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Postpartum Contraceptive Choices Among Ethnically Diverse Women in New Mexico

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Abstract

Objective—To determine if postpartum contraceptive choices by primiparous women differ by ethnicity.

Study design—Retrospective nested cohort study analyzing women's characteristics and contraceptive choice.

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IMPLICATIONS

Ethnicity may affect contraceptive choice. Contraceptive choice did not vary between ethnic groups for most methods. We found that compared with non-Hispanic white women, postpartum primiparous Hispanic and American Indian women chose depot medroxyprogesterone acetate more often.

Results—Of 652 participants, 312 (47.8%) were Hispanic, 287 (44.0%) were non-Hispanic white and 53 (8.1%) were American Indian (AI). Ethnic groups did not vary in choice of intrauterine devices (IUD), implant or pills. In multivariate analysis, depot medroxyprogesterone acetate (DMPA) choice was related to AI (OR 15.28, CI 4.49 – 52.04) and Hispanic ethnicity (OR 3.44, CI 1.12 – 10.58).

Conclusion—Contraceptive choice did not vary between ethnic groups for most methods. DMPA use was higher among Hispanic and AI women.

Keywords

American Indian; contraception; Hispanic; Ethnicity; primiparous

INTRODUCTION

Despite the range of contraceptive methods available in the United States (US), 49% of pregnancies are unintended and 33% have short inter-pregnancy intervals (1, 2). Adverse maternal and infant outcomes occur more frequently among minority and low-income women (3-5). *Healthy People 2020* goals aim to reduce the proportion of unintended pregnancies and short inter-pregnancy intervals (1). The prenatal and postpartum period is ideal for contraceptive counseling and initiation (6). Understanding factors that influence postpartum contraceptive choice, initiation and adherence could inform strategies to reduce unplanned and rapid repeat pregnancy. Few studies have examined the role of ethnicity in choice of contraception. The objective of this study is to evaluate whether postpartum contraceptive choice in low risk primiparous women varies by ethnicity.

MATERIALS AND METHODS

This retrospective nested cohort study used data from the Alterations in the Pelvic Floor in Pregnancy, Labor and Ensuing Years (APPLE) study. A prospective cohort study, APPLE was designed to investigate pelvic floor changes following birth in low risk nulliparous women. Participants were recruited from the maternity care services at the University of New Mexico (UNM) Hospital in Albuquerque from 2006-2011. Eligibility criteria for the parent study included: age ≥ 18, ability to speak and read English or Spanish, and singleton gestation. The UNM Human Research Protections Office approved the study.

Data for this study were abstracted from medical records and included demographic characteristics, choice of contraceptive method prior to hospital discharge, and factors affecting contraceptive choice. Ethnicity was self-selected from a pre-defined list including non-Hispanic white (NHW), Hispanic, American Indian (AI), Asian/Pacific Islander, and Black. Contraceptive method choice included intrauterine device (IUD), implant, depot medroxyprogesterone acetate (DMPA), oral contraceptive pills (OCP), patch, ring, condoms and natural family planning. No patients obtained tubal ligations.

We conducted a power analysis based on the anticipated parent sample size of 765 with the assumption that 62% of postpartum women report using effective contraception (7). This

study can detect a 17% difference in postpartum contraceptive choice between NHW and Hispanic women with 80% power and $\alpha = 0.05$.

Statistical analyses

Differences in patient characteristics were compared by one-way ANOVA for continuous variables and chi-square or Fisher's exact test for categorical variables. Stepwise logistic regression identified predictors affecting contraceptive choice. Odds ratios (OR) and 95% confidence intervals (CI) were calculated. Data was analyzed using SAS® statistical software (version 9.3, SAS Institute Inc., Cary, NC, USA).

RESULTS

A total of 782 women were recruited for the parent study. 130 women did not meet study criteria and were excluded. Asian/Pacific Islander and Black women were also excluded (n=44) leaving 652 in the final analysis. Overall, 312 (47.8%) were Hispanic, 287 (44.0 %) were NHW and 53 (8.1%) were AI. About 92% of women had a plan for contraception before discharge from the hospital.

