

Contraceptive use Among Hispanic Women Living in Puerto Rico

Jeidiel De León-Arbucias, MD*; Jorge Acevedo-Canabal, MD†; Jeyka Marin-Alvarez, MD*;
Erika Benabe, MD*; Josefina Romaguera, MD, MPH*†

Objective: To assess the contraceptive methods used by sexually active Hispanic women living in Puerto Rico.

Methods: From October 2016 through February 2018, 518 patients completed a self-administered questionnaire. The inclusion criteria were being over the age of 21 and having visited San Juan City Hospital or University District Hospital. The results were analyzed using descriptive statistics and a 2-sample *t* test, where $P < .05$ was considered significant.

Results: A total of 518 participants completed the questionnaire. Of the 518, 413 (81.0%) reported having used at least 1 form of contraception; 252 (49.4%) used OCPs, 305 (60.8%) used male condoms, 92 (33.8%) used the rhythm method, 83 (30.6%) undergone female sterilization, 98 (19.9%) used the withdrawal method, 92 (18.9%) used an implant, 67 (13.5%) received progesterone injections, 41 (8.3%) used female condoms, 13 (4.9%) had partners who undergone male sterilization, 20 (4.1%) used the transdermal patch, 16 (3.2%) used a vaginal ring, and 26 (5.3%) used an intrauterine device.

Conclusion: Of the 518 women, 24.2% used LARC, representing an increase in the usage by this population; this increase is likely linked to LARC's being easily accessible and free of charge. Public health interventions should be developed to increase knowledge about sexual health, educate about the effectiveness of different contraceptive methods and the prevention of sexually transmitted diseases, and reduce both the barriers to acquiring contraception and, thereby, the number of unintended pregnancies in this population. [*PR Health Sci J* 2023;42(2):158-163]

Key words: Contraception, LARC, Hispanic, Women

Poor contraceptive use and lack of knowledge have been associated with high-risk sexual behaviors, unintended pregnancies, and increased risk of STIs (1). In 2013, the Youth Risk Behavior Surveillance System reported that, nationally, 65% of women aged 20 to 44 years were sexually active, fertile, not currently pregnant, and not currently desiring to become pregnant (2). Of these, 33% were not using any kind of contraception. A 2008 hospital-based survey of postpartum women in Puerto Rico (PR) indicated that 65.5% of the pregnancies on the island had been unintended, compared with 51% of the general United States (U.S.) population (2) [*For the purposes of this article and from this point forward (unless otherwise noted), Puerto Rico will be considered as a unique statistical entity rather than as part of the United States, which comprises, again, only for this article, the 50 states and the District of Columbia*]. Additionally, in 2014 it was reported that among women aged 15 to 19 years, the birth rate was almost twice as high in PR as it was in the U.S. (2). Another study shows that, in PR in 2015 through 2019, there were a total of 57,200 pregnancies annually; of these, 39,800 (69.5%) were unintended (3). Due to this high percentage of unplanned pregnancies in PR, the use of contraception is highly encouraged and necessary.

Puerto Ricans, especially young adults, are at higher risk of engaging in high-risk sexual behaviors than are the members of the general Hispanic population of the U.S. (4). Reports have found that being of an early age at the initiation of sexual practice is related to increased numbers of STIs and pregnancy during adolescence, while an increased number of sexual partners is also associated with increased numbers of STIs (4,5). In agreement with this, the Centers for Disease Control and Prevention (CDC) reported that many young people engage in high-risk sexual behaviors that place them at risk of STIs and unintended pregnancies (6).

According to the CDC's effectiveness of family planning methods, intrauterine devices (IUDs), subdermal implants, and male and female sterilization are the most effective forms

*Department of Obstetrics and Gynecology, San Juan City Hospital, San Juan, Puerto Rico; †Department of Obstetrics and Gynecology, University of Puerto Rico, San Juan, Puerto Rico

The authors have no conflict of interest to disclose.

