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Barriers to and Enablers of Contraceptive Use among Adolescent Females and their Interest in an Emergency Department-based Intervention

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Abstract

Objective—Over 15 million adolescents, many at high risk for pregnancy, use emergency departments (ED) in the United States annually, but little is known regarding reasons for failure to use contraceptives in this population. The purpose of this study was to identify the barriers to and enablers of contraceptive use among adolescent females using the ED and determine their interest in an ED-based pregnancy prevention intervention.

Study Design—We conducted semi-structured, open-ended interviews with females in an urban ED. Eligible females were 14-19 years old, sexually active, presenting for reproductive health complaints, and at risk for pregnancy, defined as non-use of effective (per the World Health Organization) contraception. Interviews were recorded, transcribed, and coded based on thematic analysis. Enrollment continued until no new themes emerged. A modified Health Belief Model guided the organization of the data.

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Results—Participants (n=14) were predominantly Hispanic (93%), insured (93%), and in a sexual relationship (86%). The primary barrier to contraceptive use was perceived health risk, including effects on menstruation, weight, and future fertility. Other barriers consisted of mistrust in contraceptives, ambivalent pregnancy intentions, uncertainty about the future, partner's desire for pregnancy, and limited access to contraceptives. Enablers of past contraceptive use included the presence of a school-based health clinic and clear plans for the future. All participants were receptive to ED-based pregnancy prevention interventions.

Conclusions—The identified barriers and enablers influencing hormonal contraceptive use can be used to inform the design of future ED-based adolescent pregnancy prevention interventions.

Keywords

Teenage Pregnancy; Emergency Medicine; Pregnancy Prevention; Sexual Health; Family Planning Counseling

1. Introduction

In the United States, adolescents account for over 15 million emergency department (ED) visits annually.¹ Many of these adolescents are underinsured and use the ED recurrently.^{1,2} Adolescents who use the ED as their usual source of care are more likely to report substance abuse, worse health status, and mental health problems.³

Female adolescents often present to the ED with reproductive health complaints and many participate in risky sexual behaviors.^{4–6} Compared to the general population, adolescent females in the ED are at substantially high risk for unintended pregnancy, mainly due to lack of contraceptive use.^{7,8} Those at highest risk of pregnancy more frequently lack a primary care provider (PCP) and use the ED.⁷ While there is a need to link these at-risk adolescents to primary care, current practices to refer adolescent females from the ED to preventive reproductive care have shown limited success.^{9,10}

It is unknown why adolescents in the ED are not using contraception and whether they would be receptive to an ED-based pregnancy prevention intervention. While qualitative studies have examined the reasons adolescent females in outpatient settings inconsistently use contraception, females who often use the ED may have different reasons for inconsistent use than those seeking outpatient care.^{11–13} Understanding these reasons is imperative to designing effective pregnancy prevention strategies. Therefore, the objectives of this study were to 1) identify the barriers and enablers affecting contraceptive use among adolescent females using the ED who are at high risk for pregnancy and 2) determine interest in ED-based pregnancy prevention interventions.

2. Materials and Methods

We conducted semi-structured interviews from June–October 2013 at an urban tertiary-care pediatric ED. The Institutional Review Board approved the study with written informed consent for participants and a waiver of parental consent.

2.1. Study Subjects

We enrolled a convenience sample of females 14 through 19 years who presented to the ED. Eligibility required being 1) sexually active with a male partner in the past three months, 2) a reproductive health complaint and 3) high risk for pregnancy, defined as non-use of contraception at last intercourse and currently not using any of the following: the injectable (Depo-Provera®), an intrauterine device (IUD), the intravaginal ring (NuvaRing®), an implant (Implanon® or Nexplanon®), the patch (Ortho Evra®), or oral contraceptive pills (OCPs). We excluded patients if pregnant, trying to become pregnant, too sick per the attending physician, cognitively impaired, in foster care or a ward of the state, or not English-speaking. We enrolled only English-speaking patients as our prior studies demonstrated that our adolescent Hispanic population is bilingual.⁷

The participants interviewed in this study were part of a two-part qualitative study. The first part (presented herein) explored why adolescents were not using contraception and their receptivity to an ED-based pregnancy prevention intervention. The second part concentrates on the use of text messaging from the ED. Therefore, we also excluded patients who did not own a mobile phone with text messaging capabilities.

