

Sterilisation in the Colombian armed conflict

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Introduction

Female sterilisation is the most prevalent contraceptive method in Colombia. Twenty percent of women in reproductive age are sterilised, out of which half before the age of 30. Family planning programs were first introduced in the 1960s, simultaneously as the start of the Colombian armed conflict. In our study of family planning in the Colombian armed conflict, we found that nearby conflict violence reduced women's probability of using short- and long-term reversible modern contraception while non-use and use of traditional methods increased (Svallfors & Billingsley, 2018). Unlike other modern contraceptive methods, sterilisation is irreversible. If and when during their fertility careers women are sterilised in relation to conflict violence speaks to how war women's reproductive decisions such as if, when and how many children to have. Reproductive empowerment has intrinsic value as a human right and is beneficial from an individual and societal health perspective, since a pregnancy is one of the most dangerous events women might face during the life course. Fertility control further enables young women to complete school and participate in the labour market (Ardington, Menendez, & Mutevedzi, 2015). When violence is highly prevalent, it may affect women's fertility desires and intentions, as well as fertility outcomes such as parity progression (i.e. number of children), whether the pregnancy is wanted or not, and pregnancy terminations. How war affects sterilisation practices, however, is still unknown.

Colombia is an interesting setting for exploring sterilisation during violent conflict. Contraceptive prevalence is high, unmet need for family planning is mostly low, and ideal family sizes as well as fertility rates per woman hover around two children (Sedgh & Hussain, 2014). Colombia has also had a uniquely long-standing war since the 1960s, involving the government, paramilitary groups, organized crime groups, and left-wing guerrillas. It was originally and persistently fuelled by state corruption, socioeconomic inequality, lack of political inclusion, widespread judicial impunity, and massive trafficking of drugs and weapons. Homicides, disappearances, forced displacements, antipersonnel mines, and kidnappings have seriously affected the lives and health of the Colombian people. Conflict has varied over time and has been present in 1,000 of 1,097 municipalities (Franco, Suarez, Naranjo, Báez, & Rozo, 2006; Garfield & Llantén Morales, 2004), providing unique tempo-spatial variation for understanding fertility desires within the context of war. Finally, in the peace negotiations between the Colombian government and FARC to end the half-century internal conflict, women played an unprecedented role as representatives of all parties, and women's experiences were incorporated as a separate chapter in the final treaty. However, with the exception of sexual violence as a weapon of war, other aspects of women's sexual and reproductive health and rights were omitted, and there is a substantial knowledge gap on how these were affected by conflict.

This study explores the risk of sterilisation due to armed conflict, using event history analysis on data from the Uppsala Conflict Database Program and six rounds of the Demographic and Health Surveys. The research question is: *how did conflict violence affect the risk of sterilisation in Colombia during 1989–2016?*

Voluntary female sterilisations

Voluntary female sterilisation (VFS) was considered illegal and immoral in most countries until 1969, when Singapore and the US state Virginia introduced the first non-eugenic, non-restrictive laws. During the 1970s, sterilisation programs were introduced worldwide through national family planning programmes, often motivated by high levels of fertility and maternal mortality. Sterilisation was portrayed as a good option in developing settings with low access to reversible contraception (Nortman, 1980). VSF was first

introduced in Colombia in 1972 by the private non-profit family planning organisation Profamilia, when two medical doctors were trained by Johns Hopkins Hospital. It followed the introduction of a vasectomy program two years earlier. Both were widely available but especially aimed to the poor, as a cost-effective and permanent form of avoiding unwanted pregnancies. While religious, medical and target-group opposition hindered the success of the vasectomy program, the uptake of VFS became large (Hollerbach, 1989; T. Williams, Ojeda, & Trias, 1990).