Address correspondence to: Josefina Romaguera, MD, MPH, Department of Obstetrics and Gynecology, San Juan City Hospital, Puerto Rico. Email: josefina.romaguera@upr.edu

of contraception, resulting in fewer than 1 pregnancy per 100 women per year (7). These are followed by progesterone injections such as depot medroxyprogesterone acetate (DMPA, also known as Depo Provera), oral contraceptive pills (OCPs), the hormonal patch, the vaginal ring, and diaphragms, which are variously associated with 6 to 12 pregnancies per 100 women per year (7). The least effective contraception include male and female condoms, the withdrawal method (also called coitus interruptus), the sponge, the rhythm method (also called the calendar method), and spermicides, variously resulting in 18 or more pregnancies per 100 women per year (7). Long-acting reversible contraception (LARC), such as IUDs and implants, are the most effective form of reversible contraception (8), with a failure rate of 1%.

The most recent population-based estimates of contraceptive use in PR, published in 2020 with data from the 2016 Zika outbreak, found that among women aged 18 to 49 years who used contraception, female sterilization was the most frequently reported method (40.8%), followed by male condoms (among the least effective) (17.1%); moderately effective methods, such as pills, patches, the vaginal ring, and injections (9.1%); male sterilization (another of the most effective methods) (6.7%); less effective methods, such as rhythm, withdrawal, female condoms, and the diaphragm (5.3%); and the IUD (the last of the highly effective methods) (3.9%) (9). The private non-profit organization La Asociación Puertorriqueña Pro Bienestar de la Familia (PROFAMILIA; the Family Planning Association of Puerto Rico) provides reproductive health care primarily to low income families in PR. According to PROFAMILIA, approximately 44,000 women sought contraceptive-related services in 2009. Of them, 80% received OCPs, 8%, the transdermal patch, 6%, condoms, 3%, DMPA, and 1%, an IUD (2). In a comparison study evaluating contraceptive use among women on the U.S. mainland, 63.5% of non-Hispanic White women were currently using contraception, compared with 57.3% of Hispanic women and 57.9% of non-Hispanic Black women who were doing the same (10). A recent intervention program centered on contraception called the Zika Contraception Access Network (Z-CAN) was implemented from May 4, 2016, to August 15, 2017, in PR to decrease limiting factors to contraceptive use, such as the lack of reasonable access to the full range of reversible methods, high out-of-pocket costs, insufficient providers, and patient education; its aim was to increase access to contraception in PR during the local Zika outbreak. Through the Z-CAN program, all the currently available methods of contraception were offered -free of cost- to the participating women. A total of 14,259 (68%) women chose (and received) a LARC method, and 5,250 (25%) women chose (and received) OCPs or another moderately effective form of hormonal contraception (11).

Contraceptive-method preferences vary among Hispanics in comparison with non-Hispanics due to a myriad of reasons, which include different perceptions regarding the side effects

of oral and injectable hormonal contraceptives, demographic factors, cultural factors, level of education, and misinformation (12). Poor knowledge of contraception and fertility has been associated with decreased contraceptive use by Hispanics compared to non-Hispanics (13). Socioeconomic status has also been associated with contraceptive-method selection and use. Almost three-fourths of women with a family income below the federal poverty level have unplanned pregnancies (74%), compared to women with higher incomes (52%). Among low-income Hispanics, misinformation has been identified as being among the barriers to contraceptive use (12). Hispanic and non-Hispanic women with low incomes have different perceptions of the side effects of oral and injectable hormonal contraceptives, which could potentially impact the type of contraception selected (12). Whereas non-Hispanics reported concerns that were mostly focused on the physical side effects, Hispanics had additional concerns about potential emotional side effects. Additionally, level of education has been shown to be associated with contraceptive choice (12). Sterilization is, for example, more common among less educated women than it is among women with higher levels of education; conversely, women with higher levels of education are more likely to opt to use OCPs than are their relatively lower educated counterparts. (12).

Not only does the appropriate use of contraception decrease unplanned pregnancies and prevent STIs, but it also decreases the annual burden of medical costs. In an intervention scenario in which women in PR are assumed to have same-day access to contraception, including LARC, with no out-of-pocket costs, the predicted savings in medical costs from unwanted pregnancies would be approximately \$40.4 million (in PR) (14). Further, if women who use no contraception or who use one of the less effective methods were to make use of one of the more effective methods currently available, the savings associated with the avoidance of unwanted pregnancies would be even greater (14).