2.2. Study Procedures

Eligibility screenings were completed by attending physicians. Patients were consented by the research team. After obtaining consent, participants completed a paper-based questionnaire regarding demographics, access to care, sexual behaviors, and pregnancy intentions. To understand the multidimensionality of pregnancy intentions, participants were asked about trying, wanting and planning to become pregnant, partner desire for pregnancy, and timing of future pregnancy. Interviews were conducted in a private room by one of two trained interviewers (LC or RS), recorded, and transcribed by a professional service.

2.3. Interview Guide

The study team iteratively wrote and refined the interview guide. The interview began by showing photos to the participant of unlabeled contraceptive methods, asking “Have you heard of any of these devices/pills?” and requiring an explanation to the answer. The interviewer inquired about prior contraceptive use, experiences with those methods, where she received them, and what made her stop use. Probes included past conversations about contraceptives with family, friends, partners, and medical professionals. Participants who expressed ambivalence about pregnancy intentions were asked to explain their reasoning. Lastly, the interviewer inquired about attitudes toward an ED provider discussing reproductive health and providing contraceptives, reasons for using the ED, and ideas for future ED-based pregnancy prevention interventions.

2.4. Data Analysis

We had approval to conduct 20 interviews; however, interviews were conducted until no new themes emerged. Two investigators (LC and TH) coded the transcripts using Excel and NVivo 10 software. A set of codes was independently generated by each analyst. We used a modified Health Belief Model (HBM) to organize our themes, which focuses on explaining and predicting compliance with health and medical care recommendations.¹⁴ A codebook

was developed for use during analysis. Study team members discussed discrepancies in coding until consensus was achieved. Quotes were classified as either a barrier or enabler.

3. Results

Fourteen interviews were conducted, with no new themes emerging after the twelfth. Participants were predominantly older adolescents, Hispanic, Medicaid-insured, and prior contraceptive users (Table 1).

Based on the modified HBM, themes were organized into two main topics areas--Readiness to Use Contraception and Modifying Factors, with ten themes emerging (Figure 1). Table 2 lists theme definitions and quotes that exemplify barriers to and enablers of contraceptive use.

3.1 Readiness to Use Contraception

3.1.1. Health Effects—The most commonly cited barrier to contraception use was health effects, primarily physical side effects. Many participants reflected negatively upon past experiences; common sentiments included concern about getting “fat,” “changes” in menstruation, and “spotting.” Women explained how previous contraceptive methods changed their bodies, causing them to want to wait before choosing another method until that method was “out of my system”. Some girls voiced worry over the “creepy” appearance of the implant, and others feared being “marked.”

3.1.2. Mistrust—Mistrust in contraceptives—how it was “not like necessary” and would ruin their bodies—was noted. Participants recounted stories of pregnancy despite using hormonal contraception or having unprotected sex without becoming pregnant. Some interviewees exhibited apprehension toward using contraceptives that might “mess with you and not having kids,” cause “birth defects,” and “damage” the body by something being “inserted.” There was also fear of the seeming permanency with certain methods, such as the injectable, and how “you can't take it off or you can't come off (it).”

3.1.3. Pregnancy Intentions—Ambivalence toward pregnancy--unresolved feelings about wanting to have a child at a particular time--was common. Several participants explained how they would continue the pregnancy if they became pregnant saying, “Right now I'm not ready for a baby but if was to happen, I wouldn't [have an abortion].” Some talked about their partners wanting a “family,” which influenced non-use of contraception, despite females knowing that having a baby is “hard” and a “responsibility.”

3.1.4. Plans for the Future—Adolescents who talked about future plans such as wanting to finish school, find a job, and become financially secure were empowered to use effective contraceptives. Many wanted to have kids one day but “definitely not near anywhere near now.”

