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Gender, inequality and Depo-Provera: Constraints on reproductive choice in Nicaragua

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ABSTRACT

This article examines the sociocultural determinants of Nicaraguan women's use of Depo-Provera as a means of contraception. The prevalence of Depo-Provera in Nicaragua is high and increasing compared to other Central American countries. Drawing on data from structured interviews with 87 women and from focus groups with 32 women, we show how women's preference for Depo is shaped by both gendered inequalities and socioeconomic constraints. We employ basic statistical tests to analyse correlations between women's marital status and socioeconomic status (SES) with contraceptive use. Our statistical findings show significant associations between use of Depo and both marital status and SES, such that women who are married or in conjugal unions and women with lower SES are more likely to use Depo. To help explain women's use of Depo-Provera in Nicaragua, we situate our findings within the context of gender, culture, and power, reviewing the contested history of Depo-Provera in the developing world and dynamics of gender inequality, which constrain women's contraceptive choices. We conclude with suggestions for reproductive health programming in Nicaragua and beyond, arguing that gender equity and addressing socioeconomic barriers to family planning remain priorities for the achievement of global reproductive health.

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Introduction: The Cairo consensus and reproductive choice

The 1994 International Conference on Population and Development (ICPD) in Cairo, Egypt marked a historical shift away from population control as a strategy for development and towards viewing population patterns as a reflection of overall social and economic development. The ICPD Programme of Action – often referred to as the Cairo Consensus – squarely frames reproductive health as a human rights issue, making gender equality and equity, the empowerment of women, and inclusion of men, women, and young people in reproductive health programming a priority (United Nations, 2014). By adopting the Programme of Action, countries committed to the Cairo principles and to making reproductive rights central to their development strategies. Importantly, Cairo brought men back into population considerations, and focused on gender inequalities as a major determinant of women's reproductive decision-making

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(Dudgeon & Inhorn, 2004). The Cairo Consensus urges men to act equally as contraceptive users; however, the framework 'equality of outcomes' used by health and development organisations inadequately captures this goal (De Waal, 2006; Dudgeon & Inhorn, 2004). Given that most modern contraceptive methods target women, it is false to expect equal *outcomes* in contraceptive use for men and women. Nonetheless, gender equity can be conceptualised in relation to the *process* of reproductive health programmes, for instance, by educating both men and women about contraceptive options by fostering relationships where both partners are able to make contraception choices without fear of repercussion. Additionally, men and women can make planning decisions together *equitably*, even if their involvement is not *equal* (Gribble, 2003); in other words, even if most contraceptive methods act on women's bodies, the Cairo principles suggest that men should be encouraged to see family planning as part of their responsibility.

Nonetheless, working towards gender equity in global reproductive health has proven to be a challenge. The achievement of reproductive choice is complicated by complex and interconnected constraints, including gender and socioeconomic inequalities as well as structural barriers to health care access, which must be addressed if the Cairo principles are to be realised.

Global and local dynamics shape local women's reproductive and contraceptive behaviours. Our study joins other anthropological inquiries into women's reproductive agency that provide insight into how women's contraceptive choices are reflective of political ideologies, economic policies, and gender norms that delimit, but do not fully determine, women's capacity for agency (Krause & De Zordo, 2012; O'Dougherty, 2013). We are also influenced by practice theory, viewing women as shaped by relations of power and (gender) inequalities, but also capable 'through their living, on-the-ground practices' of reproducing and transforming culture (Ortner, 2006, p. 128). Despite constraints, women have agency, or a 'socioculturally-mediated capacity to act' on their reproductive choices (Browner & Sargeant, 2011, p. 13). Considering women's reproductive behaviour as a reflection of both constraints and agency complicates simple notions of women's empowerment or reproductive freedom (McKinley, 2003). Our analysis of reproductive health in Nicaragua considers political and economic history and sociocultural realities that delimit women's reproductive choices.

Our overall aim in this article is to examine the historical and sociocultural determinants of the high prevalence of Depo-Provera use (hereafter, 'Depo') among Nicaraguan women as compared to elsewhere in Latin America (Encuesta Nicaragüense de Demografía y Salud [ENDESA], 2008).[1] Specifically, we explore the role of gender ideologies and structural constraints that shape use of this injectable contraceptive, arguing that women's contraceptive choices make sense as agentive responses to the constraints posed by gender inequalities and limited economic and healthcare resources. We situate our analysis in a post-Cairo context, reviewing the literature on gender inequalities, secondary data on reproductive health in Nicaragua and the history of Depo, before turning to an analysis and discussion of primary data.

Gendered inequalities and constraints over reproduction

One objective of the Cairo Consensus is 'to encourage and enable men to take responsibility for their sexual and reproductive behavior' as a facet of gender equity and the

empowerment of women (United Nations, 2014, p. 36). However, it is not simple to promote this goal in contexts where male disapproval of contraception influences women's planning decisions. Rural Nicaraguan women are often economically vulnerable, dependent on seasonal agricultural harvest for food security and upon men for access to cash income. Browner argues that economic inequality shapes women's reproductive behaviours in ways that vary by situation and reflect negotiations with other social supports, such as access to health care or child care (Browner, 2000, p. 774). In Nicaragua, as elsewhere in Latin America, gender norms often facilitate men's failure to assume responsibility for children or social reproduction, leaving these costs to be borne largely by women (Browner, 2000, p. 7). As a result, considering men's involvement with women's contraceptive choices involves examining how women's relationships with male partners interact with broader contexts of resource constraints to shape reproductive health outcomes.