For these reasons, it is of outmost importance to assess which specific contraception is being employed by sexually active women in PR. This information will be valuable in determining which limiting barriers exist so that appropriate interventions to increase contraceptive-method education and usage, prevent STI transmission, and avoid unplanned pregnancies can be established.

Materials and methods

This was a cross-sectional study approved by the IRBs of the participating institutions and involving a self-administered questionnaire provided to patients visiting San Juan City Hospital and the University District Hospital. The eligibility criteria included women who were at least 21 years old who were able to read and had the capacity to consent. The exclusion criteria disallowed those women who were under the age of 21, who were not able to give consent, or who could not complete the survey on their own.

Data collection process

Before their appointments, patients in the waiting areas of the respective clinics at the hospitals were approached by study investigators and given a brief description of the study. Women willing to participate were taken to a private office where a detailed informed consent in Spanish was given (and signed, if the process were to continue) and the questionnaire was administered. Each participant was assigned a numerical identifier for privacy. The completed questionnaire was safeguarded in a closed envelope.

Study questionnaire

The survey consisted of multiple-choice questions that had previously been validated. The data collected from each questionnaire was divided into three sections that included sociodemographic characteristics, sexual history, and contraceptive method used. Sociodemographic characteristics included the patient’s country of birth, education level, marital status, household income, and medical insurance (that is, whether or not the patient had such insurance). Sexual history of the participant included her age at her first sexual encounter and of what that sexual encounter consisted (oral sex, digital sex, anal sex, penetrative vaginal sex, or a combination); a woman whose first sexual encounter did not include penetrative vaginal sex was asked at what age this kind of sex was initiated. In addition, each participant was asked how many sexual partners she had had in her life, the gender of her current partner, and her sexual orientation. Contraceptive methods used included OCPs, the vaginal hormonal ring, the transdermal patch, a copper IUD (ParaGard), a progesterone IUD (Mirena), male condoms, female condoms, progesterone injections (eg, Depo Provera), the withdrawal method, the rhythm method, subdermal implants (Nexplanon), female sterilization, and male sterilization; and in the case of any other contraception not previously mentioned, the participants had the option of including them.

Data analysis

Descriptive analyses were initially performed. Categorical data were summarized as frequencies with percentages. Continuous data were summarized using measures of central tendency and dispersion. The data were further analyzed using a chi-square test or a 2-sample *t* test with equal variances for comparison. All statistical analyses were evaluated with a 2-tailed significance level of .05. Statistical analysis was performed using STATA software, version 14.0.

Results

From October 2016 through February 2018, 518 women completed the questionnaire. The analysis was using the number of participants that answered all the questions as the total.

Sociodemographic characteristics

Table 1 summarizes the results of the demographic characteristics of the participants. Most of the participants

reported being born in PR (430/518, 83.0%); with a mean age of 32.8 years. Over half of the participants (292/517, 56.5%) had at least some college. In addition, 244 (of 516; 47.3%) were single, 230 (of 343; 68.9%) earned less than \$15,000 per year, and 468 (of 504; 92.9%) had medical insurance. Among those with medical insurance, most (332/468; 70.9%) reported having government-subsidized health insurance.

Table 1. Sociodemographic characteristics and sexual preferences of sexually active Hispanic women living in Puerto Rico (2016-2018).

Characteristic	n	Percent
Birthplace (N = 518)		
Puerto Rico	430	83.0
Dominican Republic	54	10.4
Continental United States	34	6.6
Relationship Status (N = 516)		
Single	244	47.3
Married	132	25.6
Living consensually with partner	105	20.4
Separated	5	0.97
Divorced	25	4.8
Widowed	5	0.97
Annual Income (N = 343)		
<\$15,000	230	68.9
≥\$15,000	113	32.9
Medical Insurance (N = 504)		
Yes	468	92.9
No	36	7.1
Participant Education Level (N = 517)		
More than high school	292	56.5
High school or less	225	43.5
Sexual Orientation (N = 487)		
Heterosexual	468	96.09
Homosexual	3	0.62
Bisexual	16	3.28

Regarding sexual practices, the majority of the participants reported being heterosexual (468/487, 96.1%) with a mean age at coitarche of 17.5 years and a mean of 3.6 partners during their life.

