Original Report

Messages About Contraception and Condoms in Mother–Adolescent Dyadic Conversations: Knowledge, Risks, and Effectiveness

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A B S T R A C T

Study Objective: Little is known about the content of parental discussions with young adolescents about reproductive health topics. We sought to characterize the messages mothers share about contraception and condoms.
Design: Recruitment occurred between January 2012 and May 2013. Mothers and their 12- to 14-year-old adolescent son or daughter were invited to participate in a semistructured conversation about everyday issues and health topics, including reproductive health topics. Discussions were audio-recorded, transcribed, and a grounded theory approach to content analysis was performed. Content analysis was performed to characterize maternal messages regarding contraception and condoms.
Setting: Urban city in western Pennsylvania.
Participants: Twenty-five dyads; 14 mother–daughter dyads and 11 mother–son dyads.
Interventions: None.
Main Outcome Measures: Maternal reproductive health messages during conversations with early adolescent children.
Results: Four key themes emerged. Theme 1 focused on general facts about condoms and contraceptive methods, how each works, and how to obtain them. Theme 2 emphasized the consequences of sexual behaviors and the advantages of safe sex. Theme 3 conveyed the effectiveness of condoms and contraceptive methods for preventing pregnancy and sexually transmitted infections. Theme 4 described where adolescents could get more information about condoms and contraception.
Conclusion: Mothers convey a broad range of information about contraceptives and condoms to young adolescents.
Key Words: Adolescent, Sex education, Contraception, Condoms, Communication, Parent-child relations, Risk-taking, Sexual behavior

Introduction

The United States has seen a significant decrease in adolescent sexual and reproductive risk behaviors and associated adverse health outcomes in the past decade.[1] Increasingly, adolescents are delaying sexual intercourse and rates of condom (53.8%) and contraceptive (29.4%) use have steadily risen.[1–3] However, young women remain disproportionately affected by unintended pregnancies and sexually transmitted infections (STIs).[1,3–5] Thus, there is a continued need to monitor trends in adolescent sexual activity and to identify opportunities for promoting healthy sexual decision-making.

Research on adolescent sexual and reproductive health behaviors has shown that parents play a key role in shaping adolescents' knowledge and decision-making with regard to sexual health. Parents are not only an adolescent's primary source of sexual health information, but they are also an adolescent's preferred source.[6] Communication between adolescents and their parents is associated with delayed sexual initiation, increased condom and contraceptive use, increased condom use self-efficacy, and fewer episodes of unprotected sex.[7–14]

Much of the research on parental communication has used survey-based methods, which has several limitations, including recall bias and reporter bias. Surveys assess past events and are subject to recall bias. Reporter bias has been a challenge because most survey studies only assess maternal report; few explore the perspectives of mothers and adolescents. More importantly, previous research has prioritized older youth who are near the age of sexual debut, or have already initiated sex. Relatively little is known about how mothers communicate with younger adolescents about sex.

What little dyadic research has been conducted has shown that mothers' knowledge, comfort, and approach to communicating all predict whether sexual health discussions occur, as well as predict adolescents' sexual health knowledge and skills.[15–17] In studies involving direct

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observation of discussions between mothers and adolescents ages 10-14 years old, mothers' openness, inviting tone, and degree of turn-taking during conversations increased perceptions of closeness and satisfaction with the communication for both participants.[14,17–19] Despite increased awareness of the role that mothers play in communicating with adolescents about reproductive health, there remains a gap in our knowledge regarding the actual messages mothers provide during discussions with young adolescents. Such information is important for informing efforts to improve mother–child sharing of information and skills that can optimize adolescents' sexual decision-making. The aim of this study was to identify the messages delivered during mother–adolescent dyadic conversations about condoms and contraception. Consistent with the premise of qualitative research studies that seek to understand phenomenon for which limited data exist, our approach was not hypothesis-driven. Rather, we sought to gain new knowledge about an understudied topic to aid with generating hypotheses to explore in subsequent research.

Materials and Methods

Data Collection

This study was conducted between January 2012 and May 2013. We observed conversations between mothers and their early adolescent children. Data were collected as part of a larger study of maternal–adolescent communication conducted in Pittsburgh, Pennsylvania. Institutional review board approval was obtained at the University of Pittsburgh.

