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The impact of an IUD and implant intervention on dual method use among young women: Results from a cluster randomized trial

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ABSTRACT

Long-acting reversible contraceptives (LARCs) are highly effective at preventing pregnancy but do not protect against sexually transmitted infection (STI). Recent efforts to improve access to intrauterine devices (IUDs) and implants have raised concerns about STI prevention and reduced condom use, particularly among teenagers and young women. We evaluated whether a provider-targeted intervention to increase LARC access negatively impacted dual method use and STI incidence among an at-risk patient population.

We conducted a cluster randomized trial in 40 reproductive health centers across the United States from May 2011 to May 2013. After training providers at 20 intervention sites, we recruited 1500 sexually-active women aged 18–25 years who did not desire pregnancy and followed them for one year. We assessed intervention effects on dual method use, condom use and STI incidence, modeling dual method use with generalized estimating equations and STI incidence with Cox proportional hazard regression models, accounting for clustering.

We found no differences between intervention and control groups in dual method use (14.3% vs. 14.4%, aOR 1.03, 95% CI 0.74–1.44) or condom use (30% vs. 31%, aOR 1.03, 95% CI 0.79–1.35) at last sex at one year. STI incidence was 16.5 per 100 person-years and did not differ between intervention and control groups (aHR 1.20, 95% CI 0.88–1.64).

A provider training intervention to increase LARC access neither compromised condom use nor increased STI incidence among young women. Dual method use was very low overall, highlighting the need to bolster STI prevention efforts among adolescents and young women.

1. Introduction

Reducing the unintended pregnancy rate in the United States (US) is a national public health goal (U.S. Department of Health and Human Services and Office of Disease Prevention and Health Promotion, 2015; Kost, 2015). Approximately 45% of all pregnancies are unintended, with the highest proportions among teenagers (75%) and women in their early twenties (59%) (Finer and Zolna, 2016). Increasing access to long-acting reversible contraceptives (LARCs) is recommended by the Centers for Disease Control and Prevention (CDC) (Division of Reproductive Health et al., 2013). The American College of Obstetricians and Gynecologists and the American Academy of Pediatrics endorse offering intrauterine devices and implants to teens and young women (American College of Obstetricians and Gynecologists, 2012; Ott and Sucato, 2014), the age group of highest risk of both unintended pregnancy and sexually transmitted infection (STI) (Finer and Zolna, 2016; Satterwhite et al., 2013). Because of these dual risks, ensuring that young women are offered a full range of contraceptive options while maintaining focus on the prevention of STIs is imperative.

Long-acting reversible contraceptives (LARCs), including intrauterine devices (IUDs) and the subdermal implant, have higher effectiveness levels compared to short-term user-dependent methods, with both perfect and typical use failure rates of under 1% (Kulier et al., 2007; O'Brien et al., 2008; French et al., 2004; Power et al., 2007). While LARC method use has historically been low in the US compared to other developed countries, adoption of LARC methods has been increasing over the past decade (Romero et al., 2015; Branum and Jones, 2015); 12% of contracepting women in the US now rely on LARC methods (Daniels et al., 2014) including 4.5% of 15 to 19 year olds and 8.3% of women aged 20 to 24 (Finer et al., 2012). Recent research demonstrates successful efforts to increase access to LARC methods, particularly among young women (Winner et al., 2012; Harper et al., 2015; Ricketts et al., 2014); thus, observed increases in LARC adoption are expected to continue.

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While increased LARC access has important implications for unintended pregnancy rates, concerns have been raised that dual method use, that is condom use with a hormonal method, copper intrauterine device or sterilization, may decrease in the context of increasing LARC use (Steiner et al., 2016). Dual method use remains a critical reproductive health strategy, especially in youth populations for concurrent protection against pregnancy and STI. Nationally-representative data show that 50% of incident infections occur among individuals aged 15 to 24 years (Satterwhite et al., 2013). CDC guidelines for primary prevention of STIs among this age group include vaccination and health care provider counseling on evidence-based risk-reduction behaviors including abstinence, consistent and correct condom use and reduction in number of sex partners (Centers for Disease Control and Prevention, 2015).

Previous research suggests that concurrent condom use may be lower among LARC users compared to users of other contraceptive methods (Darney et al., 1999; Roye, 1998; Cushman et al., 1998; Pazol et al., 2010; Santelli et al., 1995). However, a difference in dual use by LARC users is not consistent across all prior studies (Polaneczky et al., 1994). A recent cross-sectional analysis of adolescents in the U.S. found lower condom use among LARC users, as well as injectable, patch and vaginal ring users, as compared to oral contraceptive users, and the authors questioned what might transpire with a LARC scale-up in the US (Steiner et al., 2016). Research with randomized designs and current contraceptive methods is scarce, with only one recent intervention trial on the subdermal implant showing no difference in condom use assessed via prostate-specific antigen, a biological marker of recent semen exposure, among women using the implant compared to women using another contraceptive method (Rattray et al., 2015). However, this intervention study was not US-based, included women of all reproductive ages, with short-term follow-up (3 months), and did not evaluate STI incidence. A gap exists in the literature on concurrent condom use among high-risk young US populations within the context of interventions to increase LARC access.

