ClinicK Knowledge About Use of Intrauterine Devices in Adolescents in South Carolina AHEC

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BACKGROUND AND OBJECTIVES: Intrauterine devices (IUDs) are recommended as first-line choices for both nulliparous and parous adolescents by the American College of Obstetrics and Gynecology (ACOG). This study describes use of IUDs and knowledge regarding IUD use in adolescents in South Carolina family medicine residency programs.

METHODS: Faculty and residents in South Carolina Area Health Education Consortium (SC AHEC) Family Medicine Residency Programs received an anonymous survey including questions about current use of IUDs and scenarios where they were asked whether they would recommend an IUD. Proportions were compared using chi-square or Fisher’s Exact Test. Modified Wald method was utilized to calculate 95% confidence intervals.

RESULTS: The survey response rate was 53.8% (n=133). Most respondents (78%) prescribed IUDs and 42% inserted them, but >90% reported only prescribing or inserting ≤10 yearly. In scenarios where IUD recommendation was appropriate, only 27% (95% CI: 20.2–35.2) recommended IUDs for a sexually active adolescent, whereas 60% (95% CI: 51.7–68.1) recommended use for a postpartum adolescent. For similar scenarios in non-adolescents, a statistically significant higher proportion recommended IUDs, with 50% (95% CI: 42.0–58.7) recommending use in a 21-year-old nulliparous woman and 77% (95% CI: 68.8–83.1) in a breast-feeding mother. Women were more likely to recommend IUD use than men in non-adolescents, but not adolescents. There was no difference in recommendations by level of training.

CONCLUSIONS: Knowledge regarding IUD use in nulliparous women and adolescents is limited in this sample of family physicians. Increasing appropriate IUD recommendations may increase IUD use and improve contraceptive counseling for adolescents.

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A study in 1989 found that 40% of OB-GYN, family medicine, and internal medicine physicians were not recommending IUDs to patients. This study also found that internal medicine and family physicians were less willing to recommend and had a more negative attitude toward IUDs. Improvements in safety and tolerability of IUDs should have led to differences in physician attitudes, but more recent studies continue to have similar results. However, the studies discussed above do not focus on evaluating the recommendation of IUD use by clinicians for adolescents, and the only study to focus on family physicians was limited by a response rate of 24.8%.

Recommending IUD use is appropriate for adolescents, based on criteria from the Association of Reproductive Health Professionals (which defines appropriate candidates as women of any reproductive age seeking long-term and highly effective contraception), World Health Organization (which states the benefits of IUD insertion generally outweigh the risks for healthy women who are nulliparous and past menarche but <20 years of age) and ACOG (which states IUDs should be considered as first-line choices for both nulliparous and parous adolescents and that health care providers should strongly encourage young women who are appropriate candidates to use this method, with inappropriate candidates being women who are currently pregnant, have had PID or puerperal or postabortion sepsis within the past 3 months, currently have an STD, purulent cervicitis, undiagnosed abnormal vaginal bleeding, malignancy of the genital tract, or known uterine anomalies incompatible with IUD insertion, or are allergic to the IUD). Further, in 2007, the American College of Obstetrics and Gynecology (ACOG) Committee stated “IUDs and implants should be first-line choices for both nulliparous and parous adolescents.” Similarly, the World Health Organization states the benefits of IUD insertion generally outweigh the risks in nulliparous women under 20 years old. Consistent with these recommendations, multiple studies show that adolescents can successfully use IUDs. However, it is possible that concerns about pelvic inflammatory disease (PID), sexually transmitted diseases, and infertility have limited IUD use in teenagers. Since teenage pregnancies are a significant problem in the state of South Carolina, this study seeks to evaluate IUD use and current knowledge regarding use of IUDs in adolescents among the eight affiliated family medicine residency programs in the South Carolina Area Health Education Consortium (SC AHEC).

**Methods**

**Population**

A cross-sectional Internet survey was conducted with family physicians in South Carolina. Possible respondents were identified through SC AHEC. The SC AHEC includes all eight of the family medicine residency programs currently active in the state of South Carolina and includes all faculty and residents in these programs. However, faculty not in clinical practice were not included in the survey, as this would not be appropriate since some of the questions specifically asked about clinical practice patterns. Previous studies show that almost two thirds of residents who graduate from these eight residency programs currently practice in South Carolina (44.6%) or an adjoining Southeastern state (ie, North Carolina and Georgia together 18.5%). Approximately 50% of graduates report that their current practice is less than 120 miles for the residency program they attended. Thus, our current study includes a sample of family medicine residency faculty in South Carolina and residents who may likely remain in or near South Carolina as practicing physicians.

