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Attitudes Towards the Vaginal Ring and Transdermal Patch Among Adolescents and Young Women

Tina R. Raine, MDMPH¹, Laura B. Epstein, BA², Cynthia C. Harper, PhD¹, Beth A. Brown, MAMPA¹, and Cherrie B. Boyer, PhD³

¹ Bixby Center for Global Reproductive Health, Department of Obstetrics, Gynecology and Reproductive Sciences, University of California San Francisco

² University of California Berkeley/UCSF Joint Medical Program

³ Division of Adolescent Medicine, Department of Pediatrics, UCSF

Abstract

Purpose—The vaginal ring and the transdermal patch offer important contraceptive options for women at high risk of unintended pregnancy. Little is known about what adolescents and young women think about these methods and why use of the ring has been relatively low compared to the patch. We sought to examine young women’s attitudes and perceptions about the ring and the patch to better understand the relationship between perceptions of these methods and decisions to use them.

Methods—Sixteen focus groups of young women aged 15–26 years (n=113) from family planning clinics in the San Francisco Bay Area were convened. Data from the focus groups were analyzed using standard content analysis.

Results—While young women expressed apprehension and doubt about both methods, for the most part women expressed more positive attitudes about the patch. Two related themes for the ring and the patch were identified: “lack of trust in effectiveness,” and “method use concerns. Two themes unique to the ring: “concerns regarding vaginal insertion” and “sexual partner perceptions” and three themes unique to the patch: “ease of remembering”, “visibility issues”, and “perceived health risk” were identified.

Conclusions—Increased provider education about apprehensions related to the ring and the patch may lead to increased use of the ring and counter recent declines in use of the patch. It would be unfortunate if these safe and effective options for young women are underutilized because negative attitudes and perceptions about these methods act as barriers to adoption.

Keywords

Adolescents; contraception; vaginal ring; transdermal patch; unintended pregnancy; qualitative; focus groups

CORRESPONDING AUTHOR: Tina R. Raine, MD, MPH, Department of Obstetrics, Gynecology, and Reproductive Sciences, San Francisco General Hospital – 6D, 1001 Potrero San Francisco, California 94110, Phone 415 206-8358, Fax 415 206-3112, E-mail rainet@obgyn.ucsf.edu.

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INTRODUCTION

Over the last decade unintended pregnancy rates in the U.S. overall have remained essentially unchanged at approximately half of all pregnancies.^{1,2} The rate of unintended pregnancy declined however among adolescents, college graduates, and women with higher income; it has not changed among minorities and it has increased among poor and uneducated women.² The decline in adolescent pregnancies is significant and has been attributed largely to improved contraceptive use.³ Health care providers have a significant opportunity to impact unintended pregnancy rates by helping adolescents and young women adopt and continue effective contraception. Two relatively new combined hormonal contraceptives, the vaginal ring (NuvaRing™, Schering-Plough Corporation) and the transdermal patch (Ortho Evra™, Ortho-McNeil-Janssen Pharmaceuticals, Inc) offer young women important additional options.

While results from clinical trials demonstrated comparable efficacy and user acceptability for the two methods, until recent years use of the ring has been relatively lower compared to the patch.^{4,5,6,7,8,9} For example, only 0.4% of the 1.3 million low-income women using California's State Office of Family Planning insurance program, FamilyPACT, received the ring in 2002 compared to 5% receiving the patch.¹⁰ The percentage of women receiving the patch reached a peak of 15% in 2004. Since then the percentage has been declining. In 2006, the most recent year for which data is available, 6% of women in the program received the patch. Over the same time period dispensing of the ring increased steadily but only modestly in comparison to the patch, with 4% of women receiving the ring in 2006.

