

ASSOCIATIONS BETWEEN POSITIVE BIRTH EXPERIENCES AND FUTURE PREGNANCY INTENTIONS

Extended abstract (4 pages)

Theoretical focus

Studies show that the desirability of the pregnancy (i.e., whether it was planned or not) can contribute to positive outcomes in prenatal care, birth, and child care (Nelson et al. 2022; Hall et al. 2017). For example, women who become pregnant without planning often discover the pregnancy when it's already advanced, delaying the adoption of specific prenatal and post-birth care that is important for the development of the pregnancy, affecting maternal and fetal outcomes (Santos et al 2012; Leal et al 2020; Nunes et al 2016; Pedraza 2014; Melo et al. 2022; Vidal et al 2024). Unwanted pregnancy may also impact the mother's ability to care for her pregnancy, with increased risks of anxiety, substance abuse disorders (Maiocchi & Bernardi, 2013), and post-partum depression leading to worse health outcomes (Salgado et al 2017; Domingues et al. 2020; Moraes et al. 2006)

On the other hand, negative birth experiences can adversely affect women's fertility intentions, with those reporting dissatisfaction being less likely to maintain their desired number of children (Preis et al., 2020). A study in Ethiopia found that experiences of disrespect and abuse during maternity care significantly deter future use of institutional delivery services (Gebremichael, 2019).

The phenomenon of postponing fertility, which Brazil has been observing together with the decline in fertility (Coutinho and Golgher, 2018; Miranda-Ribeiro, Garcia and Faria 2019), increases the chances that a pregnancy was planned but also increases the average age at pregnancy, which in turn increases both the possibility of having a high-risk pregnancy and the chance of complications (De Almeida, 2018; Brasil 2012). Serious maternal complications deserve more studies, as the maternal mortality ratio remains stagnant (Rolim et al. 2020; Ferreira, Coutinho and Queiroz, 2023; Vogel et al. 2023; Akhter, 2023).

In contexts of low and delayed fertility, it is imperative to study the differences between women who have additional children and those who stop at their first or second child (Bongaarts, 2001). This work aims to shed light on how the intention to have subsequent children, as well as the unmet need for more children, could be associated with numerous birth experiences, such as obstetric violence, high-risk pregnancy, the mother's mental health, the baby's status at birth, and other gestational and perinatal circumstances. We also investigate how the level of planning of the last pregnancy is associated with the same perinatal outcomes.

Data and Research Methods

This study used data from the survey "Women's perception of obstetric care and its consequences for the health of women and children in Belo Horizonte" carried out in 2021, in Belo Horizonte-MG, a city located in Brazil, conducted by the Center for Regional Planning and Development (Cedeplar/UFMG) in partnership with the Professional Graduate Program in Health Promotion and Violence Prevention from the Faculty of Medicine (FM/UFMG) (Guimarães 2021). Data was collected online, anonymously. The questionnaire was self-administered (~20 min) and contained open and closed questions about reproductive history, desire for children, and health care assistance, among others. To be eligible, women must have had a pregnancy between January 1, 2018 and April 30, 2021. For this article, we only analyzed data from women with live births (n=851). The study was authorized by the UFMG Research Ethics Committee (CAAE: 99674718.1.0000.5149).

The three dependent variables are a) Intention to have more children (Yes, No, Don't know); b) Unmet demand for children¹ (Yes; No; Don't know); c) Level of planning of last pregnancy (0 - not at all planned to 10 - totally planned). Gestational and perinatal outcomes form a set of independent variables that can be seen in the tables. The control variables are the characteristics of the mother, such as age (measured continuously), Marital Status (married; cohabiting; single, separated, divorced, and widow-SSDW); Social class (A; B1; B2; C1 to D); Race/color (White and Yellow, Brown and Black); and Education (Postgraduate; Complete higher education; Incomplete higher education; Up to EM or incomplete technical degree).

Findings

It is possible to confirm the selectivity of the sample. The average number of children born is 1.44², with the majority of women being married, from social class B1 or A, with 63.18% of White women, 28.15% Brown and 8.63% of Black women. Education level is largely high, with the majority of women having at least a university education, as usual in online sampling. The average age was 34.88, and more than half of them (53%) wanted two children, with the second highest value category being three children (23% of women), resulting in an average desired family size of 2.15, that is, around the population replacement value.