**Instrument**

Based on a previously published survey by Stubbs et al, a modified survey was developed and pilot tested to include scenarios regarding IUD use in adolescents. A draft of the original survey was pilot tested on a group of residents and reviewed by two family physicians. The modified survey was assessed with think-aloud cognitive interviews with residents and faculty physicians to assess readability, flow, and content. Demographic questions included respondent age, gender, and level of training, characterized as faculty or years in residency (post-graduate year [PGY] 1, 2, or 3). Questions regarding practice patterns included the prescribing or placement of IUDs, including the type of IUD most commonly used and type of providers referred to for IUD placement. Among the 11 clinical scenarios, similar scenarios were included for nulliparous women and postpartum women, which differed in that two specifically identified the woman as an adolescent. Specifically, the scenarios to be compared for this study were for nulliparous women (nulliparous 21 year old and 16 year old sexually active for 1 year) and parous women (breast-feeding mother of 2-month-old child and 17 year old with a 6-month-old bottle-fed baby). Recommending IUD use would be appropriate for these four scenarios, based on previously discussed criteria from the Association of Reproductive Health Professionals World Health Organization and ACOG.

**Procedures**

The anonymous Web-based survey was delivered to 247 physicians in the SC AHEC. Initial surveys were delivered via e-mail, with reminder e-mails sent out 2 and 4 weeks later. Data from the surveys that were returned was de-identified, and thus responses were anonymous. Aggregate, de-identified data were provided to a PhD-level research associate who analyzed the data as described below. This project was approved by the Medical University of South Carolina Institutional Review Board as exempt research.
Analysis
Recommending a copper IUD, levonorgestrel IUD, or both was characterized as a recommendation for IUD use for the purpose of our analyses. The Modified Wald method was utilized to calculate 95% confidence intervals to compare recommendations for IUDs in the clinical scenarios, since these recommendations were not mutually exclusive.22 For the clinical scenarios, proportions of respondents recommending IUDs were compared separately by gender, level of training, and experience with placement of IUDs using chi-square or Fisher’s Exact Test. These analyses were performed using SAS Version 9.1 (SAS Institute Inc, Cary, NC).

Results
Of the 247 surveys delivered, 133 responded (53.8%). A majority of respondents were residents (67.7%), while the rest were faculty physicians. Different postgraduate years of training were fairly equally represented, with 24.8% being interns, and 22.6% and 20.3%, respectively, being in postgraduate years 2 and 3. Almost half (49.6%) of respondents were women, and almost half were less than 30 years old (46.6%), while 12.0% were more than 50 years old. Evaluation of nonrespondents showed there were no significant differences between gender or training level between respondents and nonrespondents.

Of the 77.4% of respondents prescribing IUDs, a majority (61.3%) more commonly prescribed Levonorgestrel IUDs. In addition, 90.1% prescribed 1–10 IUDs per year, 8.3% prescribed 11–20 per year, and 1.6% prescribed 21–30 per year. Of the 42.1% respondents who insert IUDs, 91.1% inserted 1–10 per year and 8.9% inserted 11–20. Referral patterns for respondents who did not insert IUDs were assessed. Of these, a majority referred patients to obstetricians (35%) or other family physicians (29%). A smaller number referred to midwives (7%). Finally, 19% referred to any of the previous mentioned options, while 10% did not refer at all. Only 18% of respondents stated that access determined how often referrals were done. Further, if a course was offered on how to insert IUDs, 42.8% of respondents were likely to attend.

A summary of responses to clinical scenarios is provided in Table 1. Non-overlapping confidence intervals denote statistically significant differences between proportions. Respondents were less likely to recommend IUDs in clinical scenarios including adolescents and were more likely to recommend IUDs for women who have given birth. Comparisons of IUD recommendations by gender and whether the provider inserts IUDs are provided in Table 2. When comparing answers to these scenarios by gender, no differences in recommendations were seen for adolescents. However, for the adult women scenarios, female physicians were more likely to recommend IUD. Physicians who inserted IUDs were more likely to recommend IUDs for the 17-year-old mother scenario. No differences in recommendations were seen by level of training.