Comparatively NHW women were older, married or cohabitating, educated, with private insurance ($p < 0.001$). Hispanic women were more likely to report an unplanned index pregnancy ($p = 0.04$). AI women were single, had Medicaid and least likely to initiate prenatal care early or have completed college ($p < 0.001$) (Table 1).

The IUD was a common contraceptive selected by Hispanic and NHW women followed by OCPs and condoms. Among AI women, IUD, OCPs and DMPA were the most popular choices (Table 1).

Ethnicity did not influence postpartum choice of IUD/implant or pills/patch/ring (Table 2). Women under age 25 (OR 2.32, 95% CI 1.43 – 2.86) and those who stated the index pregnancy was unplanned (OR 1.78, 95% CI 1.25 – 2.46) were more likely to choose an IUD or implant (Table 2).

Hispanic (OR 3.44, 95% CI 1.12 – 10.58) and AI (OR 15.28, 95% CI 4.49 – 52.04) women were more likely to choose DMPA compared to NHW women after controlling for other predictors including age, education, pregnancy intention, initiation of prenatal care, number of prenatal visits, postpartum visit, relationship status and insurance at time of delivery (Table 2). Women who had completed 4 years of college (OR 0.22, 95% CI 0.05 – 0.99) or who reported the index pregnancy as unplanned (OR 0.43, 95% CI 0.20 – 0.92) were less likely to choose DMPA. Ethnicity and age interactions were not significant (all $p > 0.05$).

DISCUSSION

Ethnicity did not influence the majority of immediate postpartum contraceptive choices. The IUD was chosen by 37% women overall and 40% of Hispanic women. AI women were less likely to use the IUD/Implant compared to the other ethnicities, however the differences did not reach statistical significance when adjusted for baseline differences between groups. Nationwide IUDs are used by only 7.7% of reproductive age women with higher rates (13.8

%) in Hispanic women (8). An older retrospective study of UNM postpartum women reported that 11.9% chose an IUD for contraception (9). We surmise a progressively IUD/Implant-friendly environment at UNM over the past few years has translated into the higher uptake of these methods.

AI and Hispanic women were more likely than NHW women to use DMPA. Compared to NHW women, Hispanic women reported the index pregnancy as unplanned and both Hispanic and AI women were less likely to complete college; factors that also positively influenced uptake of DMPA. While we found an association between the use of DMPA and ethnicity, the numbers are too small to draw definitive conclusions.

Our study has some limitations. New Mexico is a minority/majority state and the ethnic composition of this study reflects the population of New Mexico and may not be generalizable to other states (10). UNM maternity care services actively promote IUD and implant uptake, which may not be reflective of practices in other parts of the US. Strengths include blinding of research team members extracting data to ethnicity. Ninety seven percent of records documented a contraceptive choice or refusal indicating consistent counseling.

Race and ethnicity are potential factors affecting contraceptive use. An improved understanding of factors guiding a woman's choice could advance counseling and impact the uptake and continuation of effective contraception. In a setting where LARCs are promoted as first line choice for postpartum women, uptake is high regardless of ethnicity.