The Colombian government sponsored its first free-of-charge VSF program in 1979, largely as a response to the high maternal mortality rate. The program explicitly targeted women who would have high risk pregnancies in terms of both morbidity and mortality, were they to become pregnant. A point system was introduced through which factors such as a woman's age, number of children, pregnancy intervals, nutritional status, and number of people in the household would determine their risk level. Women had to be at least 25 years old and have at least three living children to be eligible for the program. Women at lower or medium risk would instead be offered reversible modern contraceptive methods. Colombia's then 1,200 rural health centres and 800 local hospitals would refer the women to one of the country's 108 regional hospitals, where obstetricians, surgeons and operating room nurses newly trained by Profamilia would perform outpatient laparoscopic sterilisation (Guttmacher, 1979; Rizo & Roper, 1986). The sterilisation rate was estimated to 16 percent among married, fecund women in 1982 (Trias et al., 1987) and 18.3 percent as of 1986, thus the most frequently used method (Hollerbach, 1989). Profamilia provided 599,018 female sterilisations between 1972 and 1988, compared to only 19,590 vasectomies (T. Williams, Ojeda, & Trias, 1990). Between 1977 and 1995, the share of women who were sterilised rose from 6 to 37 percent (Parrado, 2000).

As of the mid-1980s, more than 25 percent of married women in reproductive age relied on either VSF or vasectomy to avoid pregnancy in Brazil, the Dominican Republic, El Salvador, Sri Lanka, and Thailand. By comparison, between 10 and 20 percent used sterilisation in Colombia, Ecuador, Guatemala, and Mexico. It represented one-third of all contraceptive use in Colombia, Ecuador, and Mexico; two-thirds in the Dominican Republic and El Salvador; and nearly half in Brazil, Guatemala, Sri Lanka, and Thailand. The prevalence was low in North and Sub-Saharan Africa as well as Indonesia, Bolivia, Peru, and Trinidad and Tobago in the mid-1980s (Rutenberg & Landry, 1993). One decade later, sterilisation was the most common contraceptive method in Latin America according to Leite et al. (2004). About 16 percent used VSF among married, fecund women aged 20–45 in Colombia, compared to 40 percent in Brazil and the Dominican Republic and 10 percent in Peru. All else equal, women aged 20–29 had a lower propensity for undergoing sterilisation compared to ages 30–34 in all four countries except Brazil, where the timing was earlier. In all four countries women aged 40 or above had a lower propensity. The pattern of duration of marriage was inconsistent across countries; in Colombia, the risk was highest for those who had been married 5–9 years compared to lower and higher durations. In all counties, the risk increased with number of children. Only in Brazil and Peru did urban women have a statistically significant higher propensity for VSF. All else equal, husband's educational level did not associate to VSF (Leite, Gupta, & Rodrigues, 2004). Leite et al. (2004) observed that women with higher levels of education were at greater risk of sterilisation in the mid-1990s, while Folch et al. (2017) found that women of lower educational and wealth levels are more likely to undergo sterilisation compared to using reversible long-acting methods in 2005 and 2010. This difference could be due to different sample selections of the population at risk and may not necessarily reflect a period change. Contrary to Leite et al. (2004), Folch et al. (2017) found that husband's level of education influenced women's long-acting contraceptive choice.

Sterilisations in Colombia and elsewhere were not always voluntary. Compulsory sterilisation violates women's rights to reproductive autonomy and compromises their right to make informed decisions about contraceptive use. Although eugenic sterilisation practices have largely ceased, forced and coerced sterilisations are still performed in many parts of the world, particularly against ethnic minorities (Miranda & Yamin, 2004; Reilly, 2015; Zampas & Lamačková, 2011), disabled women (Asdown Colombia et al., 2013; CDR, 2014; Zampas & Lamačková, 2011), and women living with HIV (Kendall & Albert, 2015; Zampas & Lamačková, 2011). At the onset, the private and public sterilisation programs in Colombia specifically targeted poor women, while simultaneously claiming voluntariness (Guttmacher, 1979). Public-sector hospitals and physicians working in government facilities would receive a provision payment for performing sterilisations. This could have been an incentive to suggest sterilisation as a contraceptive method to women seeking care. This practice was abandoned in 1984 following a debate over access to family planning between Profamilia, representatives of the Catholic church, journalists, physicians, politicians, and representatives of women's support groups (Hollerbach, 1989). Representatives of the Catholic Church accused Profamilia for using psychological pressures, threats, denial of care, and provision