Discussion
Adolescent pregnancy continues to be an important public health concern in the United States. In addition to education, the provision of effective contraception to adolescents is necessary to address this issue. This includes discussing all viable options with adolescent patients to find the best alternative for their situation. This study suggests that in scenarios where IUD use is appropriate, family medicine providers may still be hesitant to recommend their use. Specifically, a patient’s age was a factor, since providers were less likely to recommend IUDs to adolescents, in spite of ACOG recommendations and research demonstrating the effectiveness of IUDs in adolescents. Similarly, although parity may affect the ease of insertion, being nulliparous should not preclude the use of an IUD.22–25 Regardless, providers were more likely to recommend IUDs in women who have had children, thereby limiting their use in adolescents who are more likely to be nulliparous than older women. Previous studies suggest that provider’s continued misconceptions regarding risks and contraindications for IUD use may be a factor in limiting recommendations for IUD use.9,18,26 Since almost half of our respondents were interested in a course on IUD use, this suggests an opportunity to increase provider education regarding this subject.

The trend to not recommend IUDs in all appropriate situations is consistent with a previous survey of fellows of the American College of Obstetricians and Gynecologists that showed a majority would not recommend IUDs for nulliparous women and similar findings from surveys of clinicians in the United Kingdom and family physicians in the American Medical Association.10,13,27 In addition to their own concerns regarding the use of IUDs, providers’ assumptions about patients’ desires may also be a reason to not recommend IUDs. Although some studies do suggest that patients may have negative preconceptions about the use of IUDs, this should not preclude

<table>
<thead>
<tr>
<th>Clinical Scenario</th>
<th>IUD Use Recommended% (95% CI)</th>
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<tbody>
<tr>
<td>Breast-feeding mother of 2-month-old child</td>
<td>76.7 (68.78–83.10)</td>
</tr>
<tr>
<td>17 year old with a 6-month-old bottle-fed baby</td>
<td>60.2 (51.65–68.08)</td>
</tr>
<tr>
<td>Nulliparous 21 year old</td>
<td>50.4 (41.99–58.74)</td>
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<tr>
<td>16 year old sexually active for 1 year</td>
<td>27.1 (20.21–35.21)</td>
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Table 1: Recommendation for Use of Any IUD (Levonorgestrel or Copper) by Clinical Scenario

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physicians from offering them, since a few minutes of education on their use has been shown to improve patient’s perceptions.16 Further, since a substantial amount of Internet-based information on IUD use may be inaccurate, ensuring patients are receiving accurate information from their health care provider is paramount.28

Although a majority of providers prescribed IUDs and almost half placed IUDs, the low number of IUDs prescribed and placed per year by each provider is consistent with the lack of recommendations for IUD use. This is concerning, especially in the context of an educational setting, where residents need to be trained to perform this procedure. Similar concerns are present in the training of obstetrician-gynecologists.18 Further research is needed to evaluate the impact of low levels of IUD use on resident training, and the subsequent impact on IUD use in all women, and specifically adolescents.

The strengths of this study include responses from a representative sample of family medicine faculty and resident physicians across the state of South Carolina. Additionally, the survey content was based on a previously published survey, which was adapted to focus on recommendations for IUDs in adolescent women and for online delivery. However, there are several limitations to this study. We do not assess actual practice behavior, instead using responses to the clinical scenarios as an indication of clinician knowledge and attitudes. This method has been used multiple times in previous studies.10,18,27 Participants were all practicing in South Carolina, which may limit generalizability to other areas of the country. Our findings are consistent with previous national studies and would probably at least reflect regional attitudes and knowledge. A little more than half of possible participants responded to our survey. Although a higher response rate would be desirable, our analysis of nonrespondents showed that they were not different in terms of age or level of training. We expect further homogeneity between respondents and nonrespondents since all possible participants were part of the South Carolina AHEC system. Further, volunteer bias may be evident in our results, with individuals more interested in reproductive health being more likely to respond. Theoretically, those not interested in reproductive health should be less likely to recommend IUDs appropriately, so that these results may overestimate the appropriate recommendation of IUDs. Finally, these findings may not reflect knowledge and attitudes toward use of IUDs in adolescents by family physicians outside of South Carolina, where cultural and regional influences may be different.

In conclusion, although a majority of family physicians reported prescribing IUDs and close to half inserting IUDs, most prescribe and insert very few a year. Appropriate recommendations for IUD use by family physicians are limited in nulliparous women and adolescents. Enhancing knowledge of appropriate IUD recommendations may increase IUD use and improve contraceptive counseling for adolescents, an important factor in decreasing adolescent pregnancy rates.

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References