On face value these two hormonal contraceptive products appear to be comparable options for women. Both methods were approved for marketing in the U.S. by the Food and Drug Administration (FDA) in 2001 and are priced similarly to oral contraceptive pills (OCPs), retailing at \$30–40 per cycle. The small (5 cm) flexible vinyl ring is self-inserted into the vagina and left in place for 3 weeks; this is followed by a ring-free week. The ring releases continuous low doses of estrogen (ethinyl estradiol) and etonogestrel, a progesterone similar to that found in OCPs. The patch is a rectangular (4 × 5 cm) adhesive polyester patch that delivers continuous low doses of the same estrogen and norelgestromin, another progesterone similar to that found in OCPs. The patch is worn (on the arm, thigh, abdomen, torso, or buttocks) for a week, for 3 consecutive weeks; this is followed by a patch-free week. Like OCPs, the ring and the patch inhibit ovulation, induce regular, scheduled periods, and have a low one-year method failure rate of about 1%.^{4,7} Vaginal symptoms and skin site reactions are side effects unique to the ring and the patch respectively, however both of these side-effects occur at low levels.^{6,7}

In comparison to OCPs, the ring and the patch offer women greater convenience since they do not require daily administration. However with monthly administration, the ring has seemingly superior advantage in comparison to the patch. Clinical trials demonstrate that women using the ring and the patch experience similar side effects as OCP users; however ring users appear to have more regular bleeding patterns compared to OCP users while patch users can have more irregular cycles compared to OCP users.^{7,9} The patch can be concealed with appropriate site selection, however partners or parents might see the method with clothes removed. The ring is easily concealed but must be placed in the vagina, a factor which may make it less appealing for some women, especially adolescents. While the ring and the patch are safe and rarely cause serious adverse events or death, the patch exposes women to higher peak serum levels and overall estrogen than both OCPs and the ring and recent epidemiological data indicate a slight increase in the risk of venous thromboembolism (VTE) in patch users compared to OCP users.^{11,12,13}

Given seemingly apparent advantages and disadvantages of both methods, it is not clear why the ring has enjoyed relatively less popularity than the patch. In a study by Epstein et al. that

explored the experiences of adolescents and young women who used the ring, they found that young women undergo a gradual process in which they hear about the ring, have initial reactions, and begin to use the ring and either continue to use it or discontinue use based on their experience in the context of their lives and sexual relationships. Even though all of the participants in this study ultimately decided to use the ring, many participants initially had concerns about the ring.¹⁴ However, in a crossover randomized trial of the ring and OCPs among adolescents and young women, overall approval of the ring was significantly higher than that of OCPs, indicating that preconceived notions among non-users may negatively impact decision to use the ring.¹⁵

We use focus group discussions among adolescents and young women who are at risk of unintended pregnancy to help understand decision-making around contraceptive method choice. Women were recruited from family planning clinics and thus were potential users but they were not necessarily familiar with the methods. This qualitative study examined young women's attitudes and perceptions about use of the ring relative to the patch to better understand the relationship between perceptions of the ring and the patch and decisions to use these methods. Focus group discussions were utilized because of the open-ended format and potential for revealing unanticipated attitudes, complex behavior and underlying motivations around method choice.^{16,17,18}

METHODS

Study Participants

Sixteen focus groups were conducted among adolescents and young women between January and May 2005. Adolescents and young women were recruited from a university affiliated community clinic in San Francisco and three Planned Parenthood clinics in the San Francisco Bay Area (Oakland, Vallejo, and Richmond) serving a racially and ethnically diverse group of low-income women who are primarily uninsured. Young women were recruited from waiting rooms or in response to flyers posted in the participating clinics. Clinic clients were eligible to participate if they were between the ages of 15 and 26 years, able to speak English or Spanish, sexually active (defined as having ever had sex), and not pregnant. Because preferences for contraceptives and contextual issues may vary by age and racial/ethnic background, focus groups were stratified by age: adolescents (15–19 years) or young women (20–26 years); and by race/ethnicity and language: African-American, Asian-Pacific Islander, or Latina (separate groups for English and Spanish speaking women). Twelve groups were conducted with different age and race/ethnicity/language stratification and an additional four groups were conducted (in English) in which there was stratification by age but not by race/ethnicity (Combined groups). Participants completed an anonymous demographic survey prior to the focus group and were reimbursed \$25 for their participation in the 1.5-hour group discussion. The study was approved by the University of California San Francisco's Committee on Human Research, and written informed consent was obtained from all participants.

Study procedures

Each focus group was facilitated by a female moderator and co-moderator who had prior experience facilitating focus group discussions. Each moderator facilitated at least one pilot focus group (observed by the first author) prior to the start of the study. A standardized script was used to guide the focus group discussions. Questions used in the focus group script were designed based on the theory of reasoned action as it relates to contraceptive use behavior.¹⁹ The theory of reasoned action suggests that any given behavior, such as ring use is guided by the person's views of consequences (risks and benefits) and their view of social expectations related to the behavior. Our questions sought to elicit individual values and preferences as well

as those of their sexual partners and peers, who might influence their contraceptive behavior. The script was pilot-tested to insure that the questions were clear and stimulated discussions.