Despite the Cairo aim of involving men as partners in reproductive health, international family planning programmes continue to target women in contraceptive campaigns and STD prevention. In Latin America specifically, the exclusion of men from reproductive health and family planning programmes mirrors and reinforces stereotypes of machismo (Gutmann, 2011). Machismo is a cultural description often used to portray Latin-American men as dominant, aggressive, and controlling of women; however, as Gutmann has shown, the meanings and practices of machismo are shifting in the contemporary era, particularly as women engage in the formal labour force and as men assume more responsibility for child rearing and housework (Gutmann, 2003). Gutmann further argues that ideologies of machismo serve to reinforce global gender inequities, which falsely portray men in the USA as more enlightened and progressive and men in Latin America as uninterested in gender equality (Gutmann, 2011). In reality, men in diverse Latin-American settings are accepting new reproductive technologies and transforming masculinities, focusing on equitable child rearing involvement and emotional commitment to the family (Pomales, 2013; Wentzell, 2013). Family planning programmes that fail to acknowledge these shifts reinscribe women's responsibility for biological and social reproduction in ways that inadvertently reinforce gender inequity.

While we do not wish to reproduce static stereotypes of masculinity, we find it important to note that hegemonic forms of male dominance and associated gender inequities persist in contemporary Nicaragua. In rural communities in particular, ideologies of male control delimit women's physical movements and their sexual agency (Montoya, 2002). As one indication of the persistence of male control and domination in Nicaragua, rates of violence against women and intra-partner violence are high (Bott, Guedes, Goodwin, & Mendoza, 2012; Pan American Health Organization [PAHO], 2002). Demographic and health survey (DHS) data from 1998 show that among women who were ever married in Nicaragua, 29% reported having been physically abused by their partners or another person (PAHO, 2002). More recent data suggest that approximately 20% of all Nicaraguan women reported being the victim of physical or sexual violence, with rates higher among women with lower levels of education and women who were ever married (Bott et al., 2012; ENDESA, 2008). In the rural department of this study, during the two-month period of fieldwork in 2003, there were several high-profile cases of women murdered at the hands of their spouses and other widely discussed cases of incest. As such cases circulate through local media and popular conversation, they serve

as a focus of critique but also a reminder of the harsh consequences of gender inequalities. Of course, gender-based violence reflects structural realities, as economic constraints may exacerbate men's expressions of physical control over and against women (Gutmann, 2003). Our point here is to acknowledge that, although meanings and practices of masculinity are dynamic, male control over women's lives remains a persistent problem for achieving reproductive health equity in Nicaragua.

Gendered patterns of kinship and residence also influence women's contraceptive use. When living with men whose disapproval of contraception poses an emotional or physical threat, women may not have liberties to access contraception under their partner's gaze. Additionally, men's control of household economic resources influences women's reproductive decisions. Accessing contraception may require a woman to spend time and money travelling to a clinic without asking her male partner, who may or may not approve. Although Nicaraguan women can access contraceptives free of cost at public health clinics, for rural women, transportation costs to clinics are high. Women travelling long distances to clinics must explain their absence from home to coresident male partners. Analysing how women's use of contraception correlates with marital status and hearing women's thoughts about access to contraception helps reveal the gendered dynamics shaping reproductive choice in women's everyday lives.

Reproductive health in Nicaragua

The allocation of health care resources in Nicaragua over the past half-century reflects broader political and economic realities. Significantly, the Sandinista Revolution of 1979 prioritised universal health care, women's literacy, gender equity, and rural development, all of which stimulated an expansion of women's reproductive health care access in rural areas (Babb, 2001). Despite some gains, Sandinista policies soon ran up against the realities of the Contra War, the US-backed military incursion designed to undermine the Revolution. The violence and instability of the war and the need to direct resources towards military spending made it nearly impossible for the Sandinistas to pursue their revolutionary social goals (Babb, 2001; Lancaster, 1992). By 1990, the Sandinista party faced widespread dissatisfaction and was defeated in national elections that brought centre-right candidate Violeta Chamorro to power. Chamorro ushered in a period of neoliberal reforms (1990–2006) that transformed Nicaragua's public sector. These reforms followed the dictates of the Washington Consensus and international financial institutions, and included structural adjustments to the Nicaraguan economy that slashed public spending on health, education, and other services. For example, from 2000 to 2001, health spending as a percentage of gross domestic product (GDP) dropped from 6.8% to 3.8%, a reduction of nearly 50% (Angel-Urdinola, Cortez, & Tanabe, 2008). By the early 2000s, after successive neoliberal administrations, Nicaragua's public health infrastructure was significantly deteriorated, especially in rural areas. As formal health programmes were dismantled, women often assumed the burden of informal health-related caregiving within households, a pattern not unique to Nicaragua (Browner, 1989; Lancaster, 1992; Quesada, 2009).

Indicators of women's health during the neoliberal period are mixed. Maternal mortality rates declined over the 15-year period from 1990 to 2005, reflecting, among other influences, an increasing number of births attended by skilled personnel (PAHO, 2002; United Nations Population Division, 2012). Still, Nicaragua falls short of Millennium

Development Goal (#5) of reducing maternal mortality rates by three quarters. Furthermore, disparities in maternal health indicators among Nicaraguan women persist. For instance, from 2001 to 2006, while 95% of urban women received prenatal care, only 87% of rural women did; over 95% of women with secondary education received prenatal care, compared to roughly 75% of women with no formal education (ENDESA, 2008).

Nationally, fertility rates declined from 4.8 in 1990 to 3.8 in 2002, possibly a result of an increased focus on family planning by both the Ministry of Health [MINSA] and private development organisations. A Nicaraguan government report published in 2008 shows a steady increase in contraceptive prevalence among sexually active women of reproductive age over the past decade, with 60.3% using a modern family planning method in 1998, 69% in 2001, and 72% in 2006–2007 (ENDESA, 2008). The most prevalent contraceptive method reported was female sterilisation but rates of women sterilised are declining, from 26% in 1998, to 25% in 2001, and 24% in 2006–2007. On the other hand, the second-most widely used family planning method nationally is 'la inyección' (Depo), with prevalence rates increasing from 5% in 1998, to 14% in 2001, and 23% in 2006–2007.[2] Also notable is that use of Depo in Nicaragua is higher than in any other Central American country.[3] Our research takes place in 2003, squarely within the period of increased prevalence of Depo use in Nicaragua, and investigates how sociocultural determinants might relate to the method's popularity.

