

Adolescent Mothers' Postpartum Contraceptive Use: A Qualitative Study

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CONTEXT: Effective contraceptive use among first-time adolescent mothers can reduce the risk of a rapid repeat pregnancy and associated negative maternal and child health outcomes. Many adolescent mothers begin using a highly effective method after delivery; however, their rates of contraceptive discontinuation are high. Little research has explored the factors that influence adolescents' postpartum contraceptive use.

METHODS: In-depth interviews were conducted with 21 black, white and Latina adolescent first-time mothers from rural and urban areas of North Carolina between November 2007 and February 2009. In addition, interviews were conducted with 18 key informants—professionals who work closely with adolescent mothers. Interviews explored adolescent mothers' health behaviors, including contraceptive use, before and after pregnancy. Content analysis was used to identify key themes and patterns.

RESULTS: Teenagers' use of contraceptives, particularly injectables, IUDs and implants, increased postpartum. Reasons for this improvement included improved clarity of intention to avoid pregnancy and improved contraceptive knowledge, support and access after delivery. However, this increased access often did not continue long after delivery, and levels of method switching were high. Among the barriers to postpartum contraceptive use that key informants cited were lack of information and parental support, as well as the loss of Medicaid and continuity of care.

CONCLUSIONS: Ongoing follow-up may help reduce adolescent mothers' risk of contraceptive discontinuation postpartum. Increasing use of long-acting methods also may help reduce their vulnerability to gaps in contraceptive use and discontinuation, which increase the risk of unintended pregnancy.

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Each year in the United States, more than 400,000 teenagers give birth.¹ Teenage childbearing exacts high costs on society,² and the children of teenagers fare worse than the children of older mothers.^{3,4} Teenage childbearing also is associated with negative maternal outcomes, such as reduced educational attainment and increased poverty,⁵ although the direction of causation is not clear. Such negative outcomes are compounded among teenage mothers who have a rapid repeat pregnancy. Teenagers who give birth again in less than two years are less likely to return to school or attain economic self-sufficiency than are those who delay additional childbearing; in addition, their children are more likely than others to have emotional and behavioral problems, and to be unprepared for school.⁶ Unfortunately, rapid repeat pregnancy is common among adolescents in the United States: One-fifth of teenage births are to adolescents who already have children.⁷

Effective contraceptive use could significantly reduce rates of teenage pregnancy, including rapid repeat pregnancy; however, many teenagers are poor contraceptive users. In one national study, 20% of sexually active adolescents reported that they had never used birth control, and 21% reported that they had used it only sometimes.⁸ Another study found that early postpartum teenagers were more likely than teenagers who had never been pregnant to

have used hormonal contraceptives,⁹ and especially more likely to have used long-acting methods, such as implants and injectables.^{9,10} However, teenage mothers' contraceptive use declines after the early postpartum period. As one review found, among teenage mothers, 68–73% of oral contraceptive users and 37–66% of injectable users had discontinued their method within 12 months.¹¹ Contraceptive discontinuation places teenage mothers at high risk for a rapid repeat pregnancy: In several studies, 12–44% were pregnant again within 12 months postpartum, and 20–42% within 24 months.^{11,12}

Few studies have assessed barriers to contraceptive use among teenage mothers. Two relatively small quantitative studies have found that postpartum teenagers' primary reasons for inconsistent or discontinued contraceptive use were disliking side effects,^{13,14} not planning to have sex¹³ and forgetting to take oral contraceptives.¹⁴ An ethnographic study of 12 teenagers, the majority of whom were black, and each of whom had had a repeat pregnancy, found that frequently unplanned and sometimes forced sexual activity had hampered effective contraceptive use.¹⁵ Additionally, a focus group study of Latinas aged 18–26 concluded that concerns about side effects had hindered use of highly effective contraceptives, even though participants' access to, information about and appreciation of methods had improved after childbirth.¹⁶

Research on adolescents' postpartum contraceptive use has been limited to teenagers living in urban areas, and qualitative research generally has been limited to teenagers from one racial or ethnic group. The study described here uses data from in-depth interviews with a racially diverse sample from rural and urban areas to enhance our understanding of the factors that may influence adolescent mothers' postpartum contraceptive use. Qualitative research is well suited to explore complex phenomena like contraceptive use because it provides rich, contextualized data and can capture important variations among individuals. In-depth individual interviews in particular can illuminate participants' perspectives and experiences and the social context that shapes them.

