Interest in Vasectomy in a Border Population with Limited Access to Female Sterilization

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Abstract

Researchers speculate that cultural perceptions explain why Latinos are less likely to undergo vasectomy compared with non-Hispanic whites in the United States (US), but there is limited evidence supporting this hypothesis. We used multiple sources of data from the Border Contraceptive Access Study to examine interest in vasectomy among Latino couples in El Paso, Texas. Interviews with women who do not want more children collected information on male partners' willingness to undergo vasectomy and the prevalence of vasectomy use in social networks. Focus groups with men explored attitudes toward the procedure. In ordered logistic regression models, higher education and receipt of government assistance were associated with greater interest in vasectomy, while speaking English at home was not. Vasectomy was common in women's social networks, and men were willing to get a vasectomy, but lacked necessary information and resources. Health education and affordable vasectomy services would increase use among Latino men.

Introduction

Although vasectomy is less invasive, more cost effective, and carries fewer risks of complication than laparoscopic tubal ligation, the prevalence of vasectomy is considerably lower than that of female sterilization (Barone, Johnson, Luick, Teutonico, and Magnani 2004; Eisenberg, Henderson, Amory, Smith, and Walsh 2009; Jayaraman and Mann 2012; Pile and Barone 2009; Shih, Turok, and Parker 2011; Turok, Shih, and Parker 2011). Worldwide, more couples rely on female sterilization than vasectomy, except for a nine countries[1] where the prevalence of vasectomy is higher than female sterilization. In the United States (US) there is a considerable gender difference in sterilization, 13.1% of the married men reported using vasectomy as their contraceptive method compared with 21.1% of married women who underwent sterilization (Anderson, Jamieson, Warner, Kissin, Nangia, and Macaluso 2012).

This sterilization paradox is more pronounced among racial/ethnic minorities (Anderson et al. 2012; Barone et al. 2004; Borrero, Moore, Creinin, and Ibrahim 2010; Borrero, Moore, L., Schwarz, Akers, Creinin, and Ibrahim 2009a; Eisenberg et al. 2009; Turok, Shih, and Parker 2011). Non-Hispanic whites have considerably higher rates of vasectomy use than non-Hispanic black and Hispanic men whereas non-Hispanic black and Hispanic women have the highest rates of female sterilization (Borrero, Schwarz, Reeves, Bost, Creinin, and Ibrahim 2009b; Bumpass, Thomson, and Godecker 2000; Eisenberg et al. 2009; Shih, Turok, and Parker 2011). Among married respondents in the National Survey of Family Growth (NSFG), 17.4% of non-Hispanic white men reported that they had a vasectomy and 17.7% of non-Hispanic white women were sterilized, compared to only 4.4% of non-Hispanic blacks and 5.7% of Hispanic men with vasectomies and 32.7% non-Hispanic blacks and 28.6% Hispanic women who were sterilized (Anderson et al. 2012).

Among the possible explanations in this paradox are limited access to health services, lack of knowledge and information, and cultural preferences (Borrero, Moore, Creinin, and Ibrahim 2010; Borrero et al. 2009b; Eisenberg et al. 2009; Shih, Turok, and Parker 2011). Some researchers have hypothesized that lower use or no access to medical care might explain why fewer non-Hispanic black and Hispanic men undergo vasectomy (Anderson et al. 2012; Borrero et al. 2009b). It also has been argued that the health care system facilitates women's access to female sterilization while hinders access to vasectomy for men (Barone et al. 2004; Shih, Turok, and Parker 2011). For instance, Anderson et al found that Medicaid

[1] Australia, Bhutan, Canada, Mozambique, Netherlands, New Zealand, Republic of Korea, Spain, and United Kingdom (United Nations. 2012. "World Contraceptive Use 2012." United Nations, Department of Economic and Social Affairs, Population Division.)

paid for 40% of tubal ligations but only 0.5% of vasectomies (2012). Other supply side barriers such as lack of infrastructure, funding and trained staff may also limit access to vasectomy (Shih, Turok, and Parker 2011). Additionally, public funding for family planning is usually spent on programs for women, and when these funds are spent on programs for men, the programs usually target teenagers and young adults who are less likely to be interested on vasectomy (Barone et al. 2004).