Access to primary health care is a major determinant of contraceptive use, as most Nicaraguan women obtain their reproductive health services through public health clinics.[4] A World Bank survey of health care equity revealed that among all Nicaraguans, the poor, those who live in rural areas, and those whose livelihoods depend on agriculture have the most limited access to primary health care (Angel-Urdinola et al., 2008). The report revealed that the primary barrier to health care access was distance travelled to a health facility, with rural residents spending three times longer than urban inhabitants to reach health care (Angel-Urdinola et al., 2008). While 68% of sexually active rural women report use of modern contraception (ENDESA, 2008), many of these women must travel long distances to their nearest healthcare facility, shaping local preferences for longer-acting contraceptives. Furthermore, issues of limited access to healthcare are compounded by gendered norms that foster male control over women's sexuality. In rural Nicaragua, these cultural ideas include thinking that husbands have the 'right' to control their wives' physical movements and contraceptive usage out of male fears of women's sexual infidelity (Montoya, 2002).

Such gendered ideologies are reinforced through the influence of the Catholic Church over reproductive health discourse and practice in Nicaragua. Whereas post-Cairo paradigms frame reproductive health as a human right, traditional Catholic teachings view reproductive health as a moral issue subject to religious regulation (Mishtal, 2009). For example, since the 1990s, the Church has lobbied to delimit the content of sexual education and even to remove it entirely from public school curricula (Randall, 1994). Catholic condemnation has influenced women's and men's perspectives towards modern contraception, contributing to a reluctance to utilise modern methods and a preference for traditional methods, especially in rural areas.[5] The Church's influence over reproductive policy in Nicaragua is especially visible in abortion debates, where religious morality and nationalist sentiments are used to support the criminalisation of abortion (Heumann, 2005). Even as modern forms of birth control are increasingly prevalent in Nicaragua, the

Church continues to intervene in state policy around reproductive health education and access to services (Gutmann, 2011).[6]

Depo-Provera: A controversial contraceptive

Depo-Provera has a controversial history, particularly when considering its use in resource-poor contexts like Nicaragua. Depo was first marketed as a contraceptive worldwide in the 1970s; however, the U.S. Food and Drug Administration rejected the pharmaceutical company Upjohn's application to license Depo after cancerous tumours appeared in clinical animal trials (Bunkle, 1984; Goodman, 1985). Despite significant safety concerns, the World Health Organization and international family planning organisations fostered Depo's popularity in the Global South.[7] The international health community's eagerness to distribute Depo supported dominant development ideologies holding that 'overpopulation' in the Global South was the major cause of underdevelopment and that limiting family size was the primary means of accelerating the development process (Hartmann, 1987). In response, critics noted that expanding use of Depo, like female sterilisation, was a form of population control disguised as reproductive rights (Heumann, 2005).

In addition, advocates of Depo used high maternal mortality rates in the Global South to justify Depo's export to these countries. One U.S. Food and Drug Administration commissioner remarked that the contraceptive could have 'a favorable benefit/risk ratio in a less developed nation' – in other words, given the risk of maternal death, any risks associated with Depo were purported to be minimal in comparison (Levine, 1979, p. 11). To this claim, others argued that a contraceptive could not be considered a 'solution' for maternal mortality, and instead advocated for social policy changes that would strengthen public health services and promote antenatal and post-natal care (Goodman, 1985; Levine, 1979).[8]

Within these historical controversies, the fact that Depo is increasingly prevalent in Nicaragua presents a paradox for analyses of gender equity in reproductive health. Injectables like Depo are among the most popular contraceptive forms in Latin America, and governments have made injectables widely accessible through public health systems (Seiber, Bertrand, & Sullivan, 2007). [9] The relatively long-acting nature of Depo may benefit rural women in particular, as they face barriers to contraceptive access because they live at longer distances from healthcare facilities (Graciela, Corriols, Eppler, Saldaña, & Menotti, 2011). Furthermore, injectable contraceptives do not require consent by a woman's partner and present no obvious signs that a woman is controlling her fertility, as do condoms or other barrier methods, and are thus 'private' and 'invisible' (Lande & Richey, 2006). In Nicaragua, the Ministry of Health makes Depo available free of charge through public health clinics.[10] MINSA officially acknowledges that the private and invisible nature of Depo is attractive to women (Ministerio de Salud [MINSA], 2008), thereby implicitly admitting that gender inequality persists as a factor shaping women's contraceptive choices.

Understanding women's preference for Depo-Provera requires acknowledging both the global landscape of controversy surrounding this contraceptive, as well as the local, gendered, and cultural realities shaping women's actual contraceptive behaviours in Nicaragua. The history of Depo's export to the Global South has been described as a

contraceptive double standard (Hartmann, 1987), because this technology is considered unsafe or undesirable for women in wealthy nations and yet continues to be promoted for resource-poor women. Nonetheless, Depo represents an important resource for women who face constraints, both structural and ideological, to their use of contraception, and can thus be seen to reflect women's agency over their reproductive lives. However, since Depo is 'invisible', men's 'traditional authority' over women and men's lack of involvement in family planning remain unchallenged (Goodman, 1985).[11] In this article, we are interested in assessing the local, cultural constraints on women's reproductive choices, but also in analysing women's contraceptive use as a potential indication of women's agency in the face of gender inequalities and resource limitations.

Research questions and hypotheses

Our overall aim is to understand the social determinants of Nicaraguan women's use of Depo in the broader, post-Cairo context of persistent global and local inequalities in reproductive health. Because our data were collected using a survey including standard demographic questions drawn from the DHS for Nicaragua,[12] we were limited in our ability to assess 'gender inequity' using the variables in our quantitative analyses. The question we chose to represent the presence of a male partner, and therefore the influence of men over women's family planning decisions, was marital status. Existing literature has demonstrated that, for Latin-American women in particular, male partners may significantly limit women's autonomy related to contraceptive use (Dudgeon & Inhorn, 2004), restrict rural women's freedom of movement in their communities (Montoya, 2002), and shape women's reproductive health-related decision-making (Browner, 2000). While marital status does not alone measure 'gender equity', it does indicate the potential for male influence over women's contraceptive choice. In addition, because socioeconomic status (SES) can interact with, and exacerbate, gender inequalities, our analyses below include several proxy measures of SES.

As a way of assessing the influence of men over family planning decisions, we ask: What are the associations between a woman's marital status and contraceptive use? Further, among those women who use family planning, what factors might explain their preference for Depo-Provera? We use a mixed-methods approach to address our research questions. First, statistical analyses address two specific hypotheses: (1) For marital status, we hypothesise that women who are married or in stable unions with will be more likely to use family planning and to use Depo-Provera; and (2) For SES, we hypothesise that women of lower SES will be more likely to use Depo than women with greater socioeconomic resources. We use tests of statistical association to show the relationship between marital status and SES, as predictor variables, on family planning use, in general, as an outcome variable. In order to explain the preference for Depo-Provera in particular, we draw upon qualitative data from focus groups.

Study location and methods

The primary data analysed for this study were collected over a two-month period in 2003 in rural communities of Matagalpa, a mountainous *departamento* or state in north-central Nicaragua. We conducted fieldwork during July and August, the rainy season, and just

before the biannual coffee harvest. An estimated 60% of households in this region were extremely poor at the time of the study, defined as lacking potable water and electricity (Pan American Health Organization [PAHO], 1998). The main source of livelihood for residents of Matagalpa is agriculture, including subsistence agriculture and cash income earned during the coffee harvest, when entire families assist in the fields picking coffee beans, which are they are paid for by weight. This region was hit hard in 1998 by Hurricane Mitch, and some infrastructure (homes, buildings, roads, and bridges) has not been repaired. MINSA organises the delivery of health care in rural areas through *centros de salud* (health clinics) and *puestos de salud* (health posts). Health clinics are staffed by nurses and provide primary care and referral to secondary care in the regional hospital in the state capital; health posts provide basic preventive care such as immunisations, pregnancy care, and oral rehydration therapy. Both health clinics and posts are meant to be the first point of contact in Nicaraguan public health system. At the time of study, many health clinics and posts lacked basic medicines, including contraceptives, and rather than distribute these free of charge, would provide a prescriptions that patients needed to take for purchase at private pharmacies. However, birth control pills, Depo injections, and surgical insertion of intrauterine devices (IUDs) were offered free of charge at public clinics.

Data collection occurred through two principal methods: a questionnaire about women's reproductive health conducted with 87 women and three focus groups held with a total of 32 participants. The questionnaire consisted of 44 structured, closed- and open-ended, questions about women's socio-demographic characteristics, reproductive health history, access to health services, and knowledge and experience with cervical cancer screening (data from this final section are not included in the present analysis). Questionnaires were administered to women of reproductive age waiting to receive free medical care at temporary health clinics set up in decentralised community locations (e.g. schools) by a US-based non-governmental organisation (NGO) and a Nicaraguan NGO. The clinics were held over the course of 12 days in communities in the rural department of Matagalpa, and were set up to deliver basic primary care. The first author, with the help of three female NGO volunteers, conducted interviews with women while they waited in line for the clinics. Oral consent to participate was obtained from all participants, and the consent procedure made clear that their participation in the research would not impact their clinical care. While the sampling was non-random (interviews were conducted with any woman willing to participate while she waited in line), because the clinics attracted a wide section of women and families from surrounding rural communities, the women interviewed are generally representative of women of reproductive age in the region.

Three focus groups were also conducted by the first author and one female Nicaraguan NGO staff member. Each focus group included between 10 and 12 participants, between 16 and 40 years of age, mostly women (with five men also participating). Questions in the focus groups asked about experiences with reproductive health education, views of sexuality and reproductive health, experiences talking with partners about family planning, and assessments of barriers to contraceptive use. Discussions lasted from 45 to 90 minutes and, like all data collection, were conducted in Spanish. Focus groups were not audio-recorded, but the first author took notes of these discussions for later textual analysis.[13]

Data analysis

We used Pearson chi-square tests to test for associations between Depo use and our independent variables of interest – marital status and SES. All statistical tests were conducted on STATA, version 13.1. To test hypothesis 1, we combined marital status into a dichotomous variable with two values: 'single/widowed' and 'married/union libre'.[14] The latter value includes those women who are in long-term relationships with male partners, whether formally married or not. For hypothesis 2, we used the following variables as proxies of SES: (1) income, (2) education, (3) access to electricity, (4) access to potable water, and (5) distance to health facility. We hypothesise that the rate of Depo use is higher among women of lower SES; that is, women who: (1) have lower incomes, (2) have lower education levels, (3) lack electricity, (4) lack potable water, and (5) travel farther to access a health facility.

Women's family planning practices are the outcome variables, which we have organised in three categories related to the hypotheses: (1) not planning (not using modern contraceptive methods), (2) planning with Depo, and (3) planning with other methods of fertility control besides Depo. The first category isolates women who reported not using any form of contraception; the second category separates women who use Depo from all other women; the third category isolates women using contraceptive methods other than Depo.

Limitations

There are notable limitations to these analyses. First, our sample was not randomly selected. However, given that the free clinics from which this sample was selected attracted a wide range of residents in the study communities, we believe we can cautiously generalise from our findings to other Nicaraguan women, especially those in rural areas. Second, our questionnaire was administered only to women. This was a limitation of the original study design, and reflects a bias in reproductive health studies more generally. In hindsight, we would have designed a separate questionnaire for men, with questions designed to assess their reproductive health-related perceptions and practices. Third, our sample size is small, limiting our ability to detect statistically significant differences between our outcomes of interest. However, while our analyses did not show significant association between measures of SES such as income and Depo use, this does not necessarily mean that such associations would not be found in larger samples or population-based studies. Finally, our data were collected in 2003 and the most recent DHS in Nicaragua was conducted in 2001, limiting our ability to compare our study findings to more recent population-based surveys.