Contraceptive method use

The participants were asked which of the following contraceptive methods they used: OCPs, the vaginal ring, the transdermal patch, an IUD, male condoms, female condoms, DMPA injections, the withdrawal and/or rhythm methods, subdermal implants, female sterilization, or male sterilization (or if applicable, a combination of 2 or more methods); in addition patients could add any method that they used but that was not mentioned. Table 2 summarizes the number of participants who responded to these questions and their answers. Of all the participants, 413 (81.0%) reported having used at least 1 form of contraception in their lifetime. Of those who reported having used contraception, 305 (60.8%) reported having used male condoms, 252 (49.4%), OCPs, 98 (19.9%), the withdrawal method, 92 (18.9%), an implant, 92 (33.8%), the rhythm method, 67 (13.5%),

Table 2. Contraceptive methods used by sexually active women living in Puerto Rico, (2016-2018).

Method	Used (%)	Did not use (%)	Did about not know (%)	Refused to answer (%)
Oral Contraceptive Pills (n = 510)	252 (49.4)	257 (50.4)	0 (0)	1 (0.2)
Ring (n = 498)	16 (3.2)	480 (96.4)	0 (0)	2 (0.4)
Patch (n = 492)	20 (4.1)	470 (95.5)	0 (0)	2 (0.4)
Intrauterine Device (n = 494)	26 (5.3)	472 (95.6)	3 (0.6)	3 (0.6)
Male Condoms (n = 502)	305 (60.8)	194 (38.7)	0 (0)	3 (0.6)
Female Condoms (n = 497)	41 (8.3)	452 (90.9)	1 (0.2)	3 (0.6)
Progesterone Injection (n = 495)	67 (13.5)	423 (85.5)	2 (0.4)	3 (0.6)
Withdrawal (n = 492)	98 (19.9)	389 (79.1)	2 (0.4)	3 (0.6)
Rhythm (n = 272)	92 (33.8)	180 (66.2)	0 (0)	0 (0)
Implant (n = 485)	92 (18.9)	391 (80.6)	0 (0)	2 (0.4)
Female Sterilization (n = 271)	83 (30.6)	187 (69.00)	1 (0.4)	0 (0)
Male Sterilization (n = 262)	13 (4.9)	248 (94.7)	1 (0.4)	0 (0)

the progesterone injection, 41 (8.3%), female condoms, 20 (4.1%), a transdermal patch, 26 (5.3%), an IUD, and 16 (3.2%), a vaginal hormonal ring; 83 (30.6%) had undergone female sterilization, and the male partners of 13 (4.9%) had undergone male sterilization.

Several statistically significant associations were observed between contraceptive methods used and patient level of education (Figure 1). Having a high school education (through 12th grade) was mostly associated with female sterilization ($P = .002$) and male condom use ($P = .032$), while the withdrawal method ($P = .071$), the rhythm method ($P = .010$), and implants ($P = .057$) were mostly associated with an education level up to a bachelor's degree. Use of some form of contraception was also associated with marital status. OCPs were used mostly by single patients ($P = .05$), along with male condoms ($P = .008$) and implants ($P = .005$). IUDs were used mostly by married patients ($P = .060$). Finally, there was also an association between the method of contraception used and annual income. Participants with low incomes ($\leq \$4,999$ per year) reported a higher use of the rhythm method ($P = .008$), implants ($P = .008$) and vaginal rings ($P = .001$); those with incomes from \$10,000 to \$14,999 per year reported a higher use of OCPs ($P = .005$), and those with incomes from \$20,000 to \$24,999, a higher use of vaginal rings ($P = .001$).

Sexual practices

The sexual practices of the participating women—the details of which are on page 9—were explored. The results show that the mean coitarche for the participants was 17.5 years. Additionally, the mean number of lifetime partners was 3.6. In relation to sexual orientation, 468 (96.1%) of our participants identified themselves as being heterosexual (attracted to men), 16 (3.3%), as being bisexual (attracted to both men and women), and 3 (0.6%), as being homosexual (attracted to women).

