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Original article

Association of Copayment and Socioeconomic Status with Hormonal Contraceptive Adherence in a Female Veteran Population

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A B S T R A C T

Background: There are limited studies available analyzing association between copayment and hormonal contraception adherence. The study was conducted to investigate the association between copayment status and hormonal contraceptive adherence in a female veteran population when stratified by socioeconomic status.
Methods: This 4-year, retrospective, cohort study of women Veterans from the Veterans Integrated Service Network 22, a network of Veterans Affairs facilities that includes Southern California and Nevada, included patients who received a new hormonal contraceptive prescription between October 1, 2008, and September 30, 2012. Patients were split into five quintiles (one having the lowest income and five the highest) dependent on zip code–based median annual household income from the 2007–2011 American Community Survey data. Medication possession ratio difference of copayment versus no copayment group for each respective quintile was the primary outcome. Analysis was done using multiple linear regression models.
Results: A total of 3,622 patients met the inclusion criteria and were included in the analysis. Over the entire population, copayment was significantly associated with reduced adherence (−0.034; 95% confidence interval [CI], −0.06 to −0.008). Patients in the highest socioeconomic group, quintile five, had the largest reduction in adherence associated with having a copayment (−0.073; 95% CI, −0.129 to −0.017). Patients in the other four quintiles saw varying levels of decreased adherence respectively, although the differences did not achieve statistical significance.
Conclusion: The association between adherence and copayment status varied by socioeconomic status. Our findings suggest that even affluent patients may be discouraged from adherence when subject to a copayment. If larger studies substantiate these findings, consideration should be given to a policy that exempts women veterans from copayments for hormonal contraceptives.

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Female veterans of childbearing age are seeking care at Veteran Affairs (VA) facilities in record numbers (Mattocks et al., 2011). Despite some improvements seen in teen pregnancy rates, the number of unintended pregnancies in the United States remains high; almost half of all pregnancies are unintended (Finer & Zolna, 2011). The United States has higher rates of pregnancy and abortion compared with other westernized countries (Bachrach, Compernolle, Helfferich, Lindahl, & Van der Vlugt, 2012). No published data are available regarding unintended pregnancy rates in veterans. Pregnancy rates seen in active duty women have been measured as higher than the

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general population, ranging from 50% to 65% and differ by branch of service (Clark, Holt, & Miser, 1998; Finer & Henshaw, 2006; Holt, Grindlay, Taskier, & Grossman, 2011; Lindberg, 2011). Veterans and active duty women may inherently share the same risk factors for unintended pregnancies. These risk factors include being unmarried, having higher rates of racial minorities, and lower educational levels (Holder, 2010).

Unintended pregnancies in the United States have an estimated annual direct medical cost of over $5 billion (Trussell, 2007). Subsequent personal and societal costs are thought to ensue over time owing to the impact of unintended pregnancies on the overall productivity of the women or their children. It was estimated that direct medical cost savings of $19 billion are seen with use of contraceptive use (Trussell, 2007).

The ability of women and couples to choose the best contraceptive method may be deterred by high copayments and rising out-of-pocket costs (Sonfield & Pollack, 2013). Poverty was the biggest predictor of nonadherence in one analysis (Westhoff, Torgal, Mayeda, Shimoni, Stanczyk, & Pike, 2012). Unintended pregnancies are more likely to occur in women with a lower socioeconomic status (Dehlendorf, Rodriguez, Levy, Borrero, & Steinauer, 2010; Mosher, Jones, & Abma, 2012). Wealthier women have lower rates of unintended pregnancy than low-income women owing to a lesser likelihood to engage in unprotected intercourse and a greater likelihood of using contraception (Dehlendorf et al., 2010).

Even small amounts of cost sharing can reduce the use of preventive health care, particularly for low-income Americans (Swartz, 2010; Trussell, 2007). This implies that an increase in the adherence of hormonal contraceptives may be obtained by excluding patients from cost sharing for these agents. This topic has been of particular interest since the passing of the Affordable Care Act requiring most health plans to soon provide free hormonal contraceptive therapy to their patients (U.S. House of Representatives, 2010). Studies have shown that increasing contraceptive coverage has potential to decrease cost and improve outcomes from both a payer and societal perspective (Burlone et al., 2013).