As part of the focus group discussion, participants were shown a sample of the ring and the patch and asked what they knew about the methods. Since most women were not familiar with the ring or the patch, participants were then given a brief explanation of how they were used and how they worked to prevent pregnancy. Participants were asked questions from the standardized focus group script. Questions included: “Based on what you know about the ring/patch, what are some positive and negative things about it?”; “Is this a method young women you know use?”; “Why do you think young women use/don’t use this method?”; “What are some of the experiences of young women you know who use this method?” Moderators used probing techniques to elicit additional information, clarify vague responses, and encourage participation of all group members.

Data Analysis

All focus group sessions were audiotaped and transcribed. Spanish focus groups were transcribed and back-translated into English. A small sample of the focus group transcripts were read by the first and second author to generate an initial set of codes for categorizing the data by key themes. The two authors then read all transcripts independently using the initial set of codes to become familiar with the data and identify sections of text that captured key themes. Data were entered into N6 (NUD*IST) software, a qualitative data management program (QSR International Pty. Ltd., Victoria Australia). During the initial reading, the codes were expanded to include unanticipated themes identified or variations of the initial set of codes. In the process of categorizing data the following aspects were taken into consideration: frequency of comments (the number of times a topic surfaced in the discussion); extensiveness of comments (the number of people who talked about the same issue); intensity of comments (voice volume, speed, and emphasis on certain words); and verbal interactions within the groups. The authors then worked together to refine and consolidate the code categories. The first and fourth author also read the transcripts to assess the data for patterns in themes across groups (i.e. more negative or positive comments in different age or racial/ethnic groups).^{17, 18}

RESULTS

A total of 113 study participants participated in the 16 focus group discussions. Over half (59%) of participants were 15–19 years old. Of the total participants, 31% were age 15–17, 29% were age 17–19, 36% were age 20–24 and 4% were age 25–26. The majority of participants (92%) were racial or ethnic minorities: 21% were Latina/Hispanic, 46% were African-American, 20% were Asian/Pacific Islander, 9% were mixed race and 4% were white. The majority of participants (74%) reported currently having a main sex partner. Approximately half (48%) of the participants had previously been pregnant before with 23% having had at least one child. Nearly half (51%) of the participants had used OCPs, 21% had used the patch, and 6% had used the ring in the past.

We identified two related themes for the ring and the patch: “lack of trust in effectiveness,” and “method use concerns”. We also identified two themes unique to the ring: “concerns regarding vaginal insertion” and “sexual partner perceptions” and three themes unique to the patch: “ease of remembering”, “visibility issues”, and “perceived health risks”.

Common theme for both methods - Lack of trust in effectiveness

Many participants expressed distrust of the effectiveness of both the ring and patch since they were not familiar with these alternate routes of hormone administration. Participants were very

accustomed to oral administration of birth control, and some women drew analogies to transdermal administration of medications like the nicotine patch, however participants were skeptical of the concept of administering birth control in these novel ways. Since the ring is placed in the vagina, participants confused it with barrier methods, and could not reconcile the “hole” through the middle of it, which made the ring’s effectiveness suspect:

“Yeah, what if you get pregnant and you don’t even know that things are working or something. [With the pill you know it works] cause it’s a pill and it goes through your body, because like the pill, like it’s like hormones.” (English-speaking Latina group, age 15–19)

On the other hand, while participants doubted how something that was placed on the skin could prevent pregnancy and commonly referred to it as a “band-aid”, participants also thought that it was “cool” to be able to stick it on.

Common theme for both methods - Method use concerns

A recurring theme for the ring regarded logistical issues: how the ring would be inserted and removed, how it would feel to have it inside the vagina, whether or not it would be used correctly, and fears that the ring would “get stuck” or “lost” inside the vagina or fall out.