Regarding those who intend to have more children, around 40% do and another 41% do not, with 18.44% of women undecided. Regarding what they would *like* to have, around 47% would not like to have more children, while the other half is divided between those who would like to have them (32.7%) and those who do not know (20.23%). The number of women who responded that they would like to have an additional child but do not intend to is 9.7%, followed by 22.9% of women who do not know if they would like to have children. The majority (70%) do not have unmet demand. Concerning the level of pregnancy planning, the frequency distribution has a J shape: the modal value is level 10 - *totally planned* (44.97%), followed by 0 - *totally unplanned* (21.86%). In between, values range from 1.12 to 8.2.

Table 1 shows the multinomial logistic regression of the intention to have more children, with “No” being the reference category, and “Yes” and “Don't know” being the two levels of comparison. The older a woman is, the less likely she is to respond that she intends to have more children, a similar result for SSDW women when compared to married. Social class also matters, with poorer women being less likely to respond than they intend to, compared to richer women. In this regard, Brown women significantly differ from White women, as the first are more likely to say that they intend to have the next child compared to their White counterparts. Greater education increases both the chance of answering “Yes” and “Don't know”.

In the second stage, reproductive outcomes are added to the regression, one each time, in order to investigate whether they change the desire to have additional children (second panel). Reporting violence, baby blues, having a high-risk pregnancy, and discrimination significantly reduces the odds of intending to have additional children. High-risk pregnancy, baby blues, and if the baby needs hospitalization are also associated with uncertainty about having additional children. Positive outcomes, such as satisfaction with birth or having a baby who was born well is also associated with the intention to proceed.

¹ This variable is a construct and represents women who respond that they *would like* to have more children, but that they *do not intend* to have additional children.

² Poisson regressions (not shown) on the number of children born alive (CEB) and the mother's sociodemographic characteristics confirms the expected by the literature. The number of children ever born increases with the woman's age and is greater for married women compared to separated, divorced and widowed women, but does not differ between married and cohabiting women. Neither social class nor race/color appear to be significant in Poisson regressions after controls. Education, however, is very important: both women with some postgraduate or higher education have fewer children than women with secondary or technical education.

Table 1: Multinomial logistic regression of the intention to have additional children by sociodemographic characteristics of the mother (first panel, multivariate) and selected outcomes (second panel, univariate, controlled by mother's characteristics) Belo Horizonte 2021 (n=781)

Mother's characteristics	Intention to have additional children (Ref=No)	
	Yes	Don't know
CEB	-2.284***	-1.378***
Age (Continuous)	-0.190***	-0.120***
Marital Status (ref=married)		
<i>In union</i>	-0.416	0.137
<i>SSDW</i>	-1.395***	0.234
Social Class (ref=C+D)		
<i>B2</i>	0.461	0.174
<i>B1</i>	1.064***	0.684
<i>A</i>	0.963**	0.910**
Race/Color(ref=White)		
<i>Brown</i>	0.389*	0.115
<i>Black</i>	0.106	-0.543
Education Level (ref=High School or less)		
<i>Incomplete Undergraduate</i>	1.196**	1.128*
<i>Undergraduate degree</i>	2.004***	1.162**
<i>Graduate degree</i>	1.966***	1.342**
Second panel (only significant variables due to space limitations)		
Level of planning of last pregnancy (Contínua)	0.114***	0.0677**
Baby was born well (Sim)	0.731**	0.786**
High risk pregnancy (Alto Risco)	-0.451*	-0.536*
Had Baby Blues (Sim)	-0.607***	-0.563**
Baby hospitalized at birth (Sim)	-0.0958	-0.517*
Level of Satisfaction with Birth	0.268***	0.121
Spontaneous report of prenatal violence	-0.820***	-0.626**
Violence during prenatal care	-0.873***	-0.717***
Spontaneous report of violence during childbirth	-0.458	-0.786**
Violence during childbirth	-0.384*	-0.371
Discrimination index	-0.526**	-0.263
Constant	7.265***	3.769***

*** p<0.01, ** p<0.05, * p<0.1

Table 2 shows the multinomial regression that models the unmet demand for children. Older women, who already have a greater number of children, who are SSDW are more likely to have unmet demand or an uncertain demand, compared to not having it. Unmet demand is also associated with presenting certain outcomes, as shown in the second panel, such as pregnancy losses, baby blues, having had a baby that was not born well, and declaring a low level of satisfaction with birth. Both the report of spontaneous violence during childbirth, discrimination, or violence during prenatal care increase the chance of having an unmet demand, that is, of wanting to have an additional child, but not having one.