The aim of this study was to investigate the association between copayment status and hormonal contraceptive adherence in a female veteran population when analyzed by socioeconomic status. Currently, there is a surprising absence of studies assessing copayment association with hormonal contraception adherence, particularly compared with the large volume of studies investigating adherence to other therapies considered of high value (i.e., statin therapy for cholesterol, blood pressure–lowering agents). This study aims to help grow the literature base on this topic.

Methods

Study Population

This 4-year, retrospective, cohort study included patients from the Veterans Integrated Service Network 22, a network of Veterans Affairs facilities that includes Los Angeles, San Diego, Long Beach, and Loma Linda, California, and Las Vegas, Nevada. The Veterans Integrated Service Network 22 provides care for a population of approximately 1.4 million veterans (U.S. Department of Veterans Affairs, 2013d). Patient data was retrieved from the electronic medical record system.

Patients considered for study selection were required to meet the following inclusion criteria: Female veterans with a new prescription for hormonal contraceptives (pills, patch, injection, or vaginal ring) in the study period of fiscal years 2009 through 2012 (10/1/2008 to 9/30/2012). Patients were excluded if they were over 45 years of age or no zip code income data were available from the American Community Survey data.

Each patient was included in the study only once and was followed for 1 year post index date, which was defined as the date of first new prescription for a hormonal contraceptive within the study time frame. Patients were followed for 12 months post index date. Long-acting products such as intrauterine devices and medroxyprogesterone injections were considered in-clinic agents and were not included in the analysis. New start was defined as no VA hormonal contraceptive prescriptions in the 12 months before the index date. Veterans can qualify as Combat Veteran Status if they served on active duty in combat operation area after November 11, 1998, and have been discharged with a clean record of service (U.S. Department of Veterans Affairs, 2013c). Patients in the analysis were split into five quintiles, ranging from lowest earners (quintile one) to highest earners (quintile five) based on the median annual household income estimated by matching 5-digit zip codes of patients with the annual household income per zip code based on the 2007–2011 5-year average American Community Survey data (American Community Survey, 2007–2011).

Benefits Description

The VA benefits structure is unique and patient eligibility is determined based on the patient's service connection (SC) status. Patients can receive a total SC disability percentage from 0% to 100% (given in 10% increments) upon enrollment into the VA benefits system if it is determined that they have disabilities that were caused by or aggravated during their service (California Department of Veterans Affairs, 2012). This percentage correlates with the estimated loss in earnings potential the veteran has seen owing to disabilities incurred during their service. If veterans are assigned a total SC percentage of 50% or greater, they are exempt from copayment for all prescriptions. The second criteria for copayment exemption for contraceptive medications would be having a service connected rating of 0% to 40% but the treatment is related specifically to a SC condition (i.e., acne, dysmenorrhea; U.S. Department of Veterans Affairs, 2013a). Last, patients with a household income below predetermined geography- and dependent-based VA income thresholds are also exempt from copayment requirements if appropriate documentation is provided (U.S. Department of Veterans Affairs, 2013b). Veterans who have a copayment requirement pay a flat $8 or $9 copayment per month (U.S. Department of Veterans Affairs, 2013a).

Outcome Measures

The primary outcome measure is the medication possession ratio (MPR) for copayment versus no copayment groups when stratified by zip code–based income quintiles, when controlling for other confounding variables. MPR will be used to measure medication adherence and will serve as the dependent variable. MPR is defined as the ratio of days supply dispensed divided by days in a given time interval (365 days used as denominator in this study). Multivariate linear regression is utilized to control for independent variables, including age, race, ethnicity, religion, type of contraceptive, contraceptive supply, new start status, marital status, outside insurance other than VA benefit, combat