“There’s too many risks about it. Like what if I put it in wrong, what if I put it in too far? What if it can’t come out again? [What if it] can’t fit all the way up there?” (African-American group, age 15–19)

Participants expressed concerns about use of the patch as well; participants worried that the patch would not remain adherent to the skin and that it would be irritating or leave marks:

“Oh, and also with the patch it is very possible it’s not 100% that it’s going to stay on. It can come off.... Like my stepsister had it and she put her pants on and went a week without it on and then started her period and didn’t know why. Found out, went and looked in her whole dirty laundry, the patch was stuck to her pants.” (Combined group, age 20–26)

Vaginal ring - Concerns regarding vaginal insertion

Several themes relating to the ring and comfort with inserting the ring in the vagina were identified, including physical concerns, concern about cleanliness, and lack of familiarity with the vagina. Many participants expressed apprehension and embarrassment about touching the vagina for insertion and removal of the ring and discussed the need to feel comfortable with one’s body in order to use it. Some perceived that it would be unsanitary to have a ring inside the vagina, while others related using the ring to masturbating, which they described as taboo:

“I would be very scared. That it is not natural. You shouldn’t touch yourself.” Another participant added: *“There are many women very timid with those things that they are in old traditions. For example, a condom stayed inside [my vagina once]. I never had ever felt or touched myself until [I had] to look for it.”* (Spanish-speaking Latina group, age 15–19)

Vaginal ring - Sexual partner perceptions

Participants also discussed the ring in the context of their sexual partners. Some reported concern that their partners would think the ring was odd, ineffective, or even a sex toy. Others saw potential advantages; the ring would provide the opportunity to be in control of one’s own birth control method, and it could be kept secret from a partner.

“[The ring is like] a little toy thing or whatever. [He would say] like “Dude, what you got stuck inside you? [Using the ring] would raise a whole lot of [problems with

the guy], like [he'd say] "What's that?" It would be so many more issues than other birth control." (Combined group, age 20–26)

Transdermal patch - Ease of remembering

Several focus group participants commented that the patch seemed easier to remember to use than OCPs, because it only needed to be changed once a week and because seeing the patch would serve as a reminder to change the patch:

"You don't have to think about it. You don't really think about it and like you do it once and it's like you don't have to be worried all week. That's so much easier than the pill. It's every single day with the pill and you miss one, it's like I double up, okay, you double up and it's hard. It's just so nice...So convenient." (African-American group, age 20–26)

Transdermal patch – Visibility issues

Participants expressed several negative views about visibility of the patch. Some participants thought it would easy to hide the patch under clothing; others expressed concerns that partners and parents could see the patch. Focus group participants expressed a number of interesting views regarding the perceptions of partners, parents, and friends who might be aware of their use of birth control because of its visibility. The sub-theme that birth control is private or "your business" was also expressed. In general participants expressed concern about bringing attention to one's use of birth control because of lack of desire to alert parents to their sexual activity or because of potential misperceptions among peers (male and female) about the implications of using birth control:

"You know, you don't want like some like woman walking down the street to be like 'Oh my God, that girl has a patch on her arm, she had sex'." (Combined group, age 20–26)

"Or you might not want someone to know that you are a slut" "And guys are like really so, what did you do with that guy...You're like nothing...Why are you wearing the patch?" (Combined group, age 15–19)

Transdermal patch –Perceived health risks

Focus group participants voiced concerns about safety of the patch. While they had incomplete information, it was clear they were aware of reports of adverse events related to the method:

"You could die from that (the patch). This 18-year old died of one on 60 minutes.... Is that true? ...You could get blood clots, you can have heart failure from that." (African-American group, age 15–19)

DISCUSSION

Themes expressed in these focus group discussions with adolescents and young racial/ethnic minorities with little prior knowledge of, and experience with the ring and the patch provide an understanding of how attitudes and perceptions about the methods may act as relative barriers to adoption. While young women in the focus groups expressed apprehension and doubt about both methods, for the most part women expressed more positive attitudes about the patch. While both methods eliminate the need for daily compliance, the concept of ease of remembering was not a prevalent theme for the ring. Participants expressed several negative ring themes related to the vagina and expressed some fears related to safety of the patch. It appears the combination of a simple application procedure and weekly administration for the patch however may outweigh the requirement for comfort with vaginal insertion even though the ring allows for monthly administration.