Findings

In what follows, we present the quantitative results from the questionnaire interviews completed with 87 women. In addition, qualitative data from focus groups are used to provide context and to help explain associations found between marital status, SES, and contraceptive use.

Socio-demographic characteristics

All women in the study were of reproductive age (16–49), with a mean age of 29.[15] Table 1 presents additional socio-demographic characteristics of these 87 women, including

information about their income, education, marital status, household structure, and access to health services. Of interest to our investigation, 23 women (26%) rely on a male partner working in agriculture for income, and an additional 28 women (32%) work in agriculture themselves while also receiving income from a male partner. These findings reflect women's general economic instability and frequent dependence on men or other family members for income.

Table 1. Women's socio-demographic characteristics ($n = 87$).

Variable	*n* (%)
Income source	
From male partner working in agriculture	23 (26.4)
From self and male partner working in agriculture	28 (32.2)
From parents working in agriculture	6 (6.9)
Selling	13 (14.9)
Other (i.e. teacher)	9 (10.3)
No mention	8 (9.2)
Monthly income (US$1 = 13 Cordoba in 2003)	
0 (US $0)	43 (49.4)
1–199 Cordoba (< US $15)	5 (5.7)
200–399 Cordoba (US $15–30)	7 (8.0)
400–599 Cordoba (US $31–46)	10 (11.5)
600–799 Cordoba (US $47–61)	7 (8.0)
≥ 800 Cordoba (≥ US $62)	5 (5.7)
No mention	10 (11.5)
Education	
No formal education	29 (33.3)
Primary incomplete	44 (50.6)
Primary complete	3 (3.4)
Secondary incomplete	9 (10.3)
Secondary complete	0 (0.0)
Other	2 (2.2)
Literate (can read or write)	49 (56.3)
Household size	
<5 people	19 (21.8)
5–9 people	52 (59.8)
≥ 10 people	16 (18.4)
Household structure	
Nuclear	34 (44.7)
Multigenerational, matrilocal	33 (37.9)
Multigenerational, patrilocal	2 (2.6)
Single parent	7 (9.2)
Marital status	
Single	28 (32.2)
Married	23 (26.4)
Union libre (free union)	34 (39.1)
Widowed	2 (2.3)
Divorced	0 (0.0)
Living with the father of her children	58 (66.7)
Does not have electricity	67 (77)
Does not have potable water	43 (49.5)
Health facility used	
Health post	45 (51.7)
Health centre	29 (33.3)
Hospital	1 (1.1)
Other	6 (6.9)
None	5 (5.7)
Distance	
<1 hour	19 (21.8)
1 hour	26 (29.9)
1.5 hours	7 (8.1)
2 hours	16 (18.4)
>2 hours	14 (16.1)

Average household size is just under seven. Thirty-five women (40%) lived in multigenerational households (children, parents, grandparents, siblings, and siblings' children). Of the multigenerational households, 33 followed matrilocal kinship patterns, where conjugal partners reside with women's mothers after coupling or marriage. This residence pattern reflects the importance of female-centred households where grandmothers and other women in extended kin networks are responsible for children's caretaking. Twenty-eight women (32%) are single, 34 women (39%) are in a free union (*union libre*, *acompañado*), and 23 women (26%) are married (*casada*). From these statistics we can understand that women make decisions under the influence of family members and of coresident male partners.

Regarding women's SES, 49 women (56%) are literate, a notably lower percentage than the national rate of 67% (PAHO, 2002). Twenty-nine women (33%) have no formal education, and 44 women (51%) have not completed primary school. In focus groups, when asked why they stopped going to school, many women cited financial strain, the need to work to support siblings or parents, and the distance from their homes to schools.[16] For instance, one 17-year-old woman in the focus groups stated that her boyfriend would not let her return to school, in her words, 'because we're poor'. Several women also talked about having to discontinue formal education to help out with household chores or the care of younger siblings while their brothers were able to continue schooling, reflecting how poverty interacts with gender ideologies to constrain poor women's educational opportunities. In the analyses that follow, access to potable water and electricity were considered as proxy measures of household SES (these are common proxies used by the DHS as well), along with other measures, including education, income, and access to health facilities. In our sample, 50% of women did not have access to potable water and 77% did not have access to electricity, indicating overall low household SES among this sample. Illustrating the inaccessibility of health care, over half of women (51%) reported using a health post for regular medical care. The range of time needed to travel to a health facility was between 30 minutes and 6 hours, with most women travelling over one hour and by foot.

Reproductive health characteristics

Table 2 describes the reproductive health characteristics of the 87 women who completed questionnaire interviews. The average age at first sexual intercourse is 15.8 years. The average number of children is 4, which is slightly higher than the 2002 national average fertility rate of 3.8 (PAHO, 2002). Forty-nine women (56%) use some type of family planning method. Depo is by far the most commonly used contraceptive method, used by 30 women (61% of the 49 women who use family planning). This clear preference for Depo is the outcome that we attempt to explain in the analyses that follow. The birth control pill is only used by seven women (14% of those who use contraception). Five women reported having been sterilised, three women used condoms, and three women had IUDs. No women reported using traditional methods.

Marital status and contraceptive choice

Table 3 shows two 2×3 tables presenting the results of the Pearson chi-square analyses testing our two hypotheses. The first section of the table shows a significant association

Table 2. Women's reproductive health characteristics ($n = 87$).

