Extended Abstract for
"Contraceptive use among women at risk of unintended pregnancy:
Associations with socio-economic and health factors: US, 2010."
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INTRODUCTION

Half of all pregnancies in the US are unintended, and this figure has been persistent for at least two decades (**Finer and Zolna, 2011).** Among live births, 37% are unintended, a figure that has been essentially constant since the early 1980's (**Mosher, Jones, and Abma, 2012)**. Differences in unintended pregnancy and birth by race and ethnicity are large and persistent (Finer and Zolna, 2011; Mosher et al, 2012), and contribute to the persistent differences in birth and pregnancy rates between white, black, and Hispanic (Latino) populations in the United States **(Ventura et al, 2012; Martin et al, 2012).**

One important factor explaining these differences is the effectiveness of contraceptive use. Contraceptive failure rates are higher among black and Hispanic women than among whites. **(Kost et al, 2008).** Another is non-use of contraception among women at risk of pregnancy, which is higher among black women than among white or Hispanic women **(Jones and Mosher, 2010; Jones et al, 2012;** and others).

Contraceptive use has been studied primarily using standard socio-economic predictors such as age, parity, marital status, intent to have more children, education, and income (**Jones and Mosher, 2010; Jones et al, 2012; Jacobs and Stanfors, 2013).** But doctors and patients may well take other factors into account when choosing contraceptive methods. US fertility surveys have collected a number of other variables that can be used to understand contraceptive choice **(Littlejohn, 2012; Borrero et al, 2009**). This paper introduces nine additional indicators—four of low economic status and five indicators of the woman's health—to attempt to shed additional light on contraceptive use and non-use.

Results in tables 1-3 of this extended abstract show that these variables are strongly associated with contraceptive use at the bivariate level. The paper will show those associations, and then explore the degree to which they add additional explanatory power to models of contraceptive use after the standard predictors—age, parity, marital status, education, income—are introduced as controls. To our knowledge, these nine indicators have not been studied in national samples in relation to contraceptive use in the US.

DATA AND METHODS

The data are from the 2006-2010 National Survey of Family Growth (NSFG) public use data file. The NSFG was based on in-person, interviews with 12,279 females and 10,403 males 15-44 in the household population, representing the approximately 120 million males and females 15-44 in the population. This analysis uses only the data for females. The response rate for females was 78 percent. Further details on the data collection methods have been published **(Groves et al, 2009; Lepkowski et al, 2013).**

STATISTICAL ANALYSIS

Of the 12,279 females in the data set, this analysis excludes those who were not at risk of unintended pregnancy in the 3 months before the interview, which leaves us with 8,294 cases for analysis. (Women not at risk of unintended pregnancy include those who are currently pregnant or postpartum, trying to get

pregnant, sterile for health reasons, have never had sex, or have not had sex in the last 3 months—codes 30-41 on the recode CONSTAT1 in the NSFG.) The unweighted number of cases is shown in the tables to give an indication of reliability, but statistical tests (not shown here, but will be shown in the paper) are based on weighted data and take into account the clustering of the sample. The tables were produced and analyzed with Version 9.2 of SAS, using the SURVEYFREQ and SURVEYLOGISTIC procedures.

There are four indicators of economic status, based on sources of income. Female respondents were asked if she or anyone in her household had received any of the following sources of income in the 12 months before the survey:

- Cash assistance from a state or county welfare program, such as TANF (state names were used);
- Food stamps in the last 12 months;
- WIC, the Women's Infants, and Children's Nutrition program, in the last 12 months;
- Supplemental Security Income or SSI;

The indicators of health status include the following:

- A question asking "Have you ever been treated for an infection in your fallopian tubes, womb, or ovaries, also called a pelvic infection, pelvic inflammatory disease, or PID?" (coded Yes or No.)
- "Has a doctor or other medical care provider ever told you that you had diabetes?" (coded Yes or No)
- "Are you limited in any way in any activities of because of physical, mental, or emotional problems?" (coded Yes or No)
- A question in the self-administered part of the survey: "How is your health? Would you say it is excellent, very good, good, fair, or poor?"
- Questions in the self-administered part of the survey on height and weight are used to compute the Body Mass Index, or BMI, a measure of overweight. Generally, a BMI of 15-24 is considered normal, 25-29 overweight, 30-39 obese, and 40 or more morbidly obese.

In the NSFG dataset, all of these indicators have relatively small amounts of missing data (generally less than 2% refused, don't know, or not ascertained).

HYPOTHESES

Previous studies **(e.g., Mosher et al 2012, table 4)** have found that low-income women, and black and Hispanic women, have more unwanted births, and more births that are mistimed by several years or more (sometimes called "seriously mistimed births" in the literature) than high-income and white women.