In contrast, in countries where vasectomy prevalence is higher than female sterilization, such as Canada and the UK, the procedure is available free of charge through the national health care system (Pile and Barone 2009). In developing countries, vasectomy is also publicly available at no cost, and promoting vasectomy through wives and vasectomized men has been a successful strategy to increase its prevalence (Vernon 1996).

Although there is little evidence that racial/ethnic minority men receive sterilization counseling less often than non-Hispanic whites, Borrero et al found that there is a low incidence of vasectomy counseling for US men overall (Borrero, Moore, Creinin, and Ibrahim 2010). Among the reasons suggested are that most providers focus their counseling efforts on women so they do not offer male contraceptive methods or counseling; also, doctors who perform vasectomies do not have the same chance to offer counseling about sterilization as obstetrician-gynecologists (Borrero, Moore, Creinin, and Ibrahim 2010; Shih, Turok, and Parker 2011). Cultural preferences are often invoked as a residual explanation after other variables have failed to attenuate differences in the use of vasectomy across groups or populations. However, only rarely have cultural markers been tested directly. Moreover, even in countries where one might expect a pronounced rejection of vasectomy such as Brazil, Guatemala, Iran, and Mexico there is considerable use of the method among highly educated men, just as in the United States (Keramat, Zarei, and Arabi 2011; Prieto-Diaz, Mendez, Medina, Trujillo, and Vasquez 2004; Vernon 1996). Additionally, in these countries men and women who rely on vasectomy have proven to be effective examples helping convince others about the effectiveness and convenience of the method.(Bertrand, Santiso, Linder, and Pineda 1987; de Castro, Mastrorocco, de Castro, and Mumford 1984; Keramat, Zarei, and Arabi 2011; Ringheim 1999; Santiso, Bertrand, Pineda, and Guerra 1985; Vernon 1996). In fact, studies from Latin American and Asian countries show that education and counseling play an important role in increasing vasectomy prevalence (Keramat, Zarei, and Arabi 2011; Vernon 1996).

In this paper, we seek to identify factors associated with interest in vasectomy among Hispanic couples in a US border community. First, we use data from a prospective study of oral contraceptive users in El

Paso, Texas, to assess the proportion and characteristics of male partners who had tried to undergo vasectomy or would be willing to undergo vasectomy among women who do not want more children. Next, using data from semistructured interviews conducted 18 months later among women who had said they would want to be sterilized we observed the prevalence of vasectomy within social networks. Finally, we use data from two focus groups conducted with partners of a subsample of the participants to gain insight into Hispanic men's attitudes towards vasectomy.

Data

Data for the present analysis come from the Border Contraception Access Study (BCAS), a prospective study of oral contraceptive users in El Paso, Texas conducted from December 2006 to December 2008. Women who obtained their pills in publicly funded family planning clinics in El Paso (n=532) or over the counter from pharmacies in Mexico (n=514) were interviewed four times over nine months; ninety percent of the 1,046 participants completed the fourth interview. A large percentage of this sample reported not wanting more children (Potter, White, Hopkins, McKinnon, Shedlin, Amastae, and Grossman 2012). To better understand women's perceived options about permanent contraception, in the fourth interview, women were asked if their partner had ever tried to obtain a vasectomy, and whether they thought their partner would be willing to undergo one.

To obtain an in-depth understanding of women's decisions about ending childbearing and their interest in and barriers to permanent contraception, we conducted semi-structured interviews with 120 BCAS participants who declared in the fourth interview that they wanted to get a sterilization, and had two or more children, were at least 21 years old (the age requirement for Medicaid-funded sterilizations). The interviews took place between March and June 2010, approximately 18 months after the fourth/final interview,. In addition to questions about female sterilization, we asked women whether they knew other women whose partners had had a vasectomy, what kind of relationship they have with these women, when and where these women's partners obtained the vasectomy, and how satisfied the other women and their partners were with this method.

Finally, in June 2010, we conducted two focus groups with men (n=13) about their childbearing desires and attitudes toward male and female sterilization. Focus group participants were recruited through women who completed the follow-up interviews and whose partners did not have a vasectomy. Both focus groups were conducted in Spanish, recorded and transcribed. At the end of the focus group, men completed a self-administered sociodemographic questionnaire with information on their age, number

of children, country of origin, educational level and whether they had US health insurance. Men provided their oral consent to participate and received $xx for taking part in the group. The information from these focus groups and the in-depth interviews from women whose partners had had a vasectomy will provide an insight of some attitudes toward vasectomy among Latinos in El Paso.