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Table 1

Demographic Characteristics and Contraceptive Choice by ethnicity

Characteristics	Total Population N = 652	Ethnicity			P value	Post Hoc Testing
		Non-Hispanic White (NHW) (N =287)	Hispanic (H) (N =312)	American Indian (AI) (N = 53)		
Age (years $\pm$ SD)	24.8 $\pm$ 5.5	26.4 $\pm$ 5.4	23.6 $\pm$ 5.1	23.4 $\pm$ 5.8	<0.001	NHW>H&AI
BMI ²⁵	306 ^I (47.6)	117 ^I (40.8)	158 ^I (50.6)	31 ^I (58.5)	0.007	H&AI>NHW
Parity ²						
EAB/SAB/Ectopic	223 (34.2)	100 (34.8)	110 (35.3)	13 (24.5)	0.30	
Married/cohabitating ²	435 ^I (66.7)	218 ^I (76.0)	193 ^I (61.8)	24 ^I (45.3)	< 0.001	NHW>H&AI
4 year college education ²	189 ^I (29.0)	131 ^I (45.6)	54 ^I (17.3)	4 ^I (7.5)	<0.001	NHW>H>AI
12 prenatal visits ²	310 ^I (47.5)	153 ^I (53.3)	143 ^I (45.8)	14 ^I (26.4)	<0.001	NHW>H>AI
Unplanned Pregnancy ²	309 (47.4)	123 (42.9)	164 (52.6)	22 (41.5)	0.04	H>NHW
Early Prenatal Care ²	487 ^I (74.7)	235 ^I (81.9)	227 ^I (72.8)	25 ^I (47.2)	<0.001	NHW>H>AI
Antenatal smoking ²	52 ^I (7.9)	33 ^I (11.5)	17 ^I (5.4)	2 ^I (3.8)	0.01	NHW>H&AI
Breastfeeding ²	574 ^I (88.0)	257 ^I (89.5)	273 ^I (87.5)	44 ^I (83.0)	0.46	
Contraception plan ²	599 ^I (91.9)	261 ^I (90.9)	288 ^I (92.3)	46 ^I (86.8)	0.78	
Insurance at delivery ²						
- Private	191 ^I (29.3)	122 ^I (42.5)	64 ^I (20.5)	5 ^I (9.4)	<0.001	NHW>H&AI
- Medicaid	394 ^I (60.4)	137 ^I (47.7)	210 ^I (67.3)	47 ^I (88.7)	<0.001	AI>H>NHW
- Military	37 ^I (5.7)	24 ^I (8.4)	13 ^I (4.2)	0	0.01	NHW>H&AI
- Self-pay	26 ^I (4.0)	3 ^I (1.1)	23 ^I (7.4)	0	<0.001	H>NHW&AI
Contraceptive Choice ⁴						
IUD	242 ^I (37.1)	105 (36.6)	125 (40.1)	12 (22.6)	0.48	
Implant	15 (2.3)	4 (1.4)	9 (2.9)	2 (3.8)	0.27	
OCPs	177 (27.1)	82 (28.6)	83 (26.6)	12 (22.6)	0.68	
Patch	4 (0.61)	0	3 (1.0)	1 (1.9)	0.10	
Ring	11 (1.69)	4 (1.4)	6 (2.2)	1 (1.9)	0.81	
DMPA	35 (5.4)	4 (1.4)	19 (6.1)	12 (22.6)	< 0.001	NHW<H<AI
Condoms	63 (9.67)	34 (11.8)	25 (8.0)	4 (7.5)	0.13	

Characteristics	Total Population N = 652	Ethnicity			P value	Post Hoc Testing
		Non-Hispanic White (NHW) (N =287)	Hispanic (H) (N =312)	American Indian (AI) (N = 53)		
Other ³	52 (7.97)	28 (9.8)	18 (5.8)	6 (11.3)	0.10	

Continuous variables analyzed by one-way ANOVA and categorical variables analyzed by chi-square or Fisher's exact test.

¹ Denominator includes missing values. Overall missing values less than 8%

² N (%) reported

³ Other – includes diaphragm, withdrawal, and natural family planning

⁴ Choice of contraception before discharge from the hospital.

EAB – Elective abortion; SAB – Spontaneous abortion; IUD – Intrauterine device; OCP – Oral Contraceptive Pills; DMPA – Depomedroxyprogesterone acetate

Table 2

Predictors of immediate postpartum choice of contraceptive method

Contraceptive Methods	Unadjusted		Adjusted	
	OR (95% CI)	p value	OR (95% CI)	p value
IUD/Implant	IUD/Implant		IUD/Implant	
Ethnicity				
- NHW	Referent	0.07	Referent	0.06
- Hispanic	1.27 (0.91 – 1.76)		1.04 (0.73 – 1.47)	
- American Indian	0.62 (0.32 – 1.21)		0.46 (0.22 – 0.92)	
Age 25 years	0.45 (0.33 – 0.63)	<0.001	0.49 (0.35 – 0.70)	<0.001
BMI 25	0.95 (0.69 – 1.31)	0.76		
Weight gain 15 kg	1.32 (0.96 – 1.82)	0.08		
4 year college education	0.52 (0.36 – 0.76)	<0.001		
Unplanned pregnancy	2.05 (1.48 – 2.84)	<0.001	1.78 (1.25 – 2.46)	0.001
Late prenatal care	1.15 (0.78 – 1.69)	0.47		
12 prenatal visits	1.21 (0.88 – 1.67)	0.25		
Breastfeeding immediately PP	0.51 (0.24 – 1.1)	0.09		
Postpartum visit	1.62 (1.01 – 2.60)	0.04		
Married/Cohabiting	0.59 (0.41 – 0.84)	0.003		
Insurance at time of delivery				
- Private	Referent	0.02		
- Medicaid	1.41 (0.98 – 2.02)			
- Military	2.56 (1.25 – 5.35)			
- Self-pay	0.62 (0.23 – 1.63)			