Variable	*n* (%)	Mean	Std dev	Min	Max
Age at first sexual relation (years)		15.8	2.4	11	26
Number of children		4.2	3.2	0	14
0	1 (1.1)				
1–3	45 (51.7)				
4–6	25 (28.7)				
7–9	9 (10.3)				
≥ 10	7 (8.0)				
Uses a family planning method	49 (56.3)				
Does not plan	38 (43.7)				
Contraceptive method ($n = 49$)					
Injection (Depo- Provera)	30 (61.2)				
Birth control pill	7 (14.3)				
Sterilisation	5 (10.2)				
Condom	3 (6.1)				
IUD	3 (6.1)				
Traditional methods	0 (0.0)				
No mention	1 (1.1)				

between marital status and contraceptive outcomes (chi-square = 5.06; $p < .10$). Of single women, 19 women (59%) do not use planning, nine (28%) plan with Depo, and four women (13%) plan with other methods. Of women who are married or in *union libre*, 19 (35%) do not use family planning, 21 (39%) plan with Depo, and 14 (26%) plan with other methods. While this table shows significant differences across type of family planning by marital status, it is important to note that differences being detected are between three groups of women, including those who do not plan. For both single and married women, Depo is the preferred contraceptive method among women who are using family planning. Furthermore, all women who are married (or in unions) use planning at higher rates (this makes sense, since single women are less likely to be sexually active). To test this association between marital status and family planning, we ran a separate chi-square test, where planning was recoded as a dichotomous variable (0 = did not plan; 1 = planned, with all methods combined). The results, shown next to hypothesis 1 do reveal a significant association between marital status and contraception use (chi-square = 5.07; $p < .05$). In other words, these findings show that marital status is associated with family planning generally, although not necessarily with Depo in particular.

Table 3. Influence of marital and socioeconomic status on planning outcomes.

	Variable	Not planning *N* (%)	Planning with Depo *N* (%)	Planning with other method *N* (%)
Hypothesis 1	Single	19 (59.4)	9 (28.1)	4 (12.5)
	Married/Union Libre	19 (35.2)	21 (38.9)	14 (25.9)
	Chi square = 5.06*			
	[Not planning versus planning with any method Chi square = 5.07**]			
Hypothesis 2	No electricity	32 (47.8)	25 (37.3)	10 (14.9)
	Has electricity	6 (31.6)	5 (26.3)	8 (42.1)
	Chi square = 6.62**			
	No potable water	20 (47.6)	12 (28.6)	10 (23.8)
	Has potable water	18 (40.9)	8 (18.2)	18 (40.9)
	Chi square = 1.48			

*$p < .10$.
**$p < .05$

Focus group data can help us further understand women's contraceptive behaviour, offering possible explanations for the associations between gender relations – reflected in the martial status variable– and family planning practices. A common theme in the focus groups was women's discussion of their male partners' disapproval of contraceptive use and family planning generally. For instance, one woman said her partner insisted she 'obey men's laws' and not use contraception, which effectively discouraged her from using anything other than traditional methods. Other women in the focus group interviews reiterated men's disapproval of contraception, saying that their husbands or *compañeros* actively discouraged them from going to health centres to obtain contraception. This disapproval on the part of male partners leads women to prefer Depo, which they describe as 'invisible', given its injectable form and long-acting nature. A 20 year-old focus group participant who was in a '*compañerismo*' relationship with a male partner but who didn't want to get pregnant until she was certain the relationship would last told us that Depo's invisibility was its main appeal for her. In her words, 'My partner said I couldn't plan, but I did it anyway'. For instance, several women described disguising their visits to health facilities by telling their male partners they were going to obtain health care for their children or 'vitamins' for themselves.[17] One participant, Ana, a mother of three in her thirties who had been living with her partner for approximately eight years said, 'I tell him [when I go to the clinic] that I'm getting *inyecciones*'. (Here, 'injections' refers to a multivitamin solution given intravenously, a common remedy administered through the public health system for a variety of physical complains, such as fatigue or headache.) For women like Ana, Depo is a valued contraceptive not only because it is invisible, but because her journey to the nearest health facility takes about one and a half hours by foot, thus Depo's longer-acting nature means she can make fewer visits to the clinic, requiring fewer confrontations with her partner's suspicion. In summary, women are strategic in their communications with their partners, recognising male disapproval as a constraint on contraceptive choice, but finding ways around this constraint.

SES and contraceptive choice

Table 3 also shows the results of chi-square analyses that test our second hypothesis related to socioeconomic variables and women's contraceptive use. Of the variables used as proxies for SES, a significant predictor of contraceptive method was access to electricity ($p < .05$). Global health and development like the World Bank organisations and the Nicaraguan government use electricity access as an indicator of SES in resource-poor settings (where waged employment is uncommon or irregular). For women without electricity in their homes, 37% used Depo; a smaller percentage of women with electricity used Depo (26%). The opposite pattern was true for other planning methods: 15% of women lacking electricity used methods other than Depo.

This finding about electricity access as related to higher Depo use is consistent with our hypothesis 2, that Depo is used by women of lower SES, since access to household electricity is a strong indicator of low household SES (Angel-Urdinola et al., 2008). On the other hand, Table 3 shows that the chi-square test of association between potable water access and family planning was not significant. Also, while not shown in Table 3, chi-square analyses of other indicators of SES (income, education, income, and distance travelled to

health facility) did not reveal significant associations with contraceptive use. However, our inability to show statistical significance between these proxy measures of SES and contraceptive use may reflect our small sample size. Other research has demonstrated an influence of household income and distance to health facilities on contraceptive use (Angel-Urdinola et al., 2008; ENDESA, 2008). Notable is that there is very little variance in our sample on either 'income' or 'distance', because most of the women in our study live in households with very little cash income (nearly half the sample reported having zero cash income; see Table 1) and most also live relatively far from health facilities (nearly 88% of the sample reported travelling over one hour to reach the nearest health facility). This lack of variance on these variables makes it difficult to detect significance in the associations between our proxies for SES and contraceptive use.