Because adolescents' contraceptive use before pregnancy is strongly associated with their use afterward,⁹ this study first examines prepregnancy contraceptive use—and the factors that influenced it—in our sample of first-time teenage mothers. It then assesses how these factors changed postpartum. This comparison provides insight into the dynamics of teenage mothers' contraceptive use from their perspective. Understanding these dynamics can aid the development of interventions to prevent rapid repeat pregnancies.

METHODS

Study Design and Recruitment

The present analysis is part of a larger study of adolescent mothers' health behaviors during pregnancy and after childbirth. The conceptual framework was based on the theory of planned behavior,¹⁷ which posits that behaviors are influenced by related attitudes, subjective norms, perceived and actual self-efficacy, and intentions. We explored these areas, as well as more distal determinants of behavior (e.g., individual characteristics, environmental influences and health care system factors).

To recruit participants, we distributed flyers describing the study to organizations likely to interact with adolescent mothers, including adolescent parenting programs, health departments, community health centers, public high schools and general equivalency diploma (GED) programs. These flyers included a toll-free number that interested teenagers could call. Prospective participants were screened via telephone to determine eligibility. We used purposive sampling to maximize variation by location (urban or rural) and by race or ethnicity (black, white and Latina). Recruitment continued until we enrolled at least three participants from each racial or ethnic group from each location and attained saturation (i.e., additional interviews added little new information). The final sample comprised 21 first-time mothers who were younger than 18 when they gave birth.

We also conducted interviews with 18 key informants—professionals who work closely with adolescent mothers in North Carolina, including health care providers, staff of adolescent parenting programs and maternity care coordinators. In the summer of 2007, we conducted a

first set of interviews by telephone with 10 professionals from five organizations across the state. These interviews were intended to help us develop the adolescent interview guide. In the summer of 2008, we conducted three face-to-face interviews with a total of eight key informants in the communities where we were recruiting adolescents. These interviews were intended to contextualize the data we were collecting from the adolescents.

Data Collection

We developed a semistructured adolescent interview guide, which explored a broad range of health behaviors during pregnancy and after childbirth, including contraceptive use and its determinants. These determinants included attitudes and intentions toward contraceptive use and a possible pregnancy, subjective norms (adolescents' perceptions of attitudes toward contraceptive use and pregnancy held by their partners, their parents and other important people in their lives) and contraceptive self-efficacy (including knowledge of and access to different methods).

Interviews with adolescents took place between November 2007 and February 2009. They lasted approximately one hour and were administered by one of three trained female interviewers in a private setting (e.g., the respondent's home or a health clinic). All interviews were conducted in English, recorded and transcribed verbatim. Respondents provided informed consent and received \$50 for their time. The institutional review board of RTI International approved all procedures.

Key informant interviews assessed perceptions of the main problems and influences related to adolescent mothers' health behaviors during pregnancy and after childbirth. The 2008 interviews included community-specific questions (e.g., about health service availability).

Analysis

We developed a preliminary codebook based on the adolescent interview guide and themes that emerged from the interviews. Transcripts were imported into NVivo8 software for coding and analysis. We coded all transcripts according to the codebook, which we revised and modified as new concepts emerged. After a review of the coding reports and multiple readings of the transcripts, we created matrices summarizing data on each participant's pregnancy intentions and contraceptive use before pregnancy and after childbirth. Similarly, we reviewed the notes and transcripts from the key informant interviews to develop matrices summarizing the findings.

To characterize participants' pregnancy intentions, we carefully read their responses to open-ended questions about how they had felt when they first learned they were pregnant and how they would feel if they conceived again within two years, as well as other places in the transcripts where they mentioned their feelings toward pregnancy. From this reading we devised five categories of pregnancy intention: strongly not intending, not intending, not

thinking about it, partly intending and intending. We then categorized each teenager's feelings about the possibility of a pregnancy before she was pregnant and at the time of the interview.

RESULTS

Sample Description

At delivery, the 21 mothers ranged in age from 13 to 17. Eight were black, seven Latina and six white. Of the seven Latinas, four were born in Mexico, and three were born in the United States to immigrant parents. At the time of the interview, 18 of the participants' babies were one year of age or younger. Most of the teenagers were living with at least one parent or parental figure (a grandmother or other female relative); one participant lived alone with the baby's father, and two lived with the baby's father and his family (parents or siblings). Sixteen young mothers were enrolled in school when interviewed, and one had dropped out; two were in a GED program, and two had completed a GED and were pursuing technical training.