Methods

For our analysis of male partners' perceived interest in vasectomy, we included women who reported at the fourth interview in the prospective study that said they were married or lived with a male partner, had children and did not plan to have additional children (n=470). We constructed an ordinal outcome variable for men's willingness to undergo vasectomy. Women who responded yes to the question "Has your current partner ever asked to get a vasectomy?" were coded as 2 for the outcome. If they answered no, but responded yes to the follow-up question, "Do you think your partner would be willing to get a vasectomy?" they were given a 1 for the outcome. Women who responded no to both questions were coded as zero.

Next, we used ordered logistic regression to assess the association between partnership characteristics, socioeconomic status, cultural markers and variables related to women's contraceptive service use and preferences. and partners' degree of willingness to undergo vasectomy. Partnership characteristics included whether the couple was married (versus cohabiting), if the relationship lasted ≥ 5 years, and whether the partner provides economic support; no other partner-specific data was collected in the BCAS interviews. We used level of education, whether the woman had health insurance in the U.S., and receipt of U.S. government assistance (e.g., Temporary Assistance to Needy Families, food stamps) as indicators of socioeconomic status. Cultural markers included language used at home (English, Spanish, both equally) and whether the participant has relatives she visits in Mexico at least once a month. Finally, our variables for contraceptive services and preferences were source of pills at baseline (US clinic, over the counter in Mexico), ever received contraceptive counseling, desire for female sterilization, and believes that the body needs a rest from the pill; we have found the latter variable reflects women's larger contraceptive knowledge.

To help to understand our model we calculate the predicted probabilities for men's perceived willingness to undergo vasectomy for each level of women's level of education and governmental assistance. These predicted probabilities were calculated for married women, who want sterilization, do not have U.S. insurance, obtain their pills in a U.S. clinic, have received counseling about contraception,

whose marriages have lasted more than 5 years, whose husbands provide economic support, speak Spanish at home do not think that their bodies should take a break from the pill, and do not visit relatives in Mexico at least once a month.

In order to have a better understanding of the attitudes towards vasectomy among the population under study, two focus groups among the partners of some of the women interviewed in the sterilization study in June 2010. The focus groups sessions were tape recorded and transcribed in Spanish. Multiple readings of the transcript were carried out to identify the themes in men's attitudes. The selected quotes presented here are representative of the themes and were translated from the original Spanish. This study received approval from the Institutional Review Boards at University of Texas at Austin and the University of Texas at El Paso.

Results

<<Table 1>>

The demographic characteristics of low-income pill users who reported having a partner and wanting no more children at the last interview are shown in Table 1. More than 70 percent of the analyzed women were over age 30 and about 3 out of 5 had three children or more. About 63 percent were married, almost 70 percent of the women in a relationship have been with their partners for 5 years or more and the vast majority (79%) of these women received economic support from their partners. About 40 percent completed high school, 11 percent reported having U.S. health insurance, and 77 percent received some kind of assistance from the U.S. government. About 80 percent speak Spanish at home and 64 percent visit relatives in Mexico at least once a month. Most of them want to undergo sterilization (71%) and have received counseling about contraceptive methods (72%) but only half of them do not think that the body needs to take a rest from the pill.

<<Table 2>>

Overall, 13% of women reported that their partner had tried to obtain a vasectomy and 18.9% thought that their partners would undergo vasectomy (Table 2). The proportion of women reporting their partners have asked for vasectomy shows differences by socioeconomic characteristics. For instance, married woman have a higher proportion than their unmarried counterparts (16.1% and 7.6%). This proportion also differs by level of education, so women with less than high school show the lowest proportion whereas women with more than high school the highest (9.9% vs. 18%). Having U.S. health

insurance (9.4%), wanting sterilization (11.6%) and obtaining contraceptive pills in Mexico (9.3%) present lower proportions that not having U.S. insurance (13.4%), not wanting sterilization (16.3%), and obtaining contraceptive pills at U.S. clinics (17.9%). The proportion for women whose partners do not provide economic support (5.8%) is less than half the proportion of those whose partners provide economic support (14.6%).