To illustrate the association between SES and Depo use, we present a brief synopsis of one focus group participant, Karla, a 17 year-old who lives with her male partner (they do not have children) in a *union libre* in a household shared by her extended family, in a house without access to electricity (indicating their low SES per our definition described above), which is shared by Karla's mother and three younger siblings. Karla and her partner both depend on seasonal income from the biannual coffee harvest, which amounts to less than $50 USD each, two times per year. Karla states that her partner controls this limited income, even though she would like to use it to purchase food for her younger siblings and to go back to school. Karla has finished primary school but her partner doesn't want her to continue her education because of household economic constraints (attending secondary school would require paying for books and uniforms). Without income of her own, under her control, Karla is unable to pursue further education, further limiting her potential future economic autonomy. Her partner's effective control over their limited economic resources is a concern for Karla, contributing to her desire to delay childbearing. Karla uses Depo without her partner's knowledge or approval because she wants to delay having children until she has the economic ability to adequately provide for them.

Other sociocultural influences on contraceptive use

Beyond the influence of gender norms and economic constraints, other sociocultural factors such as education and religion influence women's knowledge and use of contraceptives. During focus groups, women described having very limited access to sexual health information in the Nicaraguan education system. Most women gain their knowledge of reproductive health through participation in health education *charlas* (talks) sponsored by NGOs. Consistently, women referred to the lack of reproductive health education in schools as a barrier to family planning. They also cited the disapproval of organised religion as a factor shaping both limited reproductive health education in schools and limited access to contraception. Women were aware of the Church's influence over the official educational curriculum, saying that schools didn't include sexual health education because 'the Church doesn't want that information included'. Several women in the focus groups cited popularly held beliefs that inhibited reproductive choice, such as the idea that contraception is 'against God's law' ('*contra la ley de Dios*'). Two participants said that their male partners used religious ideas, such as 'you should raise all of the children that God gives you', as opposition to family planning.

Despite these constraints, women exert agency in relation to family planning. For instance, one focus group participant seemed compelled by the Church's condemnation of contraception but stated she would use contraception if she were in a committed relationship. As mentioned above, some women strategically negotiate their male partners' disapproval by disguising family planning as visits to obtain vitamin injections for their children. Women cited severe economic hardships and the cost of additional children as primary motivators for their family planning, despite gendered and structural constraints. Indeed, it is notable that more than half our sample (56%) use some form of family planning. Given severe male disapproval and an average distance of more than one hour's walk to the nearest health facility, women's use of family planning is testament to their desire to limit family size in order to enhance individual and family wellbeing.

Discussion and implications

This article situates women's use of Depo-Provera within the context of gendered and structural constraints and the controversial social history of Depo. The global influences on women's use of Depo include the priorities of international family planning organisations and national health policies, alongside political and economic constraints, all of which structure contraceptive availability and accessibility. Local constraints on women's reproductive choices in Nicaragua include gender ideologies and practices that delimit women's ability to make family planning choices, pushing them to plan 'a escondido', hidden from view of husbands and male partners. Our argument is not intended to stigmatise women's use of Depo, but rather to understand Depo use as a choice situated within structural constraints and gendered inequalities. With other anthropologists of reproduction, we see women as agents, who make choices about reproduction in the social and cultural contexts not entirely under their control (Krause & De Zordo, 2012; see also Montoya, 2002). Situating women's contraceptive use within social-structural determinants reveals how reproductive choices are 'rational' reflections of local cultural realities.[18]

To demonstrate the influence of men on women's contraceptive use, in this article we have used marital status as a proxy variable and conducted chi-square tests of association between marital status and family planning use. We interpret these statistical findings with caution, keeping in mind that our small sample size may have limited our ability to see significant patterns of associations. Our findings show generally that women who are married (and in *union libre*) are significantly more likely to use contraception (Depo or any method), probably reflecting the fact that married women and women in partnerships are more sexually active than single women. It bears mentioning here that, while in other cultural contexts, the category 'single' might mean women who are sexually active but not in committed relationships (and therefore more likely to use contraceptives), in this sample, 'single' connotes women who are in fact not involved in sexual relationships with men, and who therefore are also less likely to use contraception. Our study findings reflect national-level data for Nicaragua that show that contraceptive use generally, and use of *la inyección* in particular, is more common among women who are *casada* (married), and *unida* (in unions), than those who are *separada* (separated) or *soltera* (single) (ENDESA, 2008, p. 136).

While our statistical results cannot explain *why* women prefer Depo over other methods of family planning, to help explain this preference, we use our qualitative data. In focus groups, women repeatedly described how their male partners actively disapproved of their use of family planning. In the face of such disapproval, women turn to Depo because it is 'invisible' to men, and they can essentially hide their use of Depo from male partners (e.g. by telling them they were going to health facilities to obtain vitamin injections or health care for their children). We have interpreted these findings as evidence of women's agency in the face of structural and gendered constraints on contraceptive access.

Our findings also show that Depo use is significantly associated with one important indicator of SES: household access to electricity. This variable is used by the U.S. Agency for International Development in their DHSs to measure SES in developing countries where traditional measures of SES, such as income, are less reliable. Our findings show that women who lack household electricity (those of lower SES) use Depo at significantly higher rates than women with household electricity. Other proxy measures of SES in our dataset (income, education, and access to potable water) were not significantly associated with contraceptive use and do not support our hypothesis about this sample; however, our relatively small sample size and a lack of variation on these key economic indicators presents a challenge when searching for statistical significance between quantitative variables.

In focus groups, women clearly expressed that a lack of access to formal education and secondary school is a determinant of reproductive health inequalities. From youth, boys are allowed to continue school while girls cannot; in adulthood, male partners discouraged women from returning to complete their educations. Gender inequities shape access to education, which in turn influences women's ability to exercise reproductive freedom. In order to expand women's reproductive choices, therefore, both economic and educational realities need to be addressed. For example, family planning programmes could include income generation activities for women, and intersectoral action between public health and education could build sexual health education programmes for boys and girls, men and women, across the life course.