One participant had become pregnant after being sexually assaulted. The others had been in a romantic relationship with their baby's father at the time of conception, most for at least one year. By the time of the interview, only half of the teenagers were still in that relationship.

Before Pregnancy

Not surprisingly, the adolescents reported poor contraceptive use before becoming pregnant (Table 1). Excluding the one teenager whose pregnancy followed a sexual assault, eight had been using no contraceptive method; nine reported having used condoms, and only three reported having used the pill.

Of the nine condom users, five reported consistent use. These five attributed their pregnancy to contraceptive failure, surmising that "maybe it popped" or "the condom busted or something"; the remaining condom users said they had used condoms only "occasionally" or (in one case) until they "ran out." All three teenagers who reported having taken oral contraceptives acknowledged having missed some pills. The teenagers described various factors that had affected their contraceptive use.

•**Pregnancy intentions and attitudes.** One factor that had strongly affected the adolescents' contraceptive use was their attitude toward the possibility of becoming pregnant. Half of the teenagers had clearly intended to avoid pregnancy. Two of these teenagers had been between methods when they got pregnant; the rest had been either using condoms or taking oral contraceptives with varying degrees of consistency. One participant who said she had used condoms inconsistently acknowledged her awareness of having taken a risk; another inconsistent condom user, aged 17 and white, noting that she had been in denial about her risk, said, "Before I got pregnant I didn't really think that it would happen to me."

The remaining participants did not have a clear intention to avoid pregnancy. Two had intentionally conceived,

and three had partly intended to conceive. One 15-year-old rural black teenager had run out of condoms during a weekend of first sex. Although she wished she had finished school before getting pregnant, she had sensed that she was going to conceive with her boyfriend and said, "It ain't like it was a mistake." Four teenagers simply had not been thinking about the risk of pregnancy. The teenagers who had intended to conceive, and three of the four who had not been thinking about the risk of pregnancy, had not been using a contraceptive. Those who had partly intended to get pregnant were using no method or using one inconsistently.

•**Knowledge of and access to contraceptives.** In general, the teenagers had had limited knowledge of and access to contraceptives before conception. Only five had ever used a hormonal contraceptive. Key informants said schools' abstinence-only sex education curricula contributed to the teenagers' lack of contraceptive information. A 17-year-old Latina, who had been neither thinking about pregnancy nor using a method, said, "I really didn't know about birth control [pills] or the shot." The teenagers also had lacked knowledge about where or how to access contraceptives. According to a white 16-year-old, who had not intended to get pregnant but had used condoms inconsistently, "I didn't know where to get [other contraceptives], and I didn't want to tell my mom."

•**Parental communication.** Only three teenagers mentioned having communicated with a parent about sex or contraceptive use before pregnancy. Of these, two said that their mothers had supported contraceptive use and taken them to a clinic for oral contraceptives. The third, a 15-year-old black teenager who had consistently used condoms, said that her mother had actively discouraged contraceptive use.* "My mama don't believe in birth control," she recalled.

Several teenagers said that their embarrassment or reluctance to reveal their sexual activity to their parents had inhibited communication about sex. This reluctance prevented some from accessing effective contraceptive methods. One inconsistent condom user, aged 17 and white, said that her parents had tried talking with her about sex, "but, you know, I thought it was really embarrassing, so . . . I didn't want to talk to my mom about getting help for . . . birth control pills or anything like that." Those who had not communicated with their mothers about contraceptives were unlikely to have used anything beside condoms, if they had used any method at all.

•**Method switching, discontinuation and satisfaction.** Five adolescents had ever used hormonal contraceptives, and four reported side effects that had led to method switching

*This teenager, and others, used the term "birth control" to refer to oral contraceptives. Her mother may have specifically opposed oral contraceptives, rather than all forms of birth control; however, neither she nor her mother had distinguished between oral contraceptives and other forms of birth control. Thus, the teenager interpreted her mother's opposition to oral contraceptives as opposition to birth control in general.