3.2. Modifying Factors

3.2.1. Access to Contraception—The primary enabler of contraceptive access was the presence of a school-based health or college clinic, from which several participants had

received contraception. One participant noted that when her school had a health educator she was able to get contraception; this ability disappeared when her middle school lost funding. Participants feared the loss of anonymity when they used the same local clinics as family members. Furthermore, long delays to obtain clinic appointments were barriers. Finally, contraceptive access was delayed due to refusal of the PCP to provide certain methods. Several participants recalled how their doctors did not “recommend” the IUD “because I don't have any kids.”

3.2.2. Physician-Patient Relationship—Participants mentioned lack of privacy in conversations with PCPs as a major obstacle, with parents being allowed to stay in the room. Others relayed how conversations with their doctors were not detailed and excluded methods such as IUDs. On the contrary, as an enabler to contraceptive use, participants liked doctors who took “their time to explain.” They appreciated a respectful office staff, contraception counseling at each visit, and being treated like an “adult.”

3.2.3. Interpersonal Relationships: Friends, Partners, and Family—A majority described friends who shared negative perspectives, that contraception causes “bloating,” “bleeding,” and death. Friends who became pregnant when using contraceptives often dissuaded contraceptive initiation amongst peers. Knowing friends who participated in risky sexual behaviors enabled contraceptive use. Meanwhile, friends who had positive experiences encouraged contraception, often explaining methods and recommending medical care sites.

Partner desire for pregnancy influenced contraceptive use; this was often linked with pregnancy ambivalence. Other women noted their partners needed reminders to use a condom, which one participant found “weird” and made her question his pregnancy intentions. However, when participants had relationships in which “they both don't want kids right now,” safe sex was “self-implied.”

Participants rarely mentioned their fathers' influence on contraceptive choices, and their mothers seemed more of a barrier than an enabler to contraceptive use. Females chose contraceptive methods that were more “discreet” to avoid their mothers notice. Two participants described their mothers finding their contraception and forcing them to stop using it. On the contrary, there were accounts of extended family, such as aunts and stepmothers, acting as enablers, including easing the access to contraception.

3.2.4. Media—Searching the internet often led to anti-contraception material. “Google” searches and “YouTube” videos instilled fear in participants who were considering hormonal contraception. Females recalled television commercials advertising law suits against contraception companies, listing the side effects, and that they might “die.” Other media enabled contraception use, such as an app downloaded by a participant's boyfriend. The participant previously felt that OCPs were “complicated” and hard to take every day, but the app reassured her.

3.2.5. School Education and Services—The presence of a school-based health clinic or organized contraception education in school was the most important enabler cited to

obtaining education on reproductive health. Those who considered their schools as “health schools” or had taken electives in sexual education had greater awareness regarding contraceptive options.

3.2.6. Gynecologic History—Past negative experiences with contraceptive methods were an important barrier to contraception use. Prior pregnancies and abortions also affected contraception decisions.

3.3 Interest in an ED-based Intervention

All participants were receptive to ED physicians talking to them about pregnancy prevention. Participants reported being “open”, saying that conversations about pregnancy prevention are common with doctors. They especially favored interventions for those who are not “informed about contraceptives, so they’ll know there are more options if they don’t like a certain type of birth control.”

All adolescents were interested in learning about contraceptives. Some with negative past experiences were receptive to starting a different hormonal method of contraception in the ED. When asked about the ED providing hormonal contraceptives such as long acting reversible contraception, one adolescent felt that a patient may “want to do it with a regular doctor...someone that you have a relationship with.” However, she noted that she had access to “private doctors” and it might be beneficial for “someone who doesn’t see a doctor as frequently or just doesn’t feel that they have means to obtain birth control.”

Participants explained that the ED provides a confidential location, sometimes more so than a clinic. The ED staff has the parents “step out” as opposed to some PCPs who allow parents to “stay in the room.” The ED was also noted to provide immediate medical care rather than waiting for an appointment.

Finally, we asked participants to help us design an effective ED-based pregnancy prevention intervention. While few females had new ideas or provided details, some mentioned the use of text messaging, email, letters, phone calls, social media like Facebook or Instagram, and the provision of contraceptives in the ED. Participants were asked if the pregnancy prevention intervention should be targeted toward females who present to the ED for a reproductive health complaint. All felt that patients with a reproductive health complaint, such as “I think I am pregnant,” would benefit from an intervention. Some felt that talking about pregnancy prevention to those with non-reproductive health complaints might be “random” and would make the patient wonder “Why are you talking to me about sex?...It’s just sort of a disconnect.”