We conducted a cluster randomized study across 40 clinics in the US evaluating a provider-targeted LARC training intervention to improve access to IUDs and implants among young women (n = 1500). In primary analyses, the intervention successfully reduced unintended pregnancy in family planning clinics (Harper et al., 2015). In this analysis, we evaluated the impact of the intervention on two secondary outcomes: dual method and condom use among adolescents and young women. We tested the hypothesis that the intervention to increase LARC access would lead to lower dual method use. Strengthening the evidence base on any unintended consequences of LARC method accessibility can help guide policy and clinical practice that prioritizes concurrent reductions in unintended pregnancy and STI acquisition.

2. Methods

The current study is an analysis of a cluster randomized trial of an educational intervention for clinic staff to increase access to LARC methods among young women. Randomization was conducted by clinic, and allocation was concealed until study initiation. The study design and primary results are described in detail elsewhere (Harper et al., 2015), and the study was registered at ClinicalTrials.gov (NCT01360216). Briefly, the trial was conducted at 40 Planned

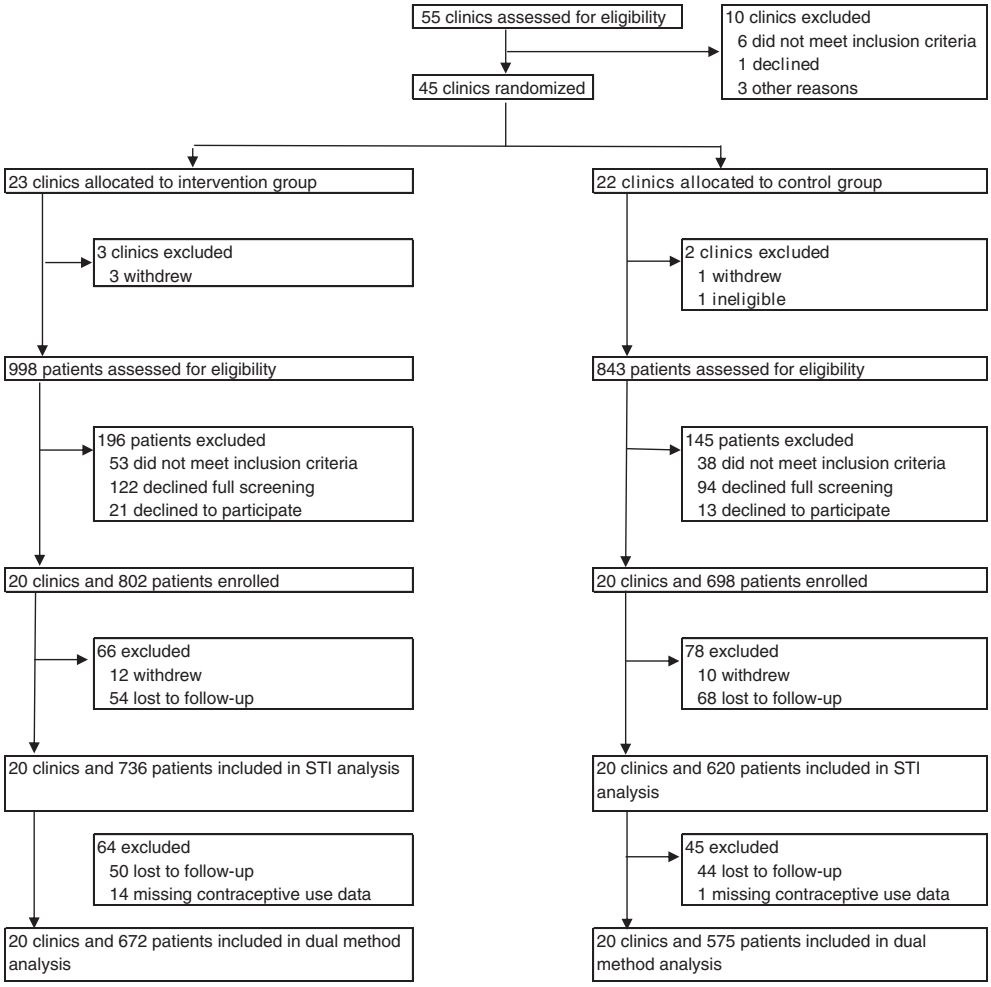

Fig. 1. Trial and analytic profile.