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Contraceptive Choices of Women 35–44 Years of Age: Findings From the Behavioral Risk Factor Surveillance System

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PURPOSE: With an estimated 3.1 million unintended pregnancies in the United States each year, patterns of contraceptive use have significant public health importance. Little literature has focused on these patterns in women over age 35.
METHODS: Using data from the 2004 Behavioral Risk Factor Surveillance System, we conducted a population-based analysis of 22,890 women between the ages of 35–44 years who completed information on family planning. Lifestyle, demographic, and medical history covariates were assessed and multinomial logistic regression was used to obtain odds ratios (OR) and 95% confidence intervals (CI).
RESULTS: Female sterilization was the most popular contraceptive method among women aged 35–44 years (28.5%). Relative to non-Hispanic white women, Hispanic and non-Hispanic black women were less likely to use effective methods of contraception such as male sterilization (OR = 0.33, 95% CI: 0.23, 0.46; and OR = 0.10, 95% CI: 0.06, 0.16, respectively) and oral contraceptives (OR = 0.55, 95% CI: 0.41, 0.73; and OR = 0.42, 95% CI: 0.31, 0.57, respectively) after adjustment for demographic, lifestyle, and medical factors.
CONCLUSIONS: Although fecundity is reduced in women of this age group, increased rates of maternal and fetal complications make unintended pregnancies riskier. This study demonstrates opportunities for targeted counseling and increased awareness of the diversity of contraceptive choices for older women.
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KEY WORDS: Contraception, Women's Health, Pregnancy, Unplanned.

INTRODUCTION

In 2001, 3.1 million of the 6.4 million pregnancies in the United States were classified as unintended (1). Unintended pregnancies consist of unwanted pregnancies (i.e., pregnancies that occurred when no children, or no more children, were desired) and mistimed pregnancies (i.e., pregnancies that occurred earlier than desired) whereas intended pregnancies are pregnancies that occurred at about the right time or later than desired (2). Although rates of unintended pregnancy decreased among women greater than or equal to 35 years of age from 1994 to 2001, they still remained high (1). Women in this age group are more likely to have pregnancy-related complications as compared to younger women. For example, women of advanced maternal age are more likely to have coexisting conditions such as diabetes and hypertension during pregnancy (3–5). Older maternal age is also associated with an increased risk of congenital and chromosomal abnormalities, stillbirth, spontaneous abortion, and maternal morbidity and mortality (6–9). In addition, women greater than or equal to 40 years of age have one of the highest induced abortion ratios (the ratio of abortions to live births) (10). In fact, women greater than or equal to 40 years of age are almost as likely to end their pregnancies in induced abortion as adolescents (11). As a result, unintended pregnancies can be costly. In 2002, direct medical costs associated with unintended pregnancies in the United States reached nearly 5.0 billion dollars (12).

Studies of pregnancy intention and contraceptive use have found that nonuse is common even among women not desiring pregnancy. An analysis of 2000 Behavioral Risk Factor Surveillance System (BRFSS) data showed that among women who were 18–44 years of age and not using any type of contraception, only 36% wanted to get pregnant (13). A report using data from the 2004 Pregnancy Risk Assessment Monitoring System (PRAMS), a population-based surveillance system designed to track information on maternal experiences and behaviors that occur before, during, and immediately after pregnancy among women who have delivered a live-born infant recently, found that the prevalence of contraceptive nonuse at the time of conception among women who reported not trying to become pregnant was 53.1% (14). Although the prevalence did not vary considerably by age, it was highest for women who were greater than or equal to 35 years of age. When contraceptive use was considered by pregnancy intention status, the PRAMS data showed that the prevalence of contraceptive nonuse at the time of conception

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List of Abbreviations and Acronyms

BRFSS = Behavioral Risk Factor Surveillance System
BMI = body mass index
CI = confidence interval
NSFG = National Survey of Family Growth
OR = odds ratio
OCs = oral contraceptives
PRAMS = Pregnancy Risk Assessment Monitoring System

was 47.8% among women who reported that their pregnancies were unintended. Other recent studies have similarly found that many women who report not wanting to become pregnant in the near future use less effective methods of contraception, use contraception inconsistently, or use no method at all (15–17).

Although many studies have investigated unintended pregnancy and contraceptive use among adolescent and younger adult populations, to our knowledge no studies have examined contraceptive use patterns exclusively among women of older reproductive age. Studies conducted among adult populations have found that women 35–44 years of age are less likely to currently use contraception as compared to younger women, despite being at risk of unintended pregnancy (18, 19). Although women in this age group do experience reduced fecundity (20, 21), as well as increased rates of self-reported fertility impairment (22), they are still at risk of pregnancy. Thus, women of older reproductive age should use a reliable and effective method of contraception to protect against unintended pregnancy. The overall purpose of this study was to assess the types of contraceptive methods being used by women 35–44 years of age and to investigate characteristics associated with the use of these methods using a large, representative sample of U.S. women.

METHODS

Study Population and Design

This study uses data from the BRFSS. BRFSS is an on-going, state-based telephone surveillance system that collects data on behaviors and conditions that place adults at high risk for the chronic diseases, injuries, and preventable infectious diseases that are the leading causes of morbidity and mortality in the United States (23). Over 300,000 adults participated in the 2004 BRFSS (overall response rate: 41.2%). Response rates for individual questions were quite high. For the questions used in the current study, the weighted percent for refusal to answer a particular question ranged from 0.01% for a question on stroke to 6.76% for a question on income. Nearly all of the states and territories that participated in the 2004 BRFSS used a disproportionate stratified sample design. Some states also sampled disproportionately from certain strata to provide adequate sample sizes for smaller, geographically defined areas.

In 2004, questions about "Family Planning" were asked to all female respondents who were between the ages of 18–44 years, not currently pregnant, and had no history of hysterectomy. We excluded women who were less than 35 years of age (n = 37,236), not currently sexually active (n = 3768), in a same-sex union (n = 215), trying to become pregnant (n = 1145), or did not answer the questions about contraceptive use (n = 5927). Thus, 22,890 women remained for analysis.

Measurement of Contraceptive Methods

During the telephone interview, women were asked to self-report whether they were currently using any method of contraception to keep from getting pregnant. Women who indicated that they were using a method of contraception were asked to report and/or select their method from a list of predetermined responses. For the purposes of this analysis, contraceptive methods were collapsed into the following categories: oral contraceptives (OC), other hormonal methods (including implants, injectables, and the transdermal patch), intrauterine device (IUD), female sterilization, male sterilization, condoms, other barrier methods and spermicides (including diaphragm, cap, foam, and jelly), and withdrawal and rhythm methods. Women who indicated that they were not using contraception and were not excluded for any of the aforementioned reasons were considered to be nonusers.

Measurement of Demographic, Lifestyle, and Medical Covariates

A number of demographic and lifestyle factors found to be associated with contraceptive use in prior studies of contraceptive patterns of use were considered as covariates. These variables were self-reported by participants and included the following: age, marital status, race/ethnicity, education, income, and health coverage (19, 24). We also considered physical activity as a potential lifestyle covariate that might be related to contraceptive choice among women 35–44 years of age.

In addition to these demographic and lifestyle factors, we also considered a number of possible contraindications to hormonal contraception use as covariates (21, 25–28). Obesity is a risk factor for venous thromboembolism among women using combination OCs (21), and smoking and hypertension are recognized as risk factors for myocardial infarction and stroke among women who use combined estrogen-progestin contraceptives (21). The use of combination OCs has also been cautioned among older women with a history of diabetes, hyperlipidemia, cardiovascular