TABLE 1. Prepregnancy and postpartum contraceptive use profiles of 21 North Carolina teenage mothers, 2007–2009

Teenager	Pregpregnancy			Postpartum	
	Pregnancy intention	Method	Details of use	Method	Satisfaction with method
Rural black					
17-year-old, 5 mos. postpartum	Partly intending	Pill	Missed some pills	Injectable	Satisfied
15-year-old, 8 mos. postpartum	Partly intending	Condom	Ran out of condoms during weekend of first sex	Pill	Planning to switch to IUD; safer and easier
16-year-old, 11 mos. postpartum	Not intending	Pill	Missed some pills	Dual (injectable and condoms)	Satisfied
Rural Latina					
17-year-old, 6 days postpartum	Not thinking about it	None	No reason for nonuse	Pill	Not yet started*
15-year-old, 9 mos. postpartum	Not intending	None	Had stopped using condoms; planned to start injectable	Ring	Satisfied
16-year-old, 1 mo. postpartum	Not intending	Condom	Used consistently; condom broke at first sex	Implant	Not yet started†
Rural white					
16-year-old, 12 mos. postpartum	Not intending	Condom	Used occasionally; did not know how to get other methods and was afraid to ask mother	Injectable	Disliked shots; wanted longer term protection; planning to switch to implant
17-year-old, 4 mos. postpartum	Not intending	None	Had stopped using pill; planned to start injectable	Ring	Having some pain; planning to switch to patch
17-year-old, 6 wks. postpartum	Intending	None	Had used pills and condoms; wanted to get pregnant	Pill	Satisfied
Urban black					
16-year-old, 12 mos. postpartum	Not thinking about it	None	No reason for nonuse	Pill	Satisfied
15-year-old, 9 mos. postpartum	Partly intending	None	No reason for nonuse	Injectable	Satisfied
15-year-old, 11 mos. postpartum	Not intending	Condom	Used consistently	Injectable, then none	Not sexually active; disliked side effects
16-year-old, 11 mos. postpartum	Not intending	Condom	Used consistently, but condom broke	Injectable, then ring, then injectable	Disliked shots; had continuous bleeding from injectable; switched to ring, but it slid out; resumed injectable, and bleeding stopped; now satisfied
15-year-old, 12 mos. postpartum	Not intending	Condom	Used consistently; "maybe it broke"	Patch, then injectable	Started with patch, but heard about health risks; satisfied with injectable
Urban Latina					
15-year-old, 3 mos. postpartum	‡	None	na	Injectable	Satisfied
15-year-old, 14 mos. postpartum	Not thinking about it	None	Thought too young to get method	Injectable, then implant	Disliked side effects of injectable; satisfied with implant
13-year-old, 7 mos. postpartum	Not thinking about it	Condom	Used inconsistently	IUD	Satisfied
17-year-old, 18 mos. postpartum	Intending	None	Wanted to get pregnant	Pill, condom, withdrawal	Inconsistent pill user; uses condoms or withdrawal when misses pills; would prefer IUD, but has no time to go to clinic
Urban white					
14-year-old, 23 mos. postpartum	Not intending	Condom	Used consistently; thought too young to use other methods	Injectable, then pill	Disliked side effects of injectable; was concerned about risks of long-term use; satisfied with pill
17-year-old, 4 mos. postpartum	Not intending	Condom	Used inconsistently	IUD	Satisfied, despite a little cramping
17-year-old, 9 mos. postpartum	Not intending	Pill	Missed some pills	IUD	Satisfied

*This teenager had a prescription for the pill and was going to get it filled the week after the interview. †This teenager had a concrete plan to get an implant when she went for her postpartum visit. ‡Pregnancy resulted from sexual assault. Notes: All teenagers' ages indicate the age at which they gave birth. na=not applicable.

or discontinuation. One of these, a rural white 17-year-old, recalled, "I took three different types of the pill, and my body didn't agree with it. [I had] a lot of stomach cramps and vomiting, fatigue and dizziness. Then [the doctors] were going to try Depo, but that's when I [got] pregnant."

For some who had used the pill, forgetting to take it daily hampered consistent use. An urban white 17-year-old who had missed some pills explained, "I didn't like it that you had to take [the pill] every single day at the same time. I switched a couple times. I switched to the patch, and then I didn't like the patch. So I switched back to the pill, and then a couple months after that, I got pregnant."

One adolescent reported that she had stopped using condoms and had been thinking about switching to the injectable when she got pregnant.

