

Original research article

The relationship of age and place of delivery with postpartum contraception prior to discharge in Mexico: A retrospective cohort study

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Abstract

Objectives: To test the association of age (adolescents vs. older women) and place of delivery with receipt of immediate postpartum contraception in Mexico.

Study design: Retrospective cohort study, Mexico, nationally representative sample of women 12–39 years old at last delivery. We used multivariable logistic regression to test the association of self-reported receipt of postpartum contraception prior to discharge with age and place of delivery (public, employment based, private, or out of facility). We included individual and household-level confounders and calculated relative and absolute multivariable estimates of association.

Results: Our analytic sample included 7022 women (population, $N=9,881,470$). Twenty percent of the population was 12–19 years old at last birth, 55% aged 20–29 and 25% 30–39 years old. Overall, 43% of women reported no postpartum contraceptive method. Age was not significantly associated with receipt of a method, controlling for covariates. Women delivering in public facilities had lower odds of receipt of a method (Odds Ratio=0.52; 95% Confidence Interval (CI)=0.40–0.68) compared with employment-based insurance facilities. We estimated 76% (95% CI=74–78%) of adolescents (12–19 years) who deliver in employment-based insurance facilities leave with a method compared with 59% (95% CI=56–62%) who deliver in public facilities.

Conclusion: Both adolescents and women ages 20–39 receive postpartum contraception, but nearly half of all women receive no method. Place of delivery is correlated with receipt of postpartum contraception, with lower rates in the public sector. Lessons learned from Mexico are relevant to other countries seeking to improve adolescent health through reducing unintended pregnancy.

Implications: Adolescents receive postpartum contraception as often as older women in Mexico, but half of all women receive no method.

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Keywords: Mexico; Postpartum contraception; Adolescents; IUD

1. Introduction

Short interpregnancy interval is a known risk factor for poor maternal and infant health outcomes worldwide [1–4]. Adolescent women (<20 years old) are at increased risk of poor obstetric outcomes [5] and are at high risk of rapid repeat pregnancy (defined as a pregnancy within 2 years of a

previous pregnancy) [6]. Postpartum contraception is a key strategy to prevent rapid repeat pregnancy [7–9].

To be most effective, postpartum contraception should be provided prior to leaving place of delivery [6]. For many women, especially in low- and middle-income countries, the next health care encounter may only happen with the next pregnancy [10,11]. The traditional approach of waiting to discuss and provide contraception until the 4–8-week postpartum visit may be too late, and adolescents may be at even higher risk of loss to follow-up and subsequent unintended pregnancy than older women [6].

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Reducing adolescent births [12,13] and disparities in access to and use of contraceptive methods are health policy priorities in Mexico [14]. National population policy supports access to contraception for all women, including promoting postpartum contraception provision [15]. There were over 2.2 million births in Mexico in 2014 [16], 19% of which were to adolescents [17]. Postpartum sterilization is common in Mexico [18] and is a very effective contraceptive method for women who have achieved desired family size. Adolescents and young women, however, may desire more children in the future and need additional contraceptive options.

Insertion of an intrauterine device (IUD) immediately postpartum is safe and has been studied in diverse cultural and health care settings [19,20]. Provider and cultural biases, however, persist and may limit the use of IUDs by adolescents [21] and/or immediate insertion following delivery [6]. Previous descriptive reports in Mexico suggest that adolescents are at higher risk of leaving place of delivery without contraception [18].

We examined whether age at last birth (women aged 12–19 vs. 20–29 and 30–39) or place of delivery is associated with receipt of any postpartum contraception and, in particular, whether these factors are associated with IUD use. We hypothesized that older women would have higher odds than adolescents of receiving any contraceptive method overall, and the IUD in particular, but that odds would not be significantly different by type of facility.

2. Methods

2.1. Data and sample

We used the 2012 National Health and Nutrition Survey (Encuesta Nacional de Salud y Nutrición, ENSANUT), a nationally representative survey (at the state level and by rural/urban stratum; $n=194,758$ individuals, population $N=115,170,278$; 87% of households responded) [22,23]. The ENSANUT is a face-to-face household survey undertaken approximately every 5 years to assess population-level health in Mexico. Population pyramid estimates derived from the ENSANUT are identical to those based on census data, supporting the representativeness of the ENSANUT. Women residing in the household who report a live birth during the 6 years prior (2006–2012) are asked a series of questions about their prenatal and delivery care experiences. The 2012 ENSANUT is the first year to include data on immediate postpartum contraception. We used the household, adult (20 years and over) and adolescent (12–19 years) modules. We included women who reported a live birth in the previous 5 years and were aged 12–39 at the time of delivery. All participants provide informed consent at the time of survey data collection. This study was approved by the Comité de Ética en Investigación (Research Ethics Committee) at the National Institute of Public Health, Cuernavaca, Mexico (October 2, 2014, CI:1258, No. 1576).

2.2. Outcome variables

We focused on two primary binary outcomes: self-reported receipt of any modern postpartum contraceptive method prior to leaving place of delivery and receipt of an IUD. We collapsed contraceptive methods into sterilization, IUD/implant, hormonal method, barrier method, or none. We focused solely on IUD as our second outcome due to the extremely low prevalence of implants in this population (1% of the survey sample).

2.3. Independent variables

Our key independent variables are age and place of delivery. We grouped women into three groups based on age at last birth (12–19, 20–29, 30–39 years old). Place of delivery was classified as employment-based, public, private or out of facility (see Fig. A1).

We included several household-level variables in our analysis. We created an indicator of household wealth with an asset index collapsed into deciles. We developed the asset index using factor analysis and based upon household characteristics and possessions [24]. We classified households as rural (<2500 inhabitants) or not and created an indicator of enrolment in the *Oportunidades* conditional cash transfer program [24], an indicator of poverty. We included indigenous status, measured by whether anyone in the household speaks an indigenous language [25]. The 32 Mexican states were collapsed into six regions by socioeconomic level [26].

We included the woman's level of education by calculating educational gap — the difference between the number of years of schooling expected based on age (up to 12 years of schooling total) and the number reported. This measure of years of school missed allows us to compare adolescents, who may still be in school, with adults who have finished schooling. We created a categorical variable (0 years missed, 1–3, 4–6, 7–9, 10+). We included health insurance (public, employment based or none); in Mexico, health facility types are highly correlated with type of insurance, but the overlap is not complete (see Fig. A1).

We included health care utilization and obstetric history and outcomes variables, which may be correlated both with age and uptake of postpartum contraception. We examined gravidity as a continuous and categorical (1–2, 3–5, 6+) variable, whether the woman received her first prenatal visit during the first trimester and whether 75% of a list of 11 prenatal processes of care (such as weight and height measurement and glucose tolerance and syphilis testing) were completed. We included mode of delivery (vaginal, planned cesarean, urgent cesarean) and whether the woman reported any type of complication with delivery. We tested models including marital status, but results were unchanged, and we excluded this variable from our final analysis. Our sample includes only women who have given birth; they have thus all been sexually active, and marriage as a proxy for sexual activity is not relevant.

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