4. Discussion

In this qualitative analysis, we found that adolescent females at high risk for pregnancy in an ED primarily identified adverse health effects of and mistrust in contraception, poor access to private contraception counseling, ambivalence toward becoming pregnant, and partner desire for pregnancy as important barriers to use of contraception methods. Females who had prior negative experiences with hormonal contraception were less willing to try

contraception again. Contraception use was more likely amongst females who had access to school-based or college health clinics or displayed clear goals for the future. Participants were receptive to ED providers educating about contraception and some were interested in starting a contraceptive method during the ED visit.

The barriers to and enablers of contraception in our ED population were similar to those noted in other outpatient settings.¹⁵ Young women made contraceptive decisions based upon attitudes regarding the risks of the hormones in contraception and the effect on menses.^{11,12} Contraception information regarding contraception relied on personal or second-hand experience, and young females considered contraceptives worthwhile but thought they carried risks of side effects and failure.^{11,12,16,17} Pregnancy ambivalence also has been associated with nonuse in contraceptive use.^{18,19} Similar to other studies in the outpatient setting, adolescents emphasized the need for anonymity; lack of privacy in the doctor's office prevented contraceptive use.^{20–22} Females who were unclear where to receive anonymous contraception counseling often did not receive contraceptives.²³

The provision of contraceptive information to minority communities in creative and accessible ways appears important to reduce teenage and unintended pregnancy.²⁴ Our population was predominantly Hispanic, an ethnic group with a high rate of teenage pregnancy. Similar to our findings, prior studies have noted adolescent concern regarding side effects of hormonal contraceptives, many of which were based on false information.²⁵ Interestingly, our patients did not present themselves as powerless; they seemed eager to learn about new contraceptive options despite varying pregnancy intentions.²⁶ This finding may reflect that the majority of our Hispanic patients were born in the U.S. and may be more acculturated.²⁷

To our knowledge, this is the first qualitative study exploring adolescent interest in pregnancy prevention education and contraceptive initiation in the ED setting. The participants trusted and were interested in discussing pregnancy prevention with the ED provider, despite most having PCPs. In certain cases, the relationship between the patients and PCP was long-standing; patients felt judged by their PCPs, dissuading the adolescent from disclosing sexual experiences. This finding is both important for PCPs, who should emphasize the confidentiality of their patient-provider interaction, and for the design of an ED-based intervention, which should stress how all referral locations provide private services.

The ED encounter may be an opportunity to introduce and possibly provide contraceptive choices; however, such an intervention will need to be tailored to the workflow of an often overburdened ED.²⁸ Interventions may be more successful if they utilize ED resources sparingly and instead provide contraceptive counseling independent of the ED provider.²⁹ As suggested by our participants, targeting females with sexual health complaints may be more effective than a non-targeted intervention. Health behavior change is often triggered by a specific event, experience, or consequence of a risky action.³⁰ A sentinel event, such as fear of being pregnant, and the resulting ED visit could be a motivator for behavior change.

Adolescent females at high risk of pregnancy use the ED for medical care; this encounter represents a promising moment to stage interventions with at-risk populations.^{4,31} A successful intervention could address modifiable barriers to seeking contraception counseling, such as lack of information, and stress the safety, effectiveness, and wide range of contraception options and their minimal side effects. Although increased knowledge of contraceptives does not necessarily lead to increased use, addressing contraception fallacies may move adolescents closer to changing their behaviors.¹⁵ The intervention should focus on those factors enabling contraceptive use such as adolescent self-efficacy, the ability to plan a family, and that the information source is trustworthy.^{32,33,34}

There are limitations to our study. We enrolled a convenience sample of predominantly Hispanic patients. A purposive sampling might have resulted in interviewing a broader distribution across races and ethnicities. No patient remarked about intimate partner violence, however, we did not ask about this important issue directly. Prior data have shown intimate partner violence to be a major factor affecting contraceptive use.³⁵ While this study included females aged 14 to 19, all participants were 16 years and older; females age 15 and younger may have different reasons for contraceptive use. Lastly, we only included adolescents who owned mobile phones; there might be differences in contraceptive use between those who have or do not have a mobile phone.