Contrary to our expectations, we did not find that distance to a health facility was a significant predictor of Depo use for women in our sample. However, because all women in this study live in rural communities and travel relatively long distances by foot to reach the nearest public health facility, there is limited variation on our variable 'distance', limiting our ability to assess statistical association with contraceptive use. Nonetheless, it is important to bear in mind that other research has found that long distances to health care facilities does influence women's choice of long-acting contraceptives such as Depo (Angel-Urdinola et al., 2008).

Our findings emphasise the importance of working towards greater gender equity as a means of increasing women's reproductive choices and overall reproductive health. As long as men exercise strong influence on women's contraceptive behaviour, the Cairo aim of gender equity in reproductive health will remain unrealised. Future research with larger samples of women needs to address the social and cultural determinants of Depo-Provera use, rather than take women's use of Depo in resource-poor countries as simply a reflection of individual choice. In particular, we would hope that health surveys might begin to incorporate variables to assess gender equity, so that researchers

can include gender equity as one of many sociocultural influences on women's reproductive health. In practice, our findings support the efforts of reproductive health programmes to include men and to increase dialogue between men and women about family planning decisions generally and contraceptive use in particular (Gribble, 2003).

While the current Nicaraguan government has increased health spending as a per cent of national GDP, structural inequities in health care access persist, especially between urban and rural areas (ENDESA, 2008). Nonetheless, in the past decade, national politics around reproductive health in Nicaragua have begun to shift. For instance, the Nicaraguan Ministry of Health has adopted post-Cairo language of reproductive rights into its official protocols for family planning and reproductive health services (MINSA, 2008). These documents specifically call for men to assume responsibility for sexual and reproductive health and to be involved in family planning programmes. This discursive shift is notable and should be commended, however it is unclear whether the shift in policy has changed actual conditions of reproductive health for women and men in local communities. Certainly, as feminist scholars have argued (see Heumann, 2014; Kampwirth, 2004), there has historically been a disconnect between official Sandinista policy and the demands of women's movements when it comes to women's reproductive health. Therefore, further research is needed to assess whether the current Sandinista government's shift in discourse and policy has resulted in improvements to reproductive health access and outcomes among Nicaraguan women.

Notes

1. Depo-Provera® is the registered name for the pharmaceutical formula depot medroxyprogesterone acetate, a long-acting, reversible hormonal contraceptive currently licensed in the USA by the company Pfizer.
2. The 2008 ENDESA survey found that use of Depo in 2006–2007 among women who were sexually active varied by age, with approximately 74% of sexually active women under 20–24 and 25–29, 63% of women 30–34 and 45% of women 35–39 using Depo. These trends indicate Depo use is increasingly prevalent among younger Nicaraguan women.
3. Rates of Depo use for sexually active women (15–49) in Central American nations in 2006 are: Costa Rica 5.9%, Guatemala 9.0%, Honduras 13.8%, El Salvador 18.3%, and Nicaragua 23.4%. Rates of sterilization for these countries show that Nicaragua is similar to regional trends (ENDESA, 2008, p. 141).
4. Nationally, about 30% of women obtain family planning methods from the private (for profit) sector, 5% from the NGO PROFAMILIA, and the remainder from public health centers or hospitals (ENDESA, 2008).
5. Traditional methods of birth control refer to methods that do not require biomedical technology, namely the fertility awareness method ('rhythm') and withdrawal.
6. We define modern birth control methods as those requiring professional or biomedical technologies, prescriptions, and services.
7. The major suppliers of Depo were international reproductive health associations such as the International Planned Parenthood Foundation (IPPF) and the United Nations Population Fund (UNFPA) (Hartmann, 1987).
8. Concerns about Depo's safety persist despite the 1992 approval. In 2004, the FDA ordered a black-box warning to be printed on Depo packaging to alert users and clinicians about the risk of losing bone density, and currently recommends that women do not use Depo for more than two years, unless the use of other contraceptives is inadequate or implausible. See black box warning at http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm154784.htm.

9. A cultural aversion to invasive methods in Nicaragua may also explain the choice of Depo over IUDs or other surgical methods (Ministerio de Salud [MINSA], 2008).
10. While we were unable to ascertain the purchasing agreement between Nicaragua's MINSA and its supplier of Depo-Provera, the political economy of these national-level drug scheduling arrangements remains an important arena for further research.
11. For an in-depth examination of the challenges of risk/benefit assessments in health interventions in resource-poor settings, see Petryna, 2006.
12. The (DHS is a population-based, national survey of population and health administered by US Agency for International Development. See http://dhsprogram.com.
13. While our focus group discussions seemed quite open, participants were somewhat inhibited in discussing their personal sexual or reproductive histories. We believe this is more a reflection of cultural inhibition than a response to the identity of the facilitators.
14. *Union libre* or 'free union' is a term used locally to indicate long-term conjugal relationships assumed to be monogamous that aren't predicated on formal, legal marriage.
15. Note, one 75-year-old was included since the questionnaire assessed other reproductive health issues besides contraceptive use (namely, cervical and breast cancer awareness); however, the 75-year-old was an outlier as most women were of the reproductive ages included in the Nicaraguan Demographic and Healthy Surveys (ENDESA, 2008).
16. At the time of study, there was only one secondary school in the region, making education beyond primary school inaccessible for many young people.
17. Interestingly, a similar phenomenon has been reported in Zimbabwe, where women said they received their Depo injections in tandem with taking their children to the clinic in order to dispel their partner's suspicions that they were planning (Kaler, 1998).
18. For an excellent discussion of discourses of the 'irrationality' surrounding the reproductive choices of poor women, women of colour, and Global South women, see Krause and De Zordo, 2012; also see, De Zordo, 2012 for a discussion of health professionals' portrayal of low income Afro-Brazilian women's reproductive choices as 'irrational'.

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No potential conflict of interest was reported by the authors.

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