The proportion of women who thought their partners would be willing to get a vasectomy usually follows the same pattern than the highest degree of willingness except for wanting sterilization, source of pills and seeing relatives once a month in Mexico. The proportion for women wanting sterilization is 21.5% while for those not wanting to be sterilized is 12.6%. The proportion for women obtaining their pills in Mexican pharmacies (20.8%) is higher than the proportion of those who obtain their pills in U.S. clinics (16.4%). Differences by language used at home are more pronounced for women whose partners had sought to obtain vasectomy (11.9% only Spanish vs. 22.7% only English) than for those who reported that they thought their partners would be willing to obtain vasectomy (20.1% only Spanish vs. 18.2% only English).

<<Table 3>>

Table 3 shows the coefficients of the fitted ordinal logistic regression. Indicators of socioeconomic status were the only variables significantly associated with greater degrees of willingness to undergo vasectomy significantly associated with willingness to undergo vasectomy. The cultural markers were not associated with men's perceived degree of willingness to undergo vasectomy, after controlling for other covariates. Although none of the variables of partnership characteristics and contraceptive services and preferences are significant at the 0.05 level, their coefficients have the expected sign. The indicative variable of thinking that the body does not need to take a break from the pill is negatively (and significant at the 0.10 level) related to willingness to undergo vasectomy.

Having U.S. insurance is negatively associated with willingness to undergo vasectomy once controlling for the rest of the variables. This might be explained by the fact that a very small proportion of the population under study has U.S. health insurance. It also can be due to the fact that insured women are more likely to obtain sterilization or other contraceptive methods than vasectomy. Receiving U.S. government assistance also predict a significant and greater likelihood of willingness to undergo vasectomy.

Figure 1 illustrates the predicted probabilities for men's perceived wiliness to undergo vasectomy according to women's level of education. Women who completed high school have higher probabilities of having a partner classified as having a greater degree of willingness to get a vasectomy, especially those with some college education.

Figure 1. Predicted probabilities for men's perceived willingness to undergo vasectomy for each level of women's level of education[2]

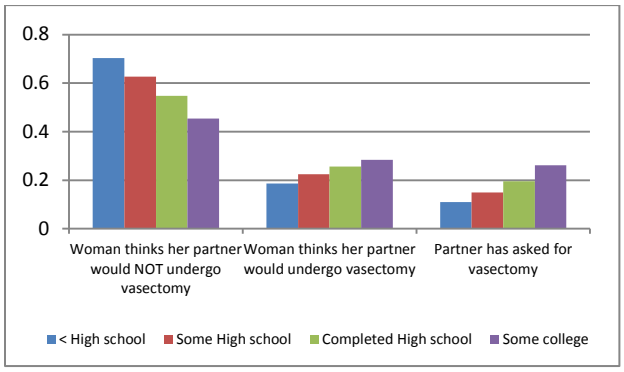
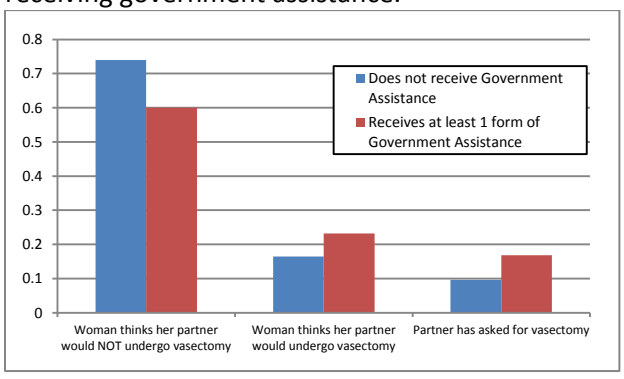


Figure 2 depicts the predicted probabilities for the typical women described above by condition of receiving government assistance. The probability of having a partner classified as having greater degree of willingness are higher for those women who received at least one form of government assistant.

Figure 2. Predicted probabilities for men's perceived willingness to undergo vasectomy for condition of receiving government assistance.[3]



[2] These predicted probabilities were calculated for married women, who want sterilization, do not have U.S. insurance, obtain their pills in a U.S. clinic, have received counseling about contraception, whose marriages have lasted more than 5 years, whose husbands provide economic support, speak Spanish at home do not think that their bodies should take a break from the pill, do not visit relatives in Mexico at least once a month, and receive government assistance.

[3] These predicted probabilities were calculated for married women, who want sterilization, do not have U.S. insurance, obtain their pills in a U.S. clinic, have received counseling about contraception, whose marriages have lasted more than 5 years, whose husbands provide economic support, speak Spanish at home do not think that their bodies should take a break from the pill, and do not visit relatives in Mexico at least once a month.