Discussion

Our study showed that 81.0% of the participants had utilized at least 1 form of contraception in their lifetime. Higher than was observed in a 2014 estimate of contraceptive use among Hispanic women on the U.S. mainland, which shows that 57.3% were using contraception (10). This finding might be related to the recent educational interventions (eg, Z-CAN) that were offered to our population to raise awareness about the risks of Zika during pregnancy and to provide free contraception to said population. Nonetheless, a significant portion (19%)

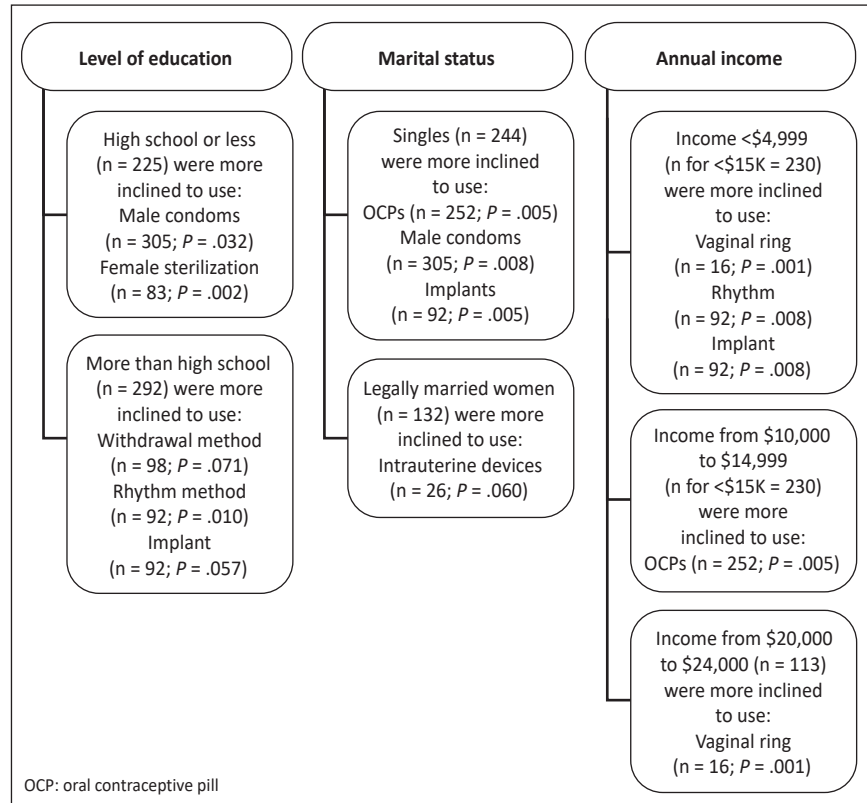


Figure 1. Association of educational level, marital status, and annual income with contraception practices among Hispanic women living in Puerto Rico, 2016-2018.

of the participants reported never having used any form of contraception in their lifetime (19.0%), raising the question as to why they had chosen not to do so. Barriers that impede proper understanding and education should be identified in order to reduce misinformation and increase the use of contraception, as well as to encourage the further development of programs that offer these methods at more reasonable costs, given that the most effective methods (IUD, implant) are inaccessible to low-income patients.

From the participants who reported having used at least 1 form of contraception throughout their lifetimes, the most commonly used contraceptive methods were male condoms, OCPs, the rhythm method, and female sterilization. Our findings differed from those of other, recent, studies estimating contraceptive use in PR; these studies reported female sterilization, male condoms, and such moderately effective methods as OCPs, patches, the ring, and DMPA injections as being the most commonly used methods (9). This difference could be due to the timing of the study since it was conducted during the same period as the previously mentioned island wide program focused on contraception, Z-CAN, which was implemented from May 4, 2016, to August 15, 2017. The Z-CAN program was established during the Zika outbreak to decrease limiting factors to contraceptive use and to increase access to contraception in PR. During the Z-CAN program, all the currently available contraceptive methods were offered free of charge; a total of 14,259 (68%) women chose and received a LARC method, and 5,250 (25%) women chose (and received) OCPs or another moderately effective form of hormonal contraception (eg, DMPA injections) (11). Our results also confirmed that over half of the participants (56.4%) had a history of using the most effective contraceptive methods available, which included IUDs, implants, male sterilization, and female sterilization. However, almost one-quarter were utilizing the most effective reversible contraceptive methods (LARC), which included IUDs and implants, demonstrating the need to educate these women further on the most effective forms of contraception currently available.