Pills/Patch/Ring	Pills/Patch/Ring		Pills/Patch/Ring	
Ethnicity				
- NHW	Referent	0.95	Referent	0.81
- Hispanic	0.97 (0.68 – 1.39)		0.92 (0.64 – 1.33)	
- American Indian	0.90 (0.46 – 1.76)		0.79 (0.36 – 1.72)	
Age 25 years	1.25 (0.89 – 1.76)	0.20		
BMI 25	1.01 (0.71 – 1.42)	0.97		
Weight gain 15 kg	0.88 (0.62 – 1.24)	0.46		

Pills/Patch/Ring	Pills/Patch/Ring		Pills/Patch/Ring	
4 year college education	1.36 (0.94 – 1.98)	0.11		
Unplanned pregnancy	0.86 (0.61-1.22)	0.40		
Late prenatal care	1.06 (0.70 -1.60)	0.77		
12 prenatal visits	0.90 (0.63 – 1.27)	0.54		
Breastfeeding immediately PP	1.69 (0.67 – 4.24)	0.26		
Postpartum visit	0.66 (0.42 – 1.05)	0.08		
Married/Cohabiting	1.53 (1.03 – 2.28)	0.04	1.50 (1.00 – 2.25)	0.04
Insurance at time of delivery				
- Private	Referent	0.15		
- Medicaid	0.90 (0.61 – 1.32)			
- Military	0.58 (0.25 – 1.35)			
- Self-pay	2.03 (0.86 – 4.8)			

DMPA	DMPA		DMPA	
Ethnicity				
- NHW	Referent	<0.001	Referent	<0.001
- Hispanic	4.59 (1.54 – 13.68)		3.44 (1.12 – 10.58)	
- American Indian	12.63 (6.92 – 74.02)		15.28 (4.49 – 52.04)	
Age 25 years	0.62 (0.30-1.26)	0.19		
BMI 25	0.79 (0.39 – 1.60)	0.51		
Weight gain 15 kg	0.94 (0.46-1.90)	0.86		
4 year college education	0.14 (0.03 – 0.58)	0.006	0.22 (0.05 – 0.99)	0.05
Unplanned pregnancy	0.92 (0.64-1.32)	0.06	0.43 (0.20 – 0.92)	0.03
Late prenatal care	2.23 (1.06 – 4.73)	0.04		
12 prenatal visits	0.30 (0.14 – 0.68)	0.004		

DMPA	DMPA	DMPA		
Breastfeeding immediately	0.29 (0.15 – 1.79)			
Postpartum visit	0.31 (0.15 – 0.64)	0.001		
Married/Cohabiting	0.46 (0.21 – 0.95)	0.04		
Insurance at time of delivery		0.01		
- Private	Referent			
- Medicaid	15.36 (2.08 – 113.69)			
- Military	5.09 (0.31-83.24)			
- Self-pay	35.60 (3.79 – 334.18)			

Cell format – OR (95% CI); NHW – Non Hispanic white; IUD – Intrauterine device; DMPA – depomedroxyprogesterone acetate; BMI – body mass index; PP – postpartum. Late prenatal care defined as initiation in the second trimester or later.

Best model by stepwise logistic regression is reported. IUD/Implant model – candidate factors included ethnicity, age, weight gain, education, pregnancy intention, breastfeeding, relationship status, postpartum visit and insurance at time of delivery. Pills/Patch/Ring model – candidate factors included ethnicity, age, education, postpartum visit, relationship status, and insurance at time of delivery. DMPA model – candidate factors included ethnicity, age, education, pregnancy intention, and initiation of prenatal care, number of prenatal visits, postpartum visit, relationship status and insurance at time of delivery.