Implications

This ED-based qualitative analysis of adolescent women at risk for pregnancy identifies contraceptive side effects, mistrust in contraceptives, limited contraception access, pregnancy ambivalence, and pregnancy desires by partners as the primary barriers to contraception use. We found that school based education and services enabled contraception use amongst our population; this could serve to support communities seeking to implement school-based reproductive health services. Adolescents who present to the ED for reproductive complaints welcome ED-based pregnancy prevention interventions. Future interventions in the ED and elsewhere that aim to prevent adolescent pregnancy could target the themes identified in order to maximize the effectiveness of the intervention.

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Abbreviations

US	United States
ED	emergency department
IUD	intrauterine device
OCPs	oral contraceptive pills
HBM	Health Belief Model

Implications

Adolescents who visit the emergency department (ED) identify contraceptive side effects, mistrust in contraceptives, limited access, pregnancy ambivalence, and partner pregnancy desires as barriers to hormonal contraception use. They expressed interest in an ED-based intervention to prevent adolescent pregnancy; such an intervention could target these themes to maximize effectiveness.

Figure 1. Our modified Health Belief Model for predicting and explaining contraception use among adolescents females in our ED. Adapted from the *Modified Health Belief Model*, Becker and Maiman, 1975.

Table 1

Characteristics of adolescent females participating in semi-structured interviews. N=14.

Characteristic	n (%)
Age	
18-19	10 (71)
16-17	4 (39)
14-15	0 (0)
Hispanic	13 (93)
Lived in the United States	
All her life	10 (71)
Over 7 years	3 (21)
4-6 years	1 (7)
Present level of school	
College	8 (57)
High school	3 (21)
Middle school	1 (7)
Not in school	2 (14)
Insured	13 (93)
Access to health care	
Seen a primary care provider in the past year	14 (100)
Seen an ED provider in the past year	13 (93)
Spoke to a doctor about contraception in the past year	9 (64)
Contraception at last intercourse	
No method	3 (21)
Condoms only	8 (57)
Withdrawal	2 (14)
Emergency contraception	1 (7)
Currently in a sexual relationship with a male	12 (86)
Prior pregnancies	5* (36)
Prior contraceptive methods used	
Birth control pills	9 (64)
Shot	5 (36)
Ring	2 (14)
Intra-uterine device	1 (7)
Patch	1 (7)
Implantable device	0 (0)

* 5 prior pregnancies in total amongst 3 adolescent females.

Table 2

Summary of codebook which organizes factors affecting contraception use into themes. Exemplary quotes are listed as either a barrier or enabler. #1 refers to Participant 1.