Due to space limitations, it is not possible to show the results of the linear regression of the level of planning of the last pregnancy. The pregnancies most planned are among women who have fewer children, are older, are in Class A, and have at least a university degree. Planning is dependent on marital status, being less planned for SSDW women compared to married. The associations between the level of pregnancy planning and the outcomes were also analyzed. Highly planned pregnancies are associated with having had more pregnancy losses, a greater number of prenatal appointments, having had a baby who was born well, having had a vaginal birth with spontaneous start, having early prenatal care, not having had Baby Blues, high gestational age at birth and greater satisfaction with prenatal care. Obstetric violence (spontaneous prenatal violence, violence during childbirth, and prenatal care and discrimination) is associated with lower levels of pregnancy planning. The high degree of pregnancy planning is also associated with the baby being born well, having had a usual-risk pregnancy, the baby not being hospitalized, and greater satisfaction with the birth, among other indicators of violence and discrimination.

These same models were tested in full, controlling for the mother's characteristics (not shown). Even after controls, the baby's birth status (whether it was born well) remains negatively associated (less planning, worse birth), as well as the start of prenatal care (less planning, later start of prenatal care), number of ultrasounds (less planning, fewer ultrasounds), satisfaction with birth (more planning, more satisfaction). The only variable whose effect was not expected throughout the analysis is the fact that highly planned pregnancies are associated with greater difficulty breastfeeding, which may be associated with a breakdown in expectations regarding the real world of motherhood once the baby is born.

Table 2: Multinomial logistic regression of the unmet demand for children by sociodemographic characteristics of the mother (first panel, multivariate) and selected outcomes (second panel, univariate, controlled by mother's characteristics), Belo Horizonte 2021 (n=781)

Mother's characteristics	Unmet demand (ref=No)	
	Yes	Don't know
CEB	0.357*	-0.202
Age (Continuous)	0.213***	0.019
Marital Status (ref=married)		
<i>In union</i>	0.689**	0.396*
<i>SSDW</i>	0.965*	0.927***
Social Class (ref=C+D)		
<i>B2</i>	0.285	-0.183
<i>B1</i>	-0.0432	-0.13
<i>A</i>	-0.313	0.241
Race/Color(ref=White)		
<i>Brown</i>	0.174	-0.0708
<i>Black</i>	0.226	-0.542
Education Level (ref=High School or less)		
<i>Incomplete Undergraduate</i>	0.619	0.365
<i>Undergraduate degree</i>	0.895	0.135
<i>Graduate degree</i>	0.675	0.329
Second panel (only significant variables due to space limitations)		
Number of pregnancy losses (Contínua)	0.431***	0.082
Baby was born well (Sim)	-0.820**	-0.058
Had Baby Blues (Sim)	0.558**	-0.212
Level of Satisfaction with Birth	-0.248**	-0.015
Level of Satisfaction with Postpartum	-0.128	-0.173**
Spontaneous report of prenatal violence	0.563*	-0.188
Violence during prenatal care	0.616*	-0.223
Violence during childbirth	0.297	-0.553*
Discrimination index	0.896***	0.273
Constant	-11.18***	-1.804**
*** p<0.01, ** p<0.05, * p<0.1		

Conclusion

The results of this paper indicate that perinatal and gestational outcomes are associated both with the degree of pregnancy planning (the higher the level of planning, the better the outcome for mother and baby), and with future reproductive intentions (better assistance and outcomes increase the odds that women will intend to have additional children). Negative experiences are also associated with unmet demand for children. The results of this paper are useful in informing social policies about the importance of reducing unwanted pregnancies and improving the quality of health assistance in prenatal, birth, and postpartum.

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