.9	100.0

Source: Author's calculations from individual datasets, CDHS2010

Table 2: Distribution of methods used after birth, given a method used before pregnancy, by birth intention status, Peru (%)

wanted then	non-use	traditional/barrier	pills/injections	IUDs/implants/sterilization	Total
non-use	18.5	31.1	45.5	5.0	100.0
traditional/barrier	13.2	58.2	23.7	4.8	100.0
pills/injections	7.1	19.6	69.3	4.1	100.0
IUDs/implants	4.8	23.8	42.9	28.6	100.0
Total	15.1	37.1	42.8	5.0	100.0

unintended	non-use	traditional/barrier	pills/injections	IUDs/implants/sterilization	Total
non-use	26.2	20.6	47.3	5.9	100.0
traditional/barrier	16.4	43.1	35.7	4.8	100.0
pills/injections	10.7	21.6	59.7	7.9	100.0
IUDs/implants	10.0	30.0	60.0	0.0	100.0
Total	18.4	31.6	44,2	5.8	100.0

Source: Author's calculations from individual datasets, PDHS2012

5. References

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