Thus, we would expect that the indicators of low income (Public assistance, Food stamps, WIC, SSI) would be groups in which unintended births would have more serious consequences for women than in high-income groups—in part because the costs (broadly defined) of unintended births would be higher as a percent of their income. We would therefore expect that these groups would show *higher proportions using female sterilization and other very effective methods, if they can get access to them*. *Access issues may be indicated by the percentage not using any method at all.*

We would also expect that these groups would tend to *have lower proportions using the pill and other less-effective methods*, since minorities and low-income groups have higher contraceptive failure rates than white and high-income groups **(Kost et al, 2008, table 3).**

Several health conditions are listed in **table 3** (PID, diabetes, limitations on activities, a general health rating of fair or poor, and a BMI of 35 or higher). We also expect that the complicating health conditions included in table 3 may be associated with use of contraception as *women with these conditions may wish to avoid either childbearing or certain methods of contraception or both. We would also expect that use of the pill would be less common in women with these health conditions* (because these conditions or accompanying health conditions may make pill use problematic or difficult) than in women without them.

RESULTS

Table 1 shows results by race and Hispanic origin (for reference) and by the 4 indicators of sources of income. Those receiving public assistance were more likely to use female sterilization than those not receiving public assistance (31% vs. 23%), and more likely to use the IUD or hormonal methods other than the pill (18 vs. 10%), but less likely to use male sterilization (1% vs. 10%) and less likely to use the pill (16% vs. 25%). Women receiving public assistance were also more likely to be at risk but not using a method (17% vs. 10%).

Table 1 also shows that 36% of women receiving food stamps were using female sterilization as their method of contraception, compared with 20% of women not receiving food stamps, a large and highly significant difference. Women receiving food stamps were also more likely to use the IUD or hormonal methods (17 vs 10%), and less likely to use male sterilization (2% vs 11%) and the pill (13% vs. 27%). Patterns were very similar, though not identical, for the other 2 sources of income—for example, for women receiving WIC, the difference in use of female sterilization is small, but the difference in use of IUD and hormonal contraception (9% vs. 22%) is large.

Since it is likely that receipt of food stamps varies by race, **Table 2** shows the results on contraceptive use separately for Hispanic, non-Hispanic white, and Non-Hispanic black women. Among white women, 41% of women receiving food stamps were using female sterilization, compared with 18% of those who were not. White women receiving food stamps were also more likely to use the IUD or hormonals (16 vs. 9%) and much less likely to use male sterilization or the pill (15 vs. 31%). Among Hispanics, the patterns are similar to those for all women and white women. Among black women, the differences are smaller and some are not significant, but in the same direction. These results suggest that receipt of these sources of income is a statistically useful indicator of socio-economic status; the full paper will explore this idea.

Table 3 shows contraceptive use and non-use by 5 indicators of the respondent's health. Among women who say they are in "excellent or very good" health, 18% were using female sterilization, compared with 48% of those in "fair or poor" health. Those in excellent or very good health were more than twice as likely (28%) to use the pill as those in "fair or poor" health. Similarly, using the Body Mass Index (BMI) for non-pregnant women 20-44, 17% of normal-weight women and 37% of women with a BMI of 35 or higher were using female sterilization. The proportion using the pill was higher for normal-weight women (26%) than for women with a BMI of 35 or higher (17%).

The analysis will conclude with multivariate analyses to see if one or two of the health indicators and one or two of the source of income indicators can be used in regression equations predicting contraceptive use. Control variables will include age, race and Hispanic origin, parity, and marital status, at least. Our hope is to be able to recommend a small number of additional variables to be used in subsequent analyses

of contraceptive use and fertility that will be useful to describe and explain contraceptive use and unintended fertility in the US.

REFERENCES

(listed in order cited)

Finer L and Zolna MR. 2011. Unintended Pregnancy in the United States: Incidence and Disparities, 2006. Contraception 84 (5): 478-485, November, 2011.

Mosher WD, J Jones and J Abma. 2012. Intended and Unintended Births in the United States: 1982-2010. National Health Statistics Reports, No. 55, July 24, 2012. Hyattsville, MD. National Center for Health Statistics.

Ventura SJ, et al. 2012. Estimated Pregnancy Rates and Rates of Pregnancy Outcomes for the United States, 1990-2008. National Vital Statistics Reports, Vol. 60, No. 7, June 20, 2012. Hyattsville, Maryland: National Center for Health Statistics. http://www.cdc.gov/nchs

Martin JA et al. 2012. Births: Final Data for 2010. National Vital Statistics Reports, Vol. 60, No. 1, August 28, 2012. Hyattsville, Maryland: National Center for Health Statistics. http://www.cdc.gov/nchs

Kost K et al. 2008. Estimates of Contraceptive Failure from the 2002 National Survey of Family Growth. Contraception Vol. 77, No. 1: 10-21, January, 2008.