•**Unexpected initiation of sex.** Two condom users cited the unexpected initiation of sex as their reason for not having considered a more effective method. The teenager who had run out of condoms during her weekend of first sex explained, "I didn't think about, like, having sex. It was like something that just happened out of the blue. So I didn't think about, did I need to be on birth control, anything like that."

After Childbirth

Study participants' contraceptive use improved after childbirth. Nineteen teenagers had initiated a highly effective method immediately after delivery; the other two, interviewed within one month of delivery, intended to use one in the near future, but had not begun by the time of the interview. The method most commonly initiated by the teenagers postpartum was the injectable; nine teenagers had chosen this method (including one who had used it in combination with condoms), five the pill, three an IUD, two a ring, one an implant and one the patch. No participants reported condom use alone, but one reported consistent dual use of condoms with her hormonal method; and one said that she had used condoms or withdrawal after having missed some pills. At the time of the interview, only one teenager had discontinued contraceptive use; she had not been sexually active. This shift in contraceptive behavior reflects changes in many factors that had influenced the teenagers' prepregnancy behavior.

•**Pregnancy intentions and attitudes.** For many teenagers, getting pregnant was a wake-up call about their vulnerability to pregnancy. Teenagers who had not been thinking about the possibility of pregnancy or who were in denial about their risk realized they could get pregnant, and teenagers who had been trying to avoid pregnancy realized that their efforts had been inadequate. Moreover, after experiencing the challenges of parenting, the teenagers were nearly unanimous that having a second child anytime soon would be more than they could handle.

After giving birth, all 21 teenagers said they did not intend to become pregnant, twice as many as had expressed this intention before pregnancy. Of these teenagers, 19 felt

strongly about not becoming pregnant and were adamant about avoiding a rapid repeat pregnancy. An urban Latina 17-year-old—who had intentionally conceived—laughed at the thought of getting pregnant again in the next two years, saying, "I think I'd kill myself. . . . I'm not ready for it. Like, I'm not financially ready, mentally ready, physically ready. No way. Like, I'm just not ready. One is enough. Like, I learned my lesson." In contrast, two teenagers categorized as not intending did not feel as strongly as the others. Although they did not want to get pregnant again soon, they said it would "not be a big deal" if they did.

•**Knowledge of and access to contraceptives.** Participants' contraceptive knowledge and access improved dramatically after childbirth. They had more frequent contact with the health care system and received more information about contraceptive methods, particularly during pregnancy and shortly afterward. Several mentioned having received contraceptive counseling during their prenatal and postpartum care. Nearly all reported that the hospital where they had delivered had given them contraceptive counseling, plus a method or a prescription for one. An urban black 16-year-old, who had not considered the risk of pregnancy or used a method, said that after she delivered, hospital staff told her about a variety of methods: "They were just saying about the pill, the shot, like just different methods. And I just asked, 'Could I get the pill?' And they just prescribed me some pills." Because of pregnancy, most teenagers had enrolled in special social services (e.g., Medicaid maternity care or adolescent parenting programs) that provided additional contraceptive information and support.

Despite these improvements, many young mothers still demonstrated limited knowledge and understanding of contraceptive methods. Some struggled to name specific methods, such as the IUD and implant; others had misconceptions about contraceptive side effects or health consequences.

Moreover, most participants' access to contraceptive information and services had dropped sharply in the first few months postpartum. One important factor in key informants' view was teenagers' loss of Medicaid coverage 60 days postpartum (because those younger than 19 do not qualify for North Carolina's family planning Medicaid waiver). This loss may have prevented teenagers from continuing to see the same provider. As one key informant commented, continuity of care is critical for teenagers, and without it, they may not feel the trust they need to discuss contraceptives honestly. Without Medicaid coverage, teenagers also may not have been able to afford contraceptives.

Another reason for the postpartum drop in access to contraceptive information and services was the end of regular contact with health care providers (other than their infant's pediatrician) and maternity care coordinators. Exceptions were teenagers in programs aimed at preventing repeat pregnancy. Key informants involved in these

programs said that they regularly follow up with teenagers to see if they are having problems with their contraceptive method, and take them to a clinic if needed.

•**Postpartum parental communication.** In some cases, the pregnancy experience had facilitated parent-teenager communication about sex and contraception. After delivery, sex appeared to be a more open topic among some of the teenagers' families, and some mothers (and grandmothers) even helped teenagers select, obtain and sustain use of a contraceptive method.

