Intrauterine Contraception and the Facts for College Health

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ABSTRACT

Often resulting from inconsistent contraceptive use, unintended pregnancy among young women between ages of 18 and 24 continues to be an issue in the United States. Intrauterine contraception is a safe, highly effective, long-acting, easily reversible, and non—user-dependent contraceptive method, yet it is currently greatly underutilized. As family nurse practitioners and health care providers, we need to integrate this service into primary care—focused college student health clinics. The purpose of this study is to provide evidence-based information to address the misconceptions regarding intrauterine contraceptive use.

Keywords: college student health clinics, contraception, Copper T 380A, intrauterine contraception, IUD, levonorgestrel-releasing intrauterine system

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Unintended pregnancy among young women continues to be an issue in the United States.[1] Although several safe and highly effective contraceptives are available, nearly 50% of all pregnancies in the US are unintended, with the majority occurring among women between the ages of 18 and 24, who are frequently in college, unmarried, low income, or not planning to conceive.[2,3] Unintended pregnancies often result from inappropriate or inconsistent contraceptive use,[4] and approximately 20% of unintended pregnancies end in abortion.[5] Intrauterine contraception (IUC) is one of the safest, most effective methods to prevent unintended pregnancy, but it is currently only being utilized by a small percentage of women (5% of contraceptive users) in the US.[4,6] In 2013, the American College Health Association surveyed college students nationwide about contraceptive use with a 34% response rate and a total of 96,611 repondents.[7] Of the respondents, 46.5% reported not using any contraceptive methods during their last sexual intercourse within the past 30 days. The IUC utilization rate was reported at 5.5%.

Previous studies have shown that misperceptions about IUC, lack of access, lack of education, and lack of training on IUC use among health professionals are common issues, and may be the major reason for this underuse.[4,8,9] A nurse practitioner can help these young women make an informed choice about contraception by providing evidence-based information and dispelling the misconceptions regarding IUC. The purpose of this study is to provide evidence-based information to address the misconceptions regarding IUC use and support the provision of IUC services at primary care—focused student health care clinics.

INTRAUTERINE CONTRACEPTIVES

The World Health Organization supports IUC use in adolescents starting from menarche with a Level 2 recommendation ("benefits outweigh the risks").[10,11] In addition, the IUC is considered to be a first-line choice contraceptive method for both nulliparous and parous adolescents, as recommended by a committee opinion of the American College of Obstetricians and Gynecologists in 2007.[12,13] IUC is one of the most effective contraceptive methods available to prevent unintended pregnancies because it is long-acting, reversible, safe, and requires low user maintenance. After adequate counseling, an IUC may be placed by a trained health care provider in an outpatient clinic. Currently, 3 IUC devices are available in the US: the Copper T 380A (ParaGard; Duramed Pharmaceuticals); and 2 levonorgestrel

intrauterine systems (LNG-IUS), Mirena and Skyla (both from Bayer HealthCare Pharmaceuticals).[12,14,15]

The copper-based IUD was introduced in the US in 1988. It is a nonhormonal, polyethylene, T-shaped copper-containing device with barium sulfate for X-ray visibility. The device is placed inside the uterus for contraceptive use for up to 10 years. It is 36 mm in height and 32 mm wide, and the total copper surface area is 380 ± 23 mm^2. The copper ions in the device prevent fertilization and implantation.[14] The copper IUD can be used as emergency contraception within 5 days of unprotected sexual intercourse[14] and has > 99% efficacy in pregnancy prevention. High efficacy and long duration of use have made the copper IUD the most common contraceptive method in developing countries, especially China.[16]

There are currently 2 levonorgestrel intrauterine system (LNG-IUS) options available in the US, Mirena and Skyla.[14,15,17] The first LNG-IUS, Mirena, was approved for use in the US in 2000 and is a small, T-shaped IUC device that contains 52 mg levonorgestrel and initially releases about 20 µg of levonorgestrel daily into the uterine cavity, but this amount gradually decreases to 10 µg daily by the fifth year.[14,15,17] This IUC device is made of a Nova-T polyethylene frame with barium sulfate for X-ray visibility and a cylinder of polydimethylsiloxane-levonorgestrel mixture molded around the vertical arm. The device is 32 mm in height and 32 mm wide.[14,17] It is one of the most effective contraceptive methods, and also has a number of noncontraceptive health benefits, including decreasing menstrual blood loss, alleviating painful menstrual cycles, and protecting the endometrial layer during estrogen replacement therapy.[17,18] The efficacy of the LNG-IUS in preventing pregnancy is > 99%, and it is approved for contraceptive use for up to 5 years.

The second LNG-IUS, Skyla, contains 13.5 mg levonorgestrel and is the newest IUC, added to the US market in 2013. The device is 30 mm in height and 28 mm wide and initially releases about 14 µg of levonorgestrel daily into the uterine cavity.[17] The amount of levonorgestrel gradually decreases to 5 µg daily after 3 years of use.[17] Levonorgestrel acts by thickening the cervical mucus to prevent sperm from entering into the uterus and changing the endometrial structure to prevent implantation. This IUS prevents pregnancy for up to 3 years with > 99% efficacy. Like Mirena, Skyla can also provide noncontraceptive benefits to some users with a history of painful or heavy menstrual cycles by decreasing the lining of the endometrial layer, decreasing menstrual blood loss, and preventing painful menstrual cycles.[14,17,18]

LITERATURE REVIEW

Modern IUDs are very safe and more effective than other types of contraceptives.[4] IUC efficacy is similar to sterilization at 99%, but fertility can be reversed rapidly after the device's removal. However, it is currently underused among adolescents who are in the high-risk group for unintended pregnancies, and this is largely due to a lack of knowledge regarding IUC. Furthermore, clinical providers are often reluctant to provide IUC services due to historic problems with outmoded devices, ongoing misconceptions, and lack of training.

A literature review was conducted on the effectiveness, acceptability, and continued use of these highly effective contraceptive methods in young women. Due to scarce data on long-acting reversible contraceptive (LARC) use among the adolescent group, it is important to determine whether LARCs are acceptable among this age group. Mestad and colleagues[19] evaluated 5,086 female participants for their contraceptive method preferences by age. LARC methods were chosen by 70% (n = 3,557) of study participants. Among 14- to 17-year-olds, 69% (148 of 214) chose a LARC method, whereas 61% (510 of 840) of 18- to 20-year-olds chose a LARC. Of the LARC methods, a subcutaneous implant was preferred among 14- to 17-year-olds (63% or 93 of 148); however, selection of an implant device declined to 29% (146 of 510) among 18- to 20-year-olds.

Fanarjian and colleagues[20] conducted a retrospective cohort study to evaluate the effectiveness of free intrauterine contraceptives in reducing pregnancy rates among low-income women. The study, conducted in 2 North Carolina clinics between January 1, 2003 and June 30, 2009, included eligible uninsured women, aged 15 to 44 years, who desired contraception. Pregnancy rates were studied between exposure (IUC users) and an

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