Littlejohn KE. 2012. Hormonal Contraceptive Use and Discontinuation because of dissatisfaction: differences by race and education. Demography 49(4) 1433-1452.

Jacobs, J and M Stanfors. 2013. Racial and Ethnic Differences in US Women's Choice of Reversible Contraceptives, 1995-2010. Perspectives on Sexual and Reproductive Health 45(3): 139-147, Sept 2013.

Borrero S, et al. 2009. Unintended Pregnancy Influences Racial Disparity in Tubal Sterilization Rates. Journal of General Internal Medicine 25 (2): 122-128.

Groves R, et al. 2009. Planning and Development of the Continuous National Survey of Family Growth. Vital and Health Statistics, Series 1, No. 48, September 2009. Hyattsville, Maryland: National Center for Health Statistics.

Lepkowski J, et al. 2013. Responsive Design, Weighting, and Variance Estimation in the 2006-2010 National Survey of Family Growth. Vital and Health Statistics, Series 2, No. 158, June 2013. Hyattsville, Maryland: National Center for Health Statistics.

Jones J, W Mosher, K Daniels. 2012. Current Contraceptive Use in the United States, 2006-2010, and Changes in Patterns of Use since 1995. National Health Statistics Reports, No. 60, Oct 18, 2012. Hyattsville, Maryland: National Center for Health Statistics.

Table 1: Women at risk of unintended pregnancy by current method used, if any, race and Hispanic origin, and sources of income in the last 12 months: receipt of public assistance,food stamps (aka SNAP), Women, Infants, and Children (WIC) Program benefits, and Supplemental Security Income (SSI): National Survey of Family Growth, 2006-2010

(Percents are weighted national estimates)

	N	Total	Female Sterilization	Male sterilization	IUD & Hormonal	Pill	Other methods	At risk but Not using
Race & Origin								
Hispanic	1,780	100%	28	5	15	18	24	10
Non-Hispanic:								
White	4,312	100%	21	12	10	29	18	10
Black	1,590	100%	31	1	15	15	20	17
Public Assistance								
Yes	950	100%	31	1	18	16	16	17
No	7,154	100%	23	10	10	25	21	10
Food stamps								
Yes	2,059	100%	36	2	17	13	18	14
No	6,105	100%	20	11	10	27	21	10
WIC								
Yes	1,532	100%	26	1	22	17	21	14
No	6,642	100%	23	10	9	26	20	11
SSI								
Yes	526	100%	40	3	13	16	16	11
No	7,637	100%	23	9	11	25	21	11

Table 2: Women at risk of unintended pregnancy by current method used, if any, whether their household received food stamps (SNAP) in the last 12 months, controlling for race and Hispanic origin:
National Survey of Family Growth, 2006-2010
(Percents are weighted national estimates)

	N	Total	Female Sterilization	Male sterilization	IUD & Hormonal	Pill	Other methods	At risk but Not using
Hispanic								
Yes	465	100%	34	2	19	13	21	11
No	1,268	100%	26	6	13	19	26	10
Non-Hispanic White								
Yes	715	100%	41	3	16	15	15	10
No	3,560	100%	18	13	9	31	19	9
Non-Hispanic Black								
Yes	750	100%	33	0	17	11	19	19
No	805	100%	29	2	14	18	21	17

Table 3: Women at risk of unintended pregnancy by current method used, and sources of income in the last 12 months: receipt of public assistance, food stamps (aka SNAP), Women, Infants, and Children Program (WIC) benefits, and Supplemental Security Income (SSI): National Survey of Family Growth, 2006-2010

(Percents are weighted national estimates)

	N	Total	Female Sterilization	Male sterilization	IUD & Hormonal	Pill	Other methods	At risk but Not using
Pelvic Inflammatory Disease (PID)								
Yes	441	100%	47	4	8	15	15	12
No	7,847	100%	22	9	12	25	21	11
Diabetes								
Yes	514	100%	41	8	7	17	16	11
No	7,779	100%	22	9	12	25	21	11
Limited in any way								
Yes	820	100%	40	6	7	22	14	11
No	7,470	100%	22	9	12	25	21	11
General Health								
Excellent or Very Good	5,274	100%	18	11	12	28	21	11
Good	2,264	100%	30	6	11	19	21	12
Fair or Poor	719	100%	48	4	8	12	16	12
BMI (Age 20-44)*								
15-24 (normal)	2,908	100%	17	12	11	26	23	11
25-34 (over)	3,195	100%	30	9	10	21	20	9
35 or higher	1,164	100%	37	6	12	17	15	13

*BMI is calculated for non-pregnant women 20-44, but currently pregnant women are already excluded from tables 1-3. The category of "35 or higher" was used because of the distribution of cases in the dataset.