Follow-up interviews

Among the sub-sample of women re-contacted for the semi-structured interviews, 47.5% said they knew at least one woman whose partner underwent vasectomy (Table 4). The most common relationships participants had with these women were friendship (27.5%) or were relatives apart from sister or mother (21.7%). Those women who knew couples that relied on vasectomy and know where the procedure took place, said that approximately half (50.6%) of the male partners obtained the procedure in Mexico while the remaining men had their vasectomy in the US. Women also reported that 90% of their relatives, friends and acquaintances, were very satisfied with the procedure and only 1 percent was very unsatisfied.

<<Table 4>>

Focus groups

Male focus group participants ranged in age from 28 to 49 years (mean 37 years) and 76.9% had three or more children. Approximately 70% had not completed high school. Most of them (n=10) were born in Mexico and. Only three men had US health insurance.

Men had heard of multiple contraceptive methods, including condoms, pills, injections, IUDs and male and female sterilization, however, their overall contraception knowledge was limited. For example, most men did not have an accurate understanding of female sterilization, stating that it involves "*removal*" or "*cutting off the ovaries*" (FG-1R363). Although men perceived female sterilization has having advantages over other methods like the pill, they also heard that women experience depression and regret after the procedures. In discussing the main barriers to women getting a female sterilization in El Paso, men most frequently commented on the lack of economic resources and women's age.

Participants showed a broader knowledge of vasectomy than female sterilization. They stated that vasectomy was simpler than female sterilization. Although most men were open to the idea of getting a vasectomy, some participants expressed concern about possible changes in their libido following the procedure. However, men who knew someone that had a vasectomy provided detailed information about the procedure and recovery. and reported that vasectomy does not affect a man's sex life.

> *"I don't think so because my boss got the surgery and I don't think so. He tells me that his girlfriends call him. He also says to me, 'Get the surgery! Anyways, nothing happens.' (FG-1R543)"*

"Well, I know my uncle, he got the surgery. He is in Juarez and he says that it is normal that he feels the same as always, that nothing changes in his life, nothing at all. (FG-1R579)"

When we asked about the barriers to getting a vasectomy, participants mentioned lack of information and resources. Having to take days off work to recover and fear of losing their jobs as a result was reported by several men:

"Sometimes…, well in my case, I would like to get the surgery but I do not get it because a friend of mine told me that you have to spend one or two weeks without doing heavy work and my work is really heavy and I cannot spend one or two weeks without working (FG-1R743)."

"I would say that if you do that, then at work I should be given a chance to miss two weeks without losing my job (FG-1R771)."

They also mentioned the cost of the procedure as a barrier. As one man commented, not having to pay would make easier to decide undergoing vasectomy:

"If it was free,… it would be easier, you would think less about it because you do not have to pay anything that affects … your monthly budget. (FG-1R828)"

The focus groups also revealed that some Hispanic men are willing to undergo vasectomy, especially when their partners cannot obtain sterilization or they are having health problems.

"Sometimes, we also have to think about the woman, like when his wife has been sick in her last pregnancies and we have to consider that if she gets pregnant again she might not make it. If you have the solution, you can do it (FG-1R489)."

Men also mentioned that they would like to obtain more information about places to get a vasectomy and requirements for the procedure. They said that all the men they knew who underwent vasectomy obtained the procedure in Mexico and they did not know where to seek vasectomy services in El Paso.

"Well, I have honestly never seen or heard my friends here in El Paso saying to me 'no, go here or go there [to obtain vasectomy],' [but] they say this is in Juarez? Well my brothers-in-law, my cousins, all get surgery in Juarez, my friends from work were operated [on] in Juarez (FG-1R386)."

Some participants even considered living on the border an advantage since they can always go to Mexico to obtain affordable health care.

Discussion

The prevalence of vasectomy among Hispanic men in the US is considerably lower than that for non-Hispanic white men. Culture is one of the most commonly cited reasons for the low prevalence of vasectomy among US Hispanics. However, the evidence for these claims is limited. In fact, our cultural markers were not significantly associated with willingness to undergo vasectomy.