However, some parental communication about sex remained limited, inhibiting guidance for adolescents' contraceptive use. "I haven't really talked to my mom [about contraceptives]," said a Latina 17-year-old, who was planning to start using the pill. "She just tells me to take care."

One key informant said that mothers who accompany teenagers to a family planning clinic visit and support their contraceptive use improve teenagers' chances of using contraceptives effectively. However, the informant noted, mothers often do not support teenagers' contraceptive use, because they feel that their daughters should be home, caring for their babies and not having sex. The occasional condom user who had feared asking her mother about obtaining other methods before her pregnancy recounted that after her baby was born, her mother had dismissed her need for birth control but forbidden her to leave the house without it. "That didn't make sense to me," she related, "so I just went and got some."

•**Method switching, discontinuation and satisfaction.** Although most participants liked the method they were using at the time of the interview, nearly half of those whose babies were at least four months old said they had switched or wanted to switch; one had discontinued use. Of those, four had replaced—or expressed a desire to replace—injectables or the pill with longer term methods (IUD or implant).

The primary reasons for replacing injectables were dislike of side effects (including the pain of the injections, irregular menstruation and weight gain) and concern about long-term health effects. An urban, white 14-year-old, who switched from the injectable to the pill, said, "They say you're not supposed to be on [injectables] for more than two years, and I never got my period, and . . . I know you're supposed to get your period, so I told [the doctor] to take me off of it." Key informants noted additional problems that some teenagers had with injectables, including trouble getting to the clinic every three months for the injection and weight gain.

Two teenagers replaced the pill because they had had trouble remembering to take it daily—some key informants' reason for not recommending the pill.

Teenagers who were using or wanted to switch to an IUD or implant liked the method's effectiveness and ease of use. One 17-year-old whose first choice after delivery was the IUD said, "[The IUD] is really easy because all you have to do is go for one appointment and get it inserted . . . and

you don't have to mess with it." The four teenagers who were using IUDs or implants at the time of the interview all reported satisfaction with the method.

•**Unexpected reinitiation of sex.** Only one teenager, who was not sexually active, had stopped using contraceptives. According to several key informants, because teenagers' relationships tend to be unstable, adolescents are prone to discontinue contraceptive use. One key informant noted that some teenagers feel no need for contraceptives after childbirth, because they cannot imagine having sex again. "But suddenly an opportunity presents itself, and there they are, right?"

Cross-Group Differences

Some reported influences on teenagers' contraceptive use appeared to differ by race, ethnicity or location. Only two of the seven Latinas had used contraceptives before pregnancy, compared with six out of eight blacks and four out of six whites; compared with other participants, Latinas' comments reflected a generally lower level of knowledge about methods before pregnancy. Only blacks had been partly intending a pregnancy; the majority of adolescents classified as not thinking about it were Latinas. After childbirth, no rural teenagers used IUDs, compared with three urban teenagers. Key informants in the rural county health department reported that they did not offer IUDs because of the high cost. Other rural key informants said that local private physicians did not provide IUDs to women younger than 18.

DISCUSSION

Consistent with previous research,⁹ adolescent mothers in our sample were more likely to have used contraceptive methods, especially highly effective methods, after childbirth than before. Relatively little research has explored the dynamics of this change. A focus group study found that Latinas in Chicago had a greater appreciation for the importance of contraceptive use, plus improved knowledge and access, after having experienced teenage pregnancy.¹⁶ Similarly, in our sample, after childbirth, the teenagers understood more clearly the risk of conception through unprotected sex, and had stronger intentions to avoid pregnancy. They also had greater knowledge of and access to contraceptive services and, in some cases, more programmatic and parental support for contraceptive use.

However, the teenagers' ready access to contraceptive methods and support had not always lasted long after delivery, which contributed to the risk of contraceptive discontinuation. Although only one teenager had stopped using contraceptives at the time of the interview, many had switched methods or had considered switching just a few months postpartum. This method switching, which can lead to gaps in use and increase the risk of unintended pregnancy,^{18,19} highlights the need for ongoing contraceptive counseling and follow-up, to ensure that teenagers have the information and support they need to tolerate their current method or find one that they prefer. Expanding adolescent

parenting programs is one approach to improving contraceptive follow-up; participants who joined such programs received ongoing support. Additionally, it is important to strengthen linkages between providers of maternity care—whom teenagers typically stop seeing after their six-week postpartum visit—and of family planning to facilitate continuity of care.