of illicit drugs to coerce residents in the department Nariño into female sterilisations and vasectomies (Rizo & Roper, 1986). Observed differences have led to allegations of coercive sterilisations, particularly among disadvantaged groups such as young, poor, rural, Afrocolombian and/or indigenous women. Sterilised women who answered the DHS survey in 2005 and 2010 were less likely to report being told about other methods at the time of counselling or as part of the informed consent process compared to women using reversible long-acting contraceptive methods. Women exposed to a family planning provider were more likely to use reversible methods compared to sterilisation (Folch, Betstadt, Li, & Whaley, 2017). Jadhav & Vala-Haynes (2018) analysed whether sterilisations followed informed choice and knowledge about side effects and consequences in seven South Asian and Latin American countries. Among Colombian women, women sterilised in the private sector as well as at parity 2 or lower were better informed. As were the wealthy and highly educated, perhaps as proxies for ethnicity. Interestingly, there were no statistically significant differences across age and rural women were more likely to be well-informed compared to urban. Although their study did not regard whether coercion took place, it suggests that “not enough health care providers spend time informing women [...] about different aspects of sterilisation, and that there are specific groups of women that are more affected” (ibid., 1). They argue that due to the large volumes of women seeking or being offered sterilisations, quality of counselling could be poor.

Still, no attention has been paid in research to the connection between armed conflict and sterilisation, although both are highly prevalent in the Colombian context.

Armed conflict and reproductive choice

The need for interventions targeting conflict-affected women’s reproductive health has been widely acknowledged (Austin, Guy, Lee-Jones, McGinn, & Schlecht, 2008; Chynoweth, Amsalu, Casey, & McGinn, 2018; McGinn, 2000; McGinn & Casey, 2016; McGinn & Purdin, 2004; Palmer, Lush, & Zwi, 1999). There is now a growing literature on women’s reproductive choices and issues in conflict and post-conflict settings (e.g. Casey et al., 2013; Casey & Tshipamba, 2017; McGinn et al., 2011; Orach et al., 2015). The general argument is that men are more likely to suffer directly from war and women are more vulnerable to the indirect health consequences of conflict.

Altered fertility behaviour has been observed in many conflict settings. Journalistic reports about the post-war baby boom among *ex-guerrillas* from the FARC ranks following demobilisation shows that fertility behaviour indeed was affected by peace in some subgroups. After decades of postponement during conflict by means of forced contraception, abortions and adoptions, many former combatants have had babies (Brodzinsky, 2017). The 2003–2011 war in Iraq accelerated the decline in marital fertility, especially among women with lower levels of education, likely as a result of poverty. Adolescent fertility, however, increased sharply in tandem with younger ages of marriage (Cetorelli, 2014). There was a dip in fertility while the Angolan civil war was more intense and subsequent rebound when fighting ceased 1975–2002, especially among the richer and more highly educated (Agadjanian & Prata, 2002). During more violent years in the Ethiopian armed conflict 1974–1991 conception rates declined short-term, perhaps reflecting spousal separation and/or increased hardship, while long-term marital fertility first increased slightly in the 1970s and then declined in the 1980s (Lindstrom & Berhanu, 1999). In Beirut, nuptiality and fertility stagnated during the Lebanese civil war 1975–1991, as a consequence of large male migration that led to a “marriage squeeze” or a skewed sex ratio, and a housing shortage that led to postponement of marriage (Khlat, Deeb, & Courbage, 1997). Higher birth rates following World War II have also been discussed in terms of fertility and nuptiality postponement and subsequent recuperation (Van Bavel & Reher, 2013).

As a means of fertility control, the risk of sterilisation may relate both positively and negatively to armed conflict.

Conflict increases mortality, including infant and child mortality (Elveborg Lindskog, 2016; O’Hare & Southall, 2007) and most Colombians have family or friends who were murdered, kidnapped, displaced or disappeared in the war, which has killed around 200,000 people and displaced millions (Franco, Suarez, Naranjo, Báez, & Roza, 2006). Losing a child or other family members may lead to a substitution effect by which women want to have more children (Chi, Bulage, Urdal, & Sundby, 2015a, 2015b), thus lowering the risk of sterilisation.