An ethnographic study conducted in Oaxaca, Mexico, found that the most cited reason to explain the decision to have a vasectomy, among men who underwent vasectomy in public clinics in Oaxaca, was their desire to help their partners to avoid suffering from pregnancies and use of contraceptive methods such as pills, IUDs, and tubal ligations(Gutmann 2007). In our focus groups, some men also mention that having a vasectomy is a way to help women to avoid more suffering. So, even in places where the "macho culture" prevails, there is a protective part of this cultural trait that can be used to increase acceptance of vasectomy. Moreover, successful vasectomy programs in Latin America have promoted vasectomy as an expression of love or concern (Ringheim 1999). Therefore, cultural barriers may be overcome through an adequate promotion.

In Latin American countries, vasectomy is also more prevalent among well-educated men and after counseling and promotion campaigns low educated men have accepted to undergo vasectomy. Thus, it is possible that culture and education are confounded since in the United States Hispanics have on average less educated. The present study supports that more education increases the likelihood of being willing to undergo vasectomy among Hispanics in a border city. The Latina women interviewed in BCAS also have misperceptions about the method and maybe even limited knowledge of reproductive physiology. In our focus groups, we also find that the negative attitudes towards vasectomy were generally due to misconceptions regarding the procedure. An effective way to improve men's education is knowing someone. In the focus groups, men who knew others had better knowledge and those men who know someone who underwent vasectomy are more knowledgeable and more willing to have a vasectomy. Previous research has found limited knowledge about vasectomy among minority men, so it is necessary to increase knowledge of men and women about vasectomy through counseling.

There is substantial evidence that social networks facilitate people's behavioral changes (Kohler 1997; Rindfuss, Choe, Bumpass, and Tsuya 2004). Knowing someone who had a vasectomy might change someone's prejudices about vasectomy because knowing someone who underwent vasectomy might provide information regarding the method itself as well as places and requirements to obtain this procedure. Furthermore, previous research, in Latin American and Asian countries, find that wives and men who underwent vasectomy are especially effective in promoting vasectomy (Keramat, Zarei, and

Arabi 2011; Vernon 1996). We found in our focus groups and in-depth interviews that knowing other men who had had vasectomy facilitates the decision to obtain one. However, we also found that the people that women knew and the people that men cited were not their closest relatives. It was friends, uncles, bosses at work who played the most important role in convincing or teaching about vasectomy.

However, there is evidence that access to services and economic constraints have played a role alongside negative cultural perceptions about vasectomy in reducing the prevalence of vasectomy in this population.

Limited access to health care has found to be a barrier to obtain vasectomy among minority men. In our focus groups, some men expressed willingness to undergo vasectomy but they claimed that they do not know where they can obtain it. They also said that they cannot afford the cost of vasectomy; mostly because they need to take days off from work. It seems that in some cases, limited resources more than cultural factors prevent Hispanic men to be sterilized.

The present study has several limitations. The most salient is that our data from the prospective study and the in-depth interviews only capture women's perception about their partners' willingness or experiences about vasectomy.

The prevalence of vasectomy among Latinos is considerably lower than among white men in the United States. However, there is evidence that access to services and economic constraints have played a role alongside negative cultural perceptions about vasectomy in reducing the prevalence of vasectomy in this population. Participants in our focus groups claimed that they would like to know more about places and requirements to obtain a vasectomy but no information was available for them. Disadvantageous conditions at work tended to prevent some men from seriously considering obtaining a vasectomy since they could not take time away from work without losing their jobs. The lack of information about the procedure itself and where to obtain it is also a barrier.

Table 1. Characteristics of parous low-income pill users who reported having a partner and wanting no more children

Characteristic	N	%
All	470	100.0
Age		
18-24	50	10.6
25-29	85	18.1
30-34	106	22.6
35 +	229	48.7
Parity		
1	27	5.7
2	164	34.9
≥ 3	279	59.4
Marital status		
Married	298	63.4
Not married	172	36.6
Duration of relationship		
Less than 5 years	48	10.2
5 years or more	323	68.7
Husband/partner provides economic support		
No	87	18.5
Yes	371	78.9
Education		
< High school	121	25.7
Some High school	159	33.8
Completed High school	112	23.8
≥ some college	78	16.6
U.S. Health insurance status		
U.S. Health insurance	53	11.3
No U.S. health insurance	417	88.7
Receive U.S. government assistance		
Yes	361	76.8
No	109	23.2
Language used at home		
Spanish	369	78.5
Spanish and English	79	16.8
English	22	4.7
See relatives who live in Ciudad Juarez at least once a month		
Yes	302	64.3
No	168	35.7
Source of pills		
U.S. (clinic)	269	57.2
Mexico (over the counter)	201	42.8
Ever received counseling about contraceptive methods		
Yes	340	72.3
No	130	27.7
Wants to be sterilized		
Yes	335	71.3
No	135	28.7
Body needs to take a break from the pill		
Agree/ Not sure	240	51.1
Disagree	228	48.5