Setting

Pittsburgh is part of Allegheny County where the mean age of sexual initiation is 15 years old, 2 years younger than the national average.[3,20] This higher-risk environment is an ideal context to study the discussion of contraception and condoms.

Eligibility Recruitment and Consent

Mothers were eligible to participate if they self-identified as black or white, English-speaking, were 21 years of age or older, and the parent or legal guardian of an adolescent between the ages of 12 and 14 years. Because of the small Spanish-speaking population in the clinic and city, this population was excluded because transcription services were outside the scope of the budget. According to the 2010 census, only 1.6% identified as Hispanic/Latinx. Adolescents' sexual history was not a consideration for their participation. We placed advertisements at the University of Pittsburgh Adolescent and Young Adult Health Clinic and on Craigslist. The flyers described the study, study sponsors, purpose, eligibility criteria, and who to contact to participate. All participants who enrolled came from Craigslist. All individuals who called for more information about the study were enrolled. Mothers provided written informed consent for themselves and permission for their adolescent to participate. Adolescents provided written informed assent.

Dyadic Conversations

Dyads were given a private research room and asked to engage in a semistructured conversation about 4 topics—nutrition, substance use, sexual and reproductive health, and everyday topics. For each topic, examples were provided of the types of kinds of subtopics they might discuss; however, these topics were not elaborated on or intentionally defined. For nutrition, diet, exercise, and weight were cited. For substance use, smoking, alcohol, and drugs were listed. For sexual and reproductive health, birth control and abstinence were mentioned. For everyday topics, homework, school, and extracurricular activities were listed. The order of the topics was randomized across participants to minimize the influence of previously discussed topics on the messages conveyed regarding subsequent topics. Dyads were instructed to discuss each topic in a manner that felt natural and comfortable. They were asked to use no more than 10 minutes per topic, but could move on to the next topic sooner. Research assistants used a timer to determine when 10 minutes had lapsed and would knock on the door and ask dyad to change topics, if they had not already done so. Figure 1 shows the instructions provided to dyads. All discussions were audio-recorded, on the basis of preliminary work showing that adolescents in our target age range were more comfortable with audio-recording than video recording of discussions about sexual health issues. Although dyads discussed a breadth of sexual and reproductive health topics, this analysis focused on messages related to condoms and contraception, which, together, were the most frequently discussed sexual and reproductive health topics.

Analysis

All dyad conversations were transcribed verbatim and entered into ATLAS.ti, a qualitative data management program.[21] A grounded theory approach to content analysis was used to analyze the data, which involves a multistep process.[22,23] First, 2 coders independently read transcripts and coded passages line-by-line to identify initial words and phrases reflecting messages related to condoms and contraception. Coders reviewed the transcripts in groups of 3, then met to compare their initial codes to identify emerging themes and related subthemes. This process was repeated until no new themes or subthemes emerged. In this iterative fashion, a codebook was developed then used to recode all transcripts. Patterns were assessed by comparing the frequency and content of messages across subgroups of dyads, meaning across mother–daughter and mother–son dyads, younger and older mothers, and across racial groups. A Sankey diagram was created with SankeyMATIC to convey the proportional quantities of mothers' messages and map these to the themes and subthemes.[24]

Results

Twenty-five dyads enrolled, including 14 (14/25; 56%) mother–daughter and 11 (11/25; 44%) mother–son dyads. The average maternal age was 40.92 (range, 33-55; SD, 5.84) years. Almost half (11/25; 44%) identified as black, 9 (9/25;

- Sit wherever you feel most comfortable.
- You'll spend 40 minutes talking to each other about four topics: everyday issues, two sets of general health topics, sexual health topics; no one else will be in the room while you talk.
- We will audio-record your conversations so we have a record of your conversation.
- You should discuss each topic at a level that feels most comfortable to both of you.
- We are interested in learning more about how mothers and their adolescents talk about different things, so please discuss these topics in any way that feels most natural to you.
- Because we want to make sure that you have time to talk about each topic, I will return every eight minutes to give you a two-minute warning and then ask you to prepare to move on to the next topic.
- If you're ready to move on t o the next topic at that time, please let me know; otherwise, I will leave for two minutes and return to ask you to change topics.
- Each time I ask you to change topics, I will provide you with a list of the next topic for discussion. Do you have any questions?
    - Interviewer allowed time to answer mother and/or adolescent questions
- Four topics were randomly provided:
    - The first topic is everyday issues such as schools, sports, hobbies and friends, and I'll be back in just eight minutes.
    - The second topic is general health topics, such as obesity, nutrition, and physical activity.
    - The next set of topics is general health topics such as alcohol use, drug use and smoking.
    - The last topic is sexual health topics such as abstinence – also known as waiting to have sex – condoms, birth control and contraceptives.

Fig. 1. Instructions provided to mother–adolescent dyads.

36%) were married, 8 (8/25; 32%) were single, and 8 (8/25; 32%) were separated, widowed, or divorced. Twenty (20/25; 80%) mothers had completed some college or earned a degree of higher education; the remainder had completed high school. Adolescents' mean age was 13.2 (SD, 0.75) years, 10 (10/25; 40%) identified as black, and 3 (3/25; 12%) reported previous vaginal–penile intercourse. Participant sociodemographic characteristics are shown in Table 1. Most dyads completed the discussion in less than 10 minutes, with most concluding at 9 minutes. Mothers might have concluded in this time frame because of the experimental environment, having exhausted their discussion for the observation period, or self-regulated their discussions because we indicated a 10-minute limit for discussion.

Thematic Overview

Mothers' messages regarding condoms and contraception reflected 4 main themes. Theme 1 focused on general facts about condoms and contraceptive methods, how each works, and how to obtain them. Theme 2 emphasized the risks, benefits, and consequences of sexual behaviors and the advantages of abstinence and safe sex. Theme 3 conveyed the effectiveness of condoms and contraceptive methods for preventing pregnancy and STIs. Theme 4 described where adolescents could get more information about condoms and contraception. A Sankey diagram (Fig. 2) illustrates the relationship between content codes and themes.

Theme 1

General Facts. All mothers provided adolescents with an overview of birth control and condoms, discussing the available options, how they work, and how to access them. Most focused on the options available for female contraception, and emphasized oral contraceptive pills, intrauterine devices, and depot medroxyprogesterone acetate (Depo); a few (4/25; 16%) mentioned female condoms. Even in mother–son dyads, mothers emphasized female contraceptive methods. For example, after explaining Depo to

Table 1
Demographic Characteristics

Characteristic	Value
Adolescents (n = 25)	
Age (years)	
12	5 (20)
13	10 (40)
14	10 (40)
Sex	
Female	14 (56)
Male	11 (44)
Race	
Black	10 (40)
White	15 (60)
Previous intercourse	3 (12)
Mothers (n = 25)	
Average age, years	40.92 (SD, 5.84)
Race	
Black	11 (44)
White	14 (56)
Education	
High School or GED	5 (20)
Some college	8 (32)
College graduate	8 (32)
Masters or more	4 (16)
Marital status	
Single	8 (32)
Married	9 (36)
Divorced, widowed, or separated	8 (32)

GED, general equivalency diploma.
Data are presented as n (%), except where otherwise noted. Percentages are calculated from total dyads (n = 25).

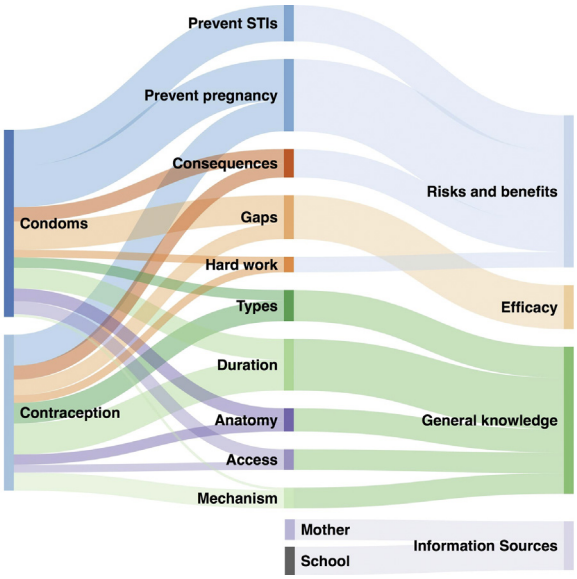

Fig. 2. This Sankey diagram illustrates our exploration of mother–adolescent discussions of sexual and reproductive health topics to emergent subthemes and themes. On the left side of the diagram, our 2 major topics for this analysis are condoms and contraception. On the right side of the diagram are the themes that emerged from the dyadic discussions. Subthemes presented at the midpoint of the diagram (eg, prevent pregnancy, gaps, anatomy, etc) might have overlapped across both topics. The width of the stream from condoms and/or contraception is proportional to the quantity of mothers (n = 25) whose messages corresponded to a specific topic–subtheme combination. The width is also proportional to subtheme–theme present in the sample. Four themes emerged, with a greater portion of mothers' messages focused on general knowledge and risks and benefits of condom and contraceptive use. STI, sexually transmitted infection.

her 13-year-old son, this mother stated, "They have all different types of birth control out now. They have the pills. You can take a pill every day—these are all for females."

Mothers also described the basic details of contraception, such as the dosing frequency, duration of action, and mechanisms by which each method prevents pregnancy. Many (9/25; 36%) emphasized the effort required to effectively use contraception, as exemplified by this passage from a mother and her 14-year-old daughter:

> Daughter: …You have to make sure you're serious about it.
> Mother: [Being] consistent [is important]…Because if you miss…it doesn't cover you. It doesn't control birth, basically.

Most (16/25; 64%) mothers contrasted the duration of shorter- and longer-acting reversible contraceptive options, including how longer-acting reversible contraceptive methods are placed. This mother shared with her 13-year-old daughter, "There's a pill you can take every single day. Or [if] you think of the shot, the Depo-shot, [you have to] go every 3 months…And there are IUDs that you could get implanted in your body, like your arms, and they last for like 5 to 10 years." Many (7/25; 28%) mothers discussed how hormonal contraception "works" (eg, sperm, ovulation, and pregnancy hormones), although most did not refer to specific forms of contraception when discussing the mechanism of action. For example, this mother explained to her 14-year-old son, "Birth control stops the sperm from reaching the egg, so therefore, no baby's made." Notably, there are inaccuracies in mothers' information.

Finally, several (5/25; 20%) mothers also provided locations for their adolescent to obtain condoms and birth control. Mothers who did so used direct and hypothetical questions to assess their adolescent's knowledge of access to contraceptive methods and to encourage participation and turn-taking in the conversation. For example, the mother of a 13-year-old boy began their discussion of reproductive health topics by asking, "…If you were allegedly going to buy a condom, where would you get one?" Condoms were described as available at places a family commonly visited, such as the gas station and pharmacy, and also as "free at Planned Parenthood."

When discussing access to hormonal contraception, mothers mentioned how they envisioned being involved, with some offering to be available when their adolescent felt the need for contraception, whereas others provided conditioned support. The mother of a 12-year-old girl told her daughter that contraception is "a decision you make," she later stated, "I don't intend to get you birth control until you are 18." A few (3/25; 12%) mothers conveyed that their daughter had a choice of which contraception they decided to use.

Theme 2

Risks, Benefits, and Consequences. Mothers discussed the benefits of condoms and contraception, and some of the negative physical and social consequences that can result when adolescents do not use them. In doing so, mothers expressed their personal expectation that their teen remain abstinent until marriage or until their later teens or early adult years.

Mothers discussed the risks and consequences of not using condoms or contraception. For example, several (6/25; 24%) described the hard work of carrying the pregnancy or raising children and emphasized how condoms and contraception could prevent their teen from having a pregnancy too early. This is evident in the following exchange from this mother–daughter dyad involving a 13-year-old girl:

> Mother: Being a mother truthfully, not just [when you are] young, [but] at any age, and having to raise the child by yourself is hard.
> Daughter: 'Cause you're doing everything by yourself.
> Mother: It's hard. It takes 2 parents to make a baby, it should take 2 parents to raise that child. And, what do I always tell you? I don't want you to end up like I did.
> Daughter: Yeah.

A large proportion (14/25; 56%) of mothers also emphasized the benefits of condoms over contraception, as protective against STIs. This quote from the mother of a 14-year-old girl who uses hormonal pills for menstrual regulation typifies this: "I would rather you didn't [have sex]. But, if you do, use a condom. Birth control don't prevent AIDS." Many (8/25; 32%) emphasized always using condoms during intercourse and negotiating condom use. This is exemplified in this exchange between a mother and her 14-year-old daughter:

Mother: And as I've told you…always make sure a guy wears a condom. Even if you have to be the one to give it to him. Don't fall for that "I don't have one."
Daughter: Yep. "Well, look, we ain't doin' nothin'."
Mother: Yeah, exactly. And you stick to it.

Multiple (11/25; 44%) mothers also discussed the negative physical and social consequences of STIs. A large proportion (7/11; 63.6%) of these discussed the potential lifelong consequences of STIs, emphasizing incurability, recurrent symptoms, or fatality. For example, a mother stated to her 12-year-old son, "…It's not good to get any disease, but you can't give AIDS back. [You] can't give herpes back. You can't get rid of that." A couple of mothers mentioned that some STIs can damage a woman's reproductive organs, causing infertility and genital lesions. The mother of a 13-year-old daughter explained:

> "You should never, ever lay down with a man and, and convince him to penetrate you and not use a condom…It could have been too late where it could have did some irreversible damage and, and mess up your reproductive system. And then you're screwed and when you do want to have a family, you're not going to be able to…because of some STD that you then have, you know?"

A couple (2/25; 8%) of mothers used their own experiences to encourage condom use. For example, the mother of a 13-year-old daughter shared the effect of her HIV diagnosis on her romantic life and her hope that her adolescent would not have to suffer the way she did:

> I don't want to see any of, any of y'all end up HIV-positive. There's no cure for that…Can you imagine living with HIV…[and] having to explain…that you're HIV-positive?…I don't have no type of like dating life…You don't want to live like that."

Theme 3

Effectiveness. Most (17/25; 68%) mothers discussed the effectiveness of condoms (11/17; 64.7%) and/or birth control (9/17; 52.9%). In doing so, mothers also mentioned the risk of condom failure because of material defects or improper use. For example, this mother asked her 13-year-old daughter:

Mother: Do you think…condoms are always 99% effective?
Daughter: Um, sometimes…I guess I don't.
Mother: Yeah. But it's always better to use condoms, but condoms can still break under, under pressure.

When discussing the effectiveness of birth control, mothers typically talked about the effectiveness of hormonal methods overall, but did not distinguish between methods or provide precise numbers. This is typified in the following exchange between a mother and her 14-year-old daughter:

Mother: It [birth control] just protects you from having babies.
Daughter: Even sometimes it doesn't protect that, having babies.
Mother: Yeah, you right, it's that percentage. Yep, that's true…

A couple (2/25; 8%) of mothers mentioned abstinence and the rhythm method, citing their "high failure rates." For example, this mother shared with her 14-year-old daughter:

> "The joke is that abstinence is not, also not 100% effective because, you know, the Virgin Mary got pregnant with Jesus. Practiced perfectly, it is more effective than condoms. However, abstinence, the problem with abstinence is that the failure rate is very high."

Theme 4

Information Sources. Nearly half of the mothers (12/25; 48%) impressed upon their adolescents who they believed were appropriate sources of information about condoms and contraception. Most (8/12; 66.7%) of these mothers identified themselves as an available and appropriate information source for adolescents. As this mother asked her 13-year-old daughter, "When you're…involved with somebody that you're ready to have sex with, wouldn't you feel comfortable coming to me?"

Many (11/25; 44%) mothers considered school-based sex education as an important source of information. Several (7/11; 63.6%) of these mothers reassured their adolescent that they would receive sexual and reproductive health education at school. This mother remarked to her 14-year-old son, "I guess, from my end, I've been sort of assuming you will get some of this covered in your health class at school." Mothers who mentioned classroom instruction tended to express discomfort talking about sexual health topics. As this mother put it bluntly, "I wasn't ready to have this talk with you yet."

Many (6/25; 54.5%) dyads explored the limits of classroom instruction, as with this 13-year-old:

Mother: So do you have any questions about any of that at this time?
Daughter: Well, I've kind of…I…
Mother: Do they talk about it at school a lot?
Daughter: Not a lot anymore. It was more, like at our other school when we were learning about our menstrual cycle…none of the teachers discuss it.
Mother: In health class?
Daughter: Nope.
Mother: Did you have—well they did, they didn't go with that last year. They, they did not have that.
Daughter: Nn-nnh, they didn't.

In addition to identifying appropriate information resources for their child, a few (3/25; 12%) mothers desired that their adolescent be able to share information with their future partners because both parties should be responsible for condoms and contraception. For example, this mother advises her 14-year-old daughter, "You don't have to depend on the guy having it in his wallet…You can have it in your purse…You can have it too."

Discussion

This study explored the messages mothers share about condoms and contraception with their early adolescent children during dyadic conversations. We found that

mothers covered 4 key messages: they shared factual knowledge (theme 1); discussed risks, benefits, and consequences (theme 2); described the effectiveness of condoms and contraception (theme 3); and listed key information sources (theme 4). These 4 themes reflect the broad categories of messages mothers discuss and are consistent with the findings from previous survey-based studies. However, this study shows that the dyadic approach provides important, additional information about the accuracy of the information provided, whether messages are age-appropriate, and the emotional tone of discussions. It is these aspects of parent–adolescent communication that might have the strongest influence adolescent receipt of and use of the message content to inform sexual decision-making. As such, our findings can contribute to interventions designed to improve on maternal communication to ensure that discussions maximally educate young adolescents and build decision-making skills.

A key finding from this study is that mothers convey a wide range of information about condoms and contraception to their early adolescent children. Facts about the various types of methods, how they work, the duration of action, and how to obtain methods were all covered along with information about the efficacy, risks, benefits, and other information sources. In addition, discussions of autonomy, sexual agency, and content covered in school-based health classes also arose. In previous survey-based studies conducted among mothers of older adolescents, mothers report discussing a wide range of messages as well.[25,26] This study shows that maternal discussions with younger adolescents are similarly broad in content.

Mothers' messages conveyed some inaccuracies regarding condoms and contraception. Previous studies have also shown parents' limited contraceptive and reproductive health knowledge or intentional provision of misinformation to dissuade adolescents from engaging in sexual activities.[27] Consequently, if adolescents seek conversations with their parents to explore their sexual and reproductive health, although these discussions occur, adolescents might receive inaccurate information. Therefore, efforts to improve adolescent sexual and reproductive health outcomes should include providing parents with accurate information.

Conspicuously absent from most discussions was an emphasis on abstract concepts, like adolescent autonomy in sexual decision-making. This finding corresponds to previous work with 10- to 14-year-old, high school students and parents, which showed that parent–adolescent sexual health tends to focus on factual topics, such puberty, menses, and contraception, in early adolescence and, later, transition to include moral and social values with increased adolescent age and experience.[28,29] Further research comparing the content of discussions among younger and older adolescents could further clarify differences in message delivery on the basis of adolescent age.

There are few studies that explore parental views regarding sources of sexual health information for early adolescents.[30] Previous studies have shown that parental caregivers, particularly those with older adolescent children, often hope to be a key information source and assume that schools and health providers also provide information.[30–32] Our findings were similar, because we found that mothers sought to be the primary sources of sexual health information for the adolescent, and identified school and health providers as other appropriate sources of information. However, maternal perceptions of the volume and types of information early adolescents receive from alternative information sources might be more optimistic than reality. We found that many mothers assumed sexual health topics were covered in schools, with most believing they are covered in greater depth that what parents might provide. This suggests that school-based sexual health curricula should include parents in its development and execution. This way, parents have greater awareness of what their adolescents are learning, which can assist parents in identifying and addressing educational gaps.

As with all studies, this study has limitations. Conversations occurred in a research lab rather than in surroundings more familiar to the dyads. Discussions were therefore contrived, rather than inspired by real life events, which might have affected the messages mothers provided. Survey designs might accurately capture the types of topics discussed, however dyadic methods expand our knowledge regarding the actual messages mothers provide during discussions with young adolescents.

Participants volunteered for the study and likely represent a highly motivated group whose comfort communicating and content of discussion might be greater than what might be found in the general population. The findings might not be generalizable outside of urban, high-risk settings. Only mothers were included; the findings might have differed had other parental caregivers participated, like fathers or grandparents. Mothers were more educated and older than the general population of parents of young adolescents in the county and the nation.[33,34] Parental knowledge of adolescent sexual activity or previous conversations on sexual and reproductive health could have affected study results. We focused on capturing maternal messages, rather than bidirectional information-sharing. We did not assess the adolescent or mother's perception of the discussion, which could have provided insight regarding the conversational climate and how that might have facilitate or truncated information-sharing.

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