Theme (Code)	Explanation	Quotes Exemplifying Barriers	Quotes Exemplifying Enablers
READINESS TO USE CONTRACEPTION			
Health Effects	Effects of birth control on health including appearance, infertility pain, or menstruation. This can be from a personal experience or from an outside source.	<i>I don't like it [Depo] that much because it doesn't make my period come down....I don't feel comfortable....Because that is bad blood that needs to leave my body.</i>	<i>The birth control pills were pretty good. My period was lighter and less pain. I really kind of used it for my cramps, because I got really bad cramps. And it actually helped a lot.</i>
Mistrust	Fear of contraception or doubt that it prevents pregnancy	<i>My body is pretty much made the way it's supposed to be made. And I don't need to insert weird things into it.</i>	<i>I feel like with birth control [pills] you're going to start getting back to your old schedules. You're going to be able to have kids again.</i>
Pregnancy Intentions	Emotions about having been or becoming pregnant	<i>Kind of want a baby but I'm not sure...I don't know. Like if it happen it happen...like I won't plan it...Because I tell him [partner] I won't plan it, if it comes, it comes.</i>	<i>Sometimes I do [want to use birth control pills]...because if I do get pregnant what are the chances of me getting a job and getting my own stuff, getting what I want.</i>
Plans for the Future	Perspectives of how the future relates to her decision to use contraception or timing of future pregnancies	<i>Most women stop doing what they want to do in life because they have a child, but it wouldn't make me stop...I would find a way to still be in school, still go to work, and still do what I have to do for me and the baby.</i>	<i>When I was going to college, I made it like very firm, like I don't want to have kids now because I want finish undergrad. I want to like go to law school. I want to do things without having to worry about a child. I don't want to risk something happening to me or like my future plans with having kids just because somebody's in the heat of the moment.</i>
MODIFYING BEHAVIORS			
Access to contraception	Factors which relate to her physical access to contraception	<i>The only thing I don't like is about the appointments. You have to wait a lot for an appointment... Sometimes they want you to wait like four weeks.</i>	<i>It kind of seems like most doctors that I go to want to talk to their patients about it [birth control]...Like a general practitioner, if you go for a check-up, they tend to want talk to you about it.</i>
Physician-Patient Interaction	Factors which relate to prior or current relationships with her physician or other medical personnel.	<i>I wouldn't like to go [talk about contraception] with my doctor, it's not that I don't trust my doctor... I trust her a lot, it is just I don't know, it is like, she is like a mom to me. Yes, he had told me about birth control, about using condoms, which he actually gave me...but we never really talked about the rest of the things...not the Navaring or anything else, the IUD.</i>	<i>The people [at the clinic], they are nice...And then like I ask all the questions, I ask all the weird questions, they laugh at the stuff I would say or whatever I ask. And they are just like no, that's normal and I am like okay. They explain to me perfectly.</i>
Interpersonal Relationships: Friends	Interactions which the respondent had with friends which affected her choice to use contraception	<i>Then my friend kept telling me crazy stories about it....she told me that I could start like crazy bleeding and stuff...I could die...I was like oh my god that's crazy, so I was like never mind.</i>	<i>I had one friend; she was the first one to like become sexually active ...And she was the one that first got to experience birth control. It was like the Depo and the NuvaRing. And she passed on the information and because she knew where to go...So she message does get spread to your friends. I mean there are a lot of girls who are not being careful with their bodies. They're just going out, having sex, and doing stupid stuff... And they get pregnant. And then when they have the baby, they're like, rejecting, neglecting their babies because they're too young.</i>

Theme (Code)	Explanation	Quotes Exemplifying Barriers	Quotes Exemplifying Enablers
Interpersonal Relationship: Partner	Interactions which the respondent had with her past or present partner which affected her choice to use contraception	We've talked about it and he doesn't mind, like he wants to but it's not like we're trying to. If we were to have a baby, he wouldn't mind. I'm confused. I want to have a baby with him [partner], but I think, oh, it's going to be hard for me, I have one [a child] already and he's too little.	Whenever we didn't wear condoms, I would always like freak out... So then I said, you know, why don't we just go, like why don't I just take birth control. He said if I wanted to then he would support that regardless.
Interpersonal Relationships: Family	Interactions which the respondent had with her family which affected her choice to use contraception	My doctor prescribed me birth control pills and my mom never let me take them. I think it [implantable device] is good but for me it wouldn't work because if my mother or my father see that, they going to notice what it is.	Because my aunt was telling me about the IUD and it's good, and so I wanted to go to the gynecologist to try. I went with my aunt.
Media	Experiencing or hearing about media commentary about birth control methods	They said it could cause some kind of cancer? I'm not sure if it was cancer, some type of disease, supposedly. I forgot... It was a commercial. Oh my God. She told me that that could start bleeding and stuff like that, I could die, and then she started showing me all these commercials... so I was like never mind.	I go to Google... The first ones that come up. And then read a lot of girls' comments, if they say... like I've had girls go through the same thing that I've been through. And then they get back on birth control and they say that it's ok... And they're not pregnant and it does work.
School Education and Services	Instances of learning in school about contraception methods	I only had one class sophomore year. And that's the only thing they do.	Ever since sixth grade we talked about this [birth control] because my school is like a health school... it gives us a class about health, those are like our electives... We always have like doctors from here go over there and talk to us.
Gynecologic History	Past gynecologic history which affected the participant's decision to use or not use contraception	Because after I took the pill and I got pregnant, I just kept thinking, oh my God, what if I take it and I get pregnant again?	I don't want to go through that process [elective abortion] again. Because I know right now I am not ready.