Table 2. Percentage of parous low-income pill users who reported having a partner and wanting no more children by vasectomy willingness

Characteristic	Partner has asked for vasectomy	Woman thinks her partner would undergo vasectomy	Woman thinks her partner would NOT undergo vasectomy	P
All	13.0	18.9	68.1	
Marital status				
Married	16.1	20.5	63.4	0.008
Not married	7.6	16.3	76.2	
Duration of relationship				
Less than 5 years	10.4	18.8	70.8	0.611
5 years or more	15.5	19.8	64.7	
Husband/partner provides economic support				
No	5.8	18.4	75.9	0.071
Yes	14.6	19.4	66.0	
Education				
< High school	9.9	14.9	75.2	0.081
Some High school	10.7	16.4	73.0	
Completed High school	16.1	24.1	59.8	
≥ some college	18.0	23.1	59.0	
U.S. Health insurance status				
U.S. Health insurance	9.4	15.1	75.5	0.467
No U.S. health insurance	13.4	19.4	67.2	
Receive U.S. government assistance				
Yes	13.9	20.5	65.7	0.118
No	10.1	13.8	76.2	
Language used at home				
Spanish	11.9	20.1	68.0	0.423
Spanish and English	15.2	13.9	70.9	
English	22.7	18.2	59.1	
See relatives who live in Ciudad Juarez at least once a month				
Yes	12.6	20.9	66.6	0.360
No	13.7	15.5	70.8	
Source of pills				
U.S. (clinic)	17.9	16.4	65.7	0.018
Mexico (over the counter)	9.3	20.8	69.9	
Ever received counseling about contraceptive methods				
Yes	13.2	21.5	65.3	0.060
No	12.3	12.3	75.4	
Wants to be sterilized				
Yes	11.6	21.5	66.9	0.053
No	16.3	12.6	71.1	
Body needs to take a break from the pill				
Agree/Not sure	15.0	21.3	63.8	0.104
Disagree	10.5	16.7	72.8	

Table 3. Ordinal Logistic Regression for Degree of Willingness to Undergo Vasectomy Among Partners of Parous Low-Income Pill Users Who Reported Having a Partner and Wanting No More Children

	Coef.	Std. Err.
Partnership characteristics		
Married	0.3400	0.2904
Relationship duration (more than 5 years)	0.2320	0.3778
Husband/partner does not provide economic support	-0.6988	0.5692
Socioeconomic status		
Education (Ref =up to 8th)		
Some HS	0.3458	0.3139
Completed HS	0.6743*	0.3292
Post HS	1.0470**	0.3845
Has U.S. health insurance	-0.8547*	0.4323
Receives government assistance	0.6560**	0.2851
Cultural markers		
Language used in home (Ref = Spanish)		
Spanish and English	-0.0977	0.3247
English	0.8588	0.5520
Sees family members in CJ at least once a month (ref = None)		
Parents or parents in law	0.3274	0.2568
Siblings or grandparents (but no parents or parents in law)	0.0316	0.3899
Other relatives (no parents, in laws, siblings or grandparents)	0.1362	0.4777
Contraceptive services and preferences		
Source of pill = clinic	0.3193	0.2362
Ever received counseling about contraceptive methods	0.3579	0.2656
Wants sterilization	0.0320	0.2650
Do not think that body needs to take a break from the pill	-0.4290†	0.2318

** $p < 0.01$, * $p < 0.05$, † $p < 0.10$

Cut-Points: Thinks partner would get vasectomy: 2.37

Partner has asked for vasectomy: 3.59

Table 4. Knowing Someone Whose Partner Has Had a Vasectomy

Type of relationship	N	%
Mother	1	0.8
Sister	7	5.8
Other relatives	26	21.7
Friends	33	27.5
Neighbor	5	4.2
Coworker	1	0.8
Other	1	0.8
Any	57	47.5

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