Because frequent well-child visits are recommended during a child's first two years,²⁰ a teenage mother who even loosely follows these guidelines will likely make more visits to a pediatrician during these years than she will to any other type of provider. Thus, pediatricians would be well positioned to assess whether adolescent mothers are experiencing contraceptive problems and to refer them for services. (The American Academy of Pediatrics has advised pediatricians to play a similar role in screening mothers for postpartum depression.²¹)

In some cases, parents could help provide contraceptive follow-up; however, some participants reported persistent difficulty communicating with parents about sex and contraceptive use, even after childbirth. Additional research is needed to investigate communication barriers and identify strategies to help parents overcome them. Meanwhile, health care providers should emphasize to parents the importance of their daughters' ongoing contraceptive use and give them information about different methods. Providers should urge parents to check in with their daughters regularly about their method satisfaction and help them obtain family planning services. Providers might address these issues with parents who are in the hospital when their teenager delivers.

Previous studies have not shown much use of the IUD or implant among postpartum adolescents;^{9,10,14} notably, four teenagers in our sample had chosen one of these methods after delivery (although the teenager who had chosen the implant had not started it at the time of the interview), and three had switched or were planning to switch to one. Implanon, a one-rod implant, was approved for use in the United States in 2006,²² only a short time before our study was conducted. (Norplant had been available and used by at least some teens until its distribution was stopped in 2002.¹⁰) And IUD use has increased substantially in recent years. Among women who had had one birth, 2% of contraceptive users relied on an IUD in 2002, compared with 8% in 2006–2008.²³ Increased use of these methods among adolescents may be especially valuable for preventing rapid repeat pregnancy, as they are less prone to user error and have lower discontinuation rates than other methods, and are appropriate for adolescents.^{10,24–26} In this study, IUDs in particular had been well received by the few teenagers who had used them. However, research indicates that only about half of physicians' offices and family planning clinics offer IUDs on-site.²⁷ The method's unavailability to rural teenagers in particular suggests the need to address clinics' inability to afford it and provider biases against teenagers' using it.

In North Carolina, extending eligibility for the family planning Medicaid waiver to adolescents younger than 19 could help to increase their access to IUDs and other highly effective methods that otherwise may be unaffordable. It also could improve continuity of care, by allowing adolescents to continue seeing the same health care provider after childbirth.

One concern about study participants' postpartum contraceptive use was that as they had shifted to more effective methods, their condom use had plummeted. Nearly half of the teenagers had used condoms before pregnancy, but postpartum, only one was using condoms in a way that would help protect against STDs—with some consistency. Quantitative studies have yielded similar findings: In five studies, 32–63% of teenage mothers reported having never or infrequently used condoms.¹¹ This lack of condom use is of particular concern, because adolescent mothers are nearly twice as likely as their nulliparous peers to contract an STD.²⁸ To reduce the risk of STDs in this population, regular contraceptive counseling should underscore the need for dual method use.

Limitations and Strengths

This study had some limitations. It used a convenience sample, and participants all resided in central North Carolina; results may differ elsewhere. Furthermore, the study targeted schools and other social service organizations for recruitment; teenagers outside of the school system or social services may have had different experiences. And since interviews occurred at various intervals after delivery, the teenagers' experiences were not completely comparable. Nevertheless, the interviews captured a range of perspectives: Teenagers who had given birth a year or more before the interview offered more information about changes in contraceptive use and attitudes after the early postpartum period than those who had given birth closer to the time of the interview.

A strength of the study was its use of in-depth interviews, which allowed us to explore the trajectory and context of each adolescent's experience more fully than quantitative or focus group methods would have. Information from key informants enhanced our understanding of the context in which teenagers operate. Furthermore, whereas previous qualitative studies of teenage pregnancy largely have focused on urban racial minorities, our study was based on a racially diverse sample of teenagers from urban and rural settings. The relatively few differences among racial and ethnic groups suggest that many of the same factors influenced contraceptive use in all groups. However, some differences may not have been apparent because of the small number of teenagers in each group. Future research involving more teenagers in each category could address this issue.

Conclusion

Adolescent mothers need support to start and continue contraceptive use, which will require concerted efforts from health care providers, social service organizations and

parents. With a better understanding of the factors that influence adolescents' postpartum contraceptive use and needs, we can develop more targeted strategies for meeting these needs and reducing rapid repeat teenage pregnancies.

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