Visibility of the patch and perceived health risks associated with patch use were negative themes expressed; however, lack of comfort with a method used in the vagina and related sub-themes around insertion, cleanliness, sexuality, masturbation, and partners, appeared to be a more predominant theme for the ring. Negative attitudes about the ring were expressed more frequently, emphatically and in different contexts in the various groups. While participants noted that it might be beneficial to use the ring without a partner's knowledge, they also voiced reluctance about using the ring because of fears of negative sexual attitudes of partners. Partner concerns may serve as an additional barrier for women considering this option as taboos related to masturbation are prevalent among young women and men.^{20,21,22,23}

Fears of the ring getting lost or migrating to distant parts of the body reflect lack of knowledge with respect to reproductive anatomy, which presents a barrier for use of a method requiring insertion into the vagina. Our findings suggest that in addition to understanding and addressing negative attitudes related to sexual values, interventions to increase acceptance of the ring must include basic education to address potential knowledge gaps. It may not be sufficient to verbally explain to patients how to use a method or to allow patients to attempt insertions at home without first giving significant structured guidance such as using teaching models or allowing women to try insertions in the office.

Our findings are consistent with other studies of the female condom and diaphragm in which participants reported apprehension about insertion/removal, comfort, appearance and obtrusiveness.^{24,25,26,27,28,29} Neither the female condom nor the diaphragm are widely used; this may be in large part be due to the availability of more effective hormonal methods. It would be unfortunate if the ring becomes a “niche” product because of the need for vaginal insertion in combination with the availability of alternate methods.

Participants also expressed fears of the patch related to “blood clots”; it is likely these fears negatively impact patch adoption. In 2006, and 2008 the FDA approved label changes for the patch to provide information on VTE risk and advised women to consult with their providers about the risks and benefits of using the method.³⁰ This was based on the results of recent cohort case-control studies which revealed an approximately twofold increased risk of VTE in patch users compared to women using OCPs.^{13, 31} Since the background risk of VTE is very low in healthy young women, a doubling of risk does not pose a significant increase in absolute risk; therefore this method should be considered a safe and viable option. Providers need to be aware of patient concerns about the patch and be informed about safety data to be able to allay patient fears and help them make informed decisions about the patch. While perceived risks of the patch were not expressed as frequently as fears about ring insertion in our focus group discussions, which were conducted in 2005, it is possible that these attitudes may have become more predominant as awareness of health risks increased. Data from California's FamilyPACT program certainly indicate a significant decline in patch use in recent years. An important area of future research should be to assess the degree to which the recent decline in patch use is related to patient fears, changes in provider practices, or other factors.

Our results reveal insights not highlighted by clinical trials, which indicate high satisfaction and acceptance among both ring and patch users. Clinical trials may reveal more favorable findings since participation is typically restricted to women over 18 and participants enter the studies with some level of interest in, and willingness to, “accept” a new method. Most of our study participants had not used the ring or the patch and had limited exposure to these methods. There were more prior patch users in the groups making it more likely that attitudes and views on the patch, positive or negative would be expressed and it may have been more difficult for women to express favorable views about the ring.

While the apprehensions concerning vaginal insertion of the ring were discussed in most focus groups, only participants in the age 15–19 groups employed analogies and references to tampons. Visibility of the patch was a commonly expressed theme across groups however it was brought up more frequently in the 15–19 year old groups and seemed more consequential for teens. Otherwise, all themes were identified across most focus groups even though the groups were stratified by age and race/ethnicity; therefore we are not able to draw conclusions as to whether the themes reflect specific racial/ethnic or cultural biases.” Qualitative methods do not allow us to determine the percentage of young women or if particular women (i.e. women with children) held any given attitude. Further quantitative studies are needed to assess the degree to which apprehensions about cleanliness, sexuality, and partners may be rooted in cultural issues or are more prevalent among racial/ethnic minorities.

Women in this study were recruited from family planning clinics that serve uninsured women from low-income communities in the San Francisco Bay Area; findings revealed in this study may not be generalizable to women from non-clinical settings or different populations. Nonetheless, the application of qualitative methods has provided a contextual view of what sexually active adolescents and young women at risk for unintended pregnancy think about the ring and the patch. It is important to increase the awareness of providers about the apprehensions and misperceptions revealed in this study about both methods. Increased provider education about apprehensions related to the ring and the patch may lead to increased use of the ring and counter recent declines in use of the patch; however, additional research should explore potential strategies to address method apprehensions and uptake of these methods.

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