The results of this study demonstrate that, when choosing a preferred method of contraception, Hispanic women living in PR are influenced by their socioeconomic background, the educational level they have attained, and the type of relationship they have. As the results show, women of relatively lower socio demographic status tended to use those methods that are relatively higher in cost (e, the vaginal ring and subdermal implants). This could be explained by the implementation of the recent (but no longer extant) Z-CAN intervention program, in which all forms of contraception were provided to patients free of charge to ameliorate some of the effects (those having to do with birth defects and other pregnancy-related negative outcomes) of the recent Zika outbreak. This finding should open the discussion about the public health impact of free contraception on our population. In addition, the ParaGard (copper) IUD was mostly used by women that were legally married, while OCPs,

male condoms, and implants were preferred by single women. Women with high school level education were more inclined to use male condoms and female sterilization. Women with bachelor's degrees were more inclined to use the withdrawal method, an implant, and the rhythm method. Further studies need to be performed to identify additional barriers to the use of LARC as a contraceptive method, as, when the economic barrier was eliminated in this study, many women opted to use less effective contraceptive methods.

This study had several limitations, including its small sample size and short duration. Moreover, the study was performed during the Z-CAN program, which is no longer active, potentially impacting the results of our study, as contraceptives were made accessible—at no cost—to all women. The results might not be reproducible without there being a similar program in place. Finally, most of our study participants reported being enrolled in the government-subsidized health insurance, which could have influenced their choice of contraceptive method.

In conclusion, public health interventions should be developed in order to increase sexual health knowledge, promote safe sexual practices, educate people on the effectiveness of the different contraceptive methods, increase the availability of contraception, regardless of socioeconomic status, increase the prevention of STIs, and reduce the barriers that prevent the acquisition of contraception. This study shows the impact of removing the economic barrier to contraception access in Hispanic women.

Resumen

Objetivo: Evaluar el uso de métodos anticonceptivos en las mujeres hispanas sexualmente activas residentes en Puerto Rico. **Metodología:** Las participantes completaron un cuestionario autoadministrado, desde octubre 2016 hasta Febrero 2018. Los criterios de inclusión consistieron en ser mayor de 21 años y visitar las clínicas del Hospital Municipal de San Juan o el Hospital Universitario. Los resultados se analizaron mediante estadística descriptiva y la prueba T de dos muestras, donde $P < 0.05$ se consideró significativo. **Resultados:** El cuestionario fue completado por 518 participantes. De las 518, 413 (81.0%) habían utilizado al menos un método anticonceptivo; donde 252 (49.4%) utilizaron píldoras anticonceptivas orales, 305 (60.8%) utilizaron condones masculinos, 92 (33.8%) utilizaron el ritmo, 83 (30.6%) se sometieron a esterilización femenina, 98 (19.9%) utilizaron el método de retirada, 92 (18.9%) utilizaron el implante subcutáneo, 67 (13.5%) utilizaron inyecciones de progesterona, 41 (8.3%) condones femeninos, 13 (4.9%) esterilización masculina, 20 (4.1%) parche transdermal, 16 (3.2%) anillo hormonal vaginal y 26 (5.3%) dispositivo intrauterino. **Conclusión:** De las 518 participantes, 24.2% usó LARC, demostrando un aumento en uso del mismo si éste es accesible y libre de costo para ésta población. Deben desarrollarse intervenciones de salud pública para aumentar el conocimiento sobre la salud sexual, educar sobre la eficacia

de los métodos anticonceptivos, prevenir enfermedades de transmisión sexual y reducir las barreras que impiden la adquisición de métodos anticonceptivos para disminuir la cantidad de embarazos no deseados en esta población.

Acknowledgments

This study was supported by the UPR School of Medicine Endowed Health Services Research Center and grants 5S21MD000242 and 5S21MD000138 from the National Center for Minority Health and Health Disparities, National Institutes of Health (NCMHD-NIH). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NCMHD or NIH.

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