Women faced with conflict may want to be sterilised to reduce births because of deteriorating social conditions, such as a loss of security, certainty, economic opportunities, family, relationships social

support, etc. (Chi, Bulage, Urdal, & Sundby, 2015a, 2015b; Ibáñez, Calderón, & Gafaro, 2011; Speizer, 2006). Predicting access to health care as well as cost and benefits of children may be more difficult due to the threat of harm and instability in conflict (N. E. Williams, Ghimire, Axinn, Jennings, & Pradhan, 2012). Williams et al. (ibid.) found that political instability and major gun battles due to conflict had a positive effect on the risk of first contraceptive use in the Chitwan Valley during the Nepalese civil war, perhaps reflecting a decrease in the desire for children. Evidence from Sub-Saharan Africa show that women choose to use family planning if made available in conflict or post-conflict environments, suggesting that women do want to space or limit births but may not be able to (Casey et al., 2013; Casey & Tshipamba, 2017; Orach et al., 2015).

Health system deterioration may reduce women's access to reproductive health services such as sterilisations, because of relocated resources to military expenses (O'Hare & Southall, 2007), damaged infrastructure, limited human resources, weak management, increased difficulties in coordination among non-governmental organisations (Iqbal, 2010, pp. 81–2; McGinn et al., 2011), and direct attacks on health care professionals and facilities. The Colombian health sector has suffered both directly and indirectly from war (Franco, Suarez, Naranjo, Báez, & Rozo, 2006).

Gender disempowerment and intimate partner violence may decrease women's possibility to make reproductive choices. We found that intimate-partner violence (IPV) reduced the propensity of using reversible modern contraception (Svallfors & Billingsley, 2018). Although not a mediator of the relationship between conflict and contraception, IPV is known to relate positively to war (Leiby, Østby, & Nordås, in press on Peru; Noe & Rieckmann, 2013; Svallfors, in progress; Rieckmann, 2014 on Colombia). Young Colombian women who have experienced sexual violence have higher levels of unintended pregnancy and contraceptive non-use (Gomez, 2011). Experiencing violence is strongly associated with reproductive issues, such as contraceptive discontinuation, unwanted pregnancy, spontaneous or induced abortion, parity progression, non-access to antenatal health care (Kishor & Johnson, 2004), unwanted pregnancy, and abortion (Cripe et al., 2008; Gomez, 2011; Pallitto et al., 2013). Rape has been used systematically both as a weapon of war and a crime of opportunity in Colombia (Amnesty International, 2004, 2011; Wirtz et al., 2014) and many other contexts. Increased physical and sexual violence during conflict may consequently undermine women's sexual and reproductive health and autonomy, thus affecting the risk of sterilisation.

Empirical approach

Two sets of data are combined in this study to explore the risk of sterilisation in the Colombian armed conflict. First, six rounds of the Colombian Demographic and Health Surveys [DHS], conducted every fifth year from 1990 to 2015, offer long-term information on women's reproductive behaviour and characteristics (DHS, 1991, 1995, 2000, 2005, 2011, 2017). Second, the Uppsala Conflict Database Program [UCDP] contains information from 1989 to 2016 about events of violent conflict in which at least one person was killed, including when and where each event occurred and an estimation of how many casualties there were in each event (Croicu & Sundberg, 2017; Sundberg & Melander, 2013). The datasets are combined spatially by the department in which the respondent resided at the time of interview and the conflict event(s) occurred. Women who changed place of residence are thus excluded to avoid endogeneity issues, yielding a sample of $n=81,480$. Women who were not sterilised in 1989 are defined as the population at risk.

I use a multilevel survival model, to account for regional socioeconomic variation in both conflict and fertility control behaviour, on the risk of transition into sterilisation. The treatment variable is number of conflict events or deaths in the department where the respondent resides. Akaike's Information Criterion (AIC) will evaluate whether number of events or deaths provides a better model fit.

A number of socioeconomic and family characteristics are included as control variables. The socioeconomic variables include: current age, household wealth index quintiles, type of place of residence (urban/rural), and highest level of education attained at the time of interview. I will also explore whether there are interaction effects between socioeconomic status and armed conflict. The family characteristics are: marital status (never in union, married, cohabiting, divorced/separated, widowed), number of total children ever born, and age of youngest child.

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