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## Adolescent Views on Comprehensive Health Risk Assessment and Counseling: Assessing Gender Differences



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### A B S T R A C T

**Purpose:** Adolescence is an important time for the detection of health risk behaviors and factors with subsequent counseling and intervention. Limited research has examined adolescent perceptions of comprehensive health risk assessments (HRAs) and counseling with an assessment of gender differences.

**Methods:** Participants were identified using Florida's Medicaid and State Children's Health Insurance Program databases. A total of 35 low-income, racially/ethnically diverse adolescents (ages 14–18 years) participated in eight focus groups stratified by gender. Adolescents completed an internet-based, tablet-administered, comprehensive HRA and then participated in a semi-structured interview. Discussions were recorded, transcribed, and analyzed using a multi-step, team-based approach applying grounded theory to determine major themes.

**Results:** Male adolescents desired less parental involvement, had less understanding of the protections of clinical confidentiality and the need for comprehensive HRA, and placed greater emphasis on the importance of professional appearance. In contrast, more females valued face-to-face interactions and stressed the importance of concern from the health risk assessor. Overall, adolescents placed importance on their relationship with the health risk assessor, and on valuing trust, confidentiality, and nonjudgmental care. Adolescents preferred to complete HRAs in clinical, private, and professional settings, and reported that tablet technology supported their confidentiality in completing the HRA. Furthermore, they stressed the importance of autonomy and learning about the health risk outcomes for risk reduction.

**Conclusions:** Gender differences exist in adolescent perceptions of comprehensive HRAs. Adolescent perceptions of HRAs support their use in confidential primary care settings using modalities that emphasize nonjudgmental, private care, and the use of communication techniques that respect adolescents' autonomy to change health risks.

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### IMPLICATIONS AND CONTRIBUTION

Focus groups of low-income, racially/ethnically diverse adolescents emphasized the need for trusted assessors to provide nonjudgmental, confidential care and risk reduction counseling that informs adolescents about negative health consequences, yet respects their autonomy. Differences existed between males' and females' perceptions about comprehensive health risk assessments.

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Adolescence is an important time for prevention and detection of health risk behaviors and factors and their early intervention, such as drug or alcohol use, risky sexual practices, and mental health concerns. If not addressed, these behaviors and risk factors significantly contribute to both adolescent and later adult morbidity and mortality [1,2]. Multiple organizations, including

the Society for Adolescent Health and Medicine, the American Academy of Pediatrics, and the American Academy of Family Physicians, recommend provider-initiated health risk assessment (HRA) and counseling for adolescents [3–5]. Despite these recommendations, most studies describe low levels (3%–25%) of adolescent HRA in clinical settings [6–9]. To address this discrepancy, studies have focused on various interventions, such as the use of health information technology (HIT) to facilitate adolescent risk assessment in health care settings by providers [10,11].

However, no previous studies have assessed adolescent perceptions of comprehensive HRA and counseling, including preferences for settings (clinical and non-clinical) and mode of delivery (e.g., use of HIT). Previous studies assessing adolescents' perceptions have focused primarily on their views of overall clinical care and their care-seeking behavior [12,13]; clinical category-specific HRA, such as sexual health [14]; or specific concepts such as confidentiality or trust [15]. Studies show that low-income, racially/ethnically diverse adolescents have increased rates of risky health behavior [16], and therefore their perspectives provide crucial information for interventions designed to increase health risk assessment and counseling. There are also gender differences in adolescent rates of risk behaviors or factors and receipt of preventive care. Relative to females, males have a greater number of risk behaviors and lower rates of preventive care [17–19]. Because of these differences, there may also be gender differences in perceptions of the usefulness, most effective setting, and best administration modality of HRA among adolescent males and females.

To better inform HRA interventions, we performed a qualitative study to examine both adolescent perceptions of comprehensive HRAs and counseling, and acceptance of HIT to conduct HRAs. We examined differences in HRA perceptions between racially and ethnically diverse male and female adolescents from low-income families. Information obtained from these focus groups can be used to develop patient-centered interventions that promote participation in comprehensive HRAs for racially/ethnically diverse adolescent males and females from disadvantaged backgrounds.

## Methods

### Eligibility and recruitment

We identified low-income, racially/ethnically diverse adolescent males and females as potential participants using Florida's Medicaid and State Children's Health Insurance Program (CHIP) databases. We housed these databases through agreements with the State of Florida and as part of our work examining the quality of care for children in Medicaid and CHIP. Most children in Medicaid and CHIP reside in families earning  $\leq 200\%$  of the Federal poverty level. We designed the focus groups to allow us to reach theoretical saturation related to gender. Because three to five focus groups per population are recommended to reach theoretical saturation, [20], we conducted eight focus groups with adolescents (ages 14–18 years) stratified by gender and race/ethnicity across three different cities in Northern Florida. Six focus groups were conducted with Medicaid enrollees, with one male and one female focus group in each of the following race/ethnicity categories: African-American, white, and Hispanic. Because CHIP enrollees could not be stratified by race/ethnicity, owing to the large percentage of missing race/ethnicity data, two mixed-race focus groups were

enrolled with CHIP enrollees, one male and one female. We did not further stratify groups by age.

To optimize participation, we used ArcGIS software (ArcGIS Desktop, release 10; Environmental Systems Research Institute, Redlands, CA, 2011) to identify clusters of Medicaid and CHIP adolescent males and females from different racial and ethnic backgrounds within each city. We then identified community locations within a 4-mile radius of these clusters to hold focus groups. We randomly sampled 80 adolescents for each planned focus group (640 in total) with the goal of having eight to 10 participants per group to meet a standard goal of having four to 12 participants per focus group [20]. We sent invitation letters and followed up with a phone call. We were unable to contact 420 participants (225 people had invalid phone numbers, 22 had both incorrect addresses and phone numbers, 173 did not answer the phone after three attempts, and 119 declined participation). A total of 101 adolescents agreed to participate over the phone, 47 mailed in signed consent forms, and 35 participated in the focus groups. The University of Florida Institutional Review Board approved the study.

### Study procedure

Adolescents answered some demographic questions and anonymously completed a slightly modified version of the Guidelines for Adolescent Preventive Services (GAPS) [21], a comprehensive adolescent HRA tool developed by the American Medical Association, before the focus group discussion. The GAPS was used in its entirety, with additional questions related to dental care. The modified GAPS was programmed into a secure Web site and accessed via tablet so that adolescents could test the tablet-based entry during the focus groups. We created a semi-structured interview guide (Table 1) based on our aims to acquire information about adolescents' past experiences and attitudes about comprehensive HRAs and counseling. Trained moderators and co-moderators were all matched by gender, and almost all by race/ethnicity to the focus group participants, to encourage an open atmosphere [22]. Participants received a \$25 gift card incentive for participation in the focus group, which lasted approximately 45–60 minutes.

### Analysis

Focus groups were audio taped, transcribed verbatim, and imported into ATLAS.ti Version 7.0 (ATLAS.ti Scientific

**Table 1**  
Semi-structured interview questions

- |  |
|--|
| 1. Who do you talk to when you are worried about your health?  |
| 2. Have you ever completed a health risk assessment form before—like the one you just filled out?  |
| 3. What did you think of the questions?  |
| 4. Do you think asking questions like these can change your health?  |
| 5. What would stop you from filling out a form like this?  |
| 6. What do you think about going to the doctor for checkups?   |
| 7. Would you fill out a health risk assessment form like this in a doctor's office?  |
| 8. Would you fill out the form if there was a special clinic or health program in your neighborhood?   |
| 9. Does it matter to you how you fill out the form?  |
| 10. Do you think talking about your health risks makes a difference in your health? Do you think talking about your health can make you feel better? |
| 11. What do you think about programs to prevent alcohol use, tobacco use, and drug use?  |

Software Development GmbH, Berlin, Germany, 2011), qualitative data management software. Using a grounded theory approach, the six members of the analysis team (T.C, M.K, H.K., L.T., M.W., and B.S.), each with differing academic backgrounds, individually reviewed the transcripts and identified emergent themes and concepts [23]. The analysis team then met, discussed these repeating concepts and themes, and created a coding manual. Coding was also created to capture dissenting views. Two members of the analysis team (T.C. and M.K.) then individually conducted focused coding of each transcript. Weekly meetings were held with the analysis team to discuss the assigned codes and arrive at a consensus with further discussion of themes that emerged after the more in-depth coding and analysis. This reflective and collaborative process aimed to prevent biases of a single researcher. Review of the transcripts revealed that adolescents often had difficulty separating formal health risk assessment conducted via questionnaires, provider verbal health risk assessment, and the subsequent counseling or referral based on the identified risks; therefore, we coded the comments based on the themes identified versus separating responses based on the specific component of the HRA or counseling. A list of quotations for each generated theme was pulled from ATLAS.ti and stratified by gender. The analysis team reviewed all codes, looking at similarities and differences based on gender, to allow for final analyses of the overarching themes.

## Results

The self-reported demographics of the focus group participants illustrate representation across age and gender, with substantial involvement of African-American and Hispanic adolescents, as our recruitment strategy had intended (Table 2). Adolescents reported a range of health risks on the tablet-administered HRA ranging from insufficient exercise (45.5%) to a history of sexual intercourse (35.3%) and drug use (11.8%) (Table 2).

When asked about whom they approach to discuss health concerns, adolescents primarily named either a family member or peer. They secondarily named doctors and specific community figures, such as pastors or teachers. Both genders periodically noted internet use for health concerns. Doctors were often considered an important source of information because of their knowledge base and their ability to provide detailed patient-specific health information. In general, adolescents felt that the slightly modified GAPS was thorough and did not have many concerns about its length or content, although a few wanted more questions, including questions about bullying. Conversely, some participants, particularly males, felt there should be fewer and less detailed questions. Although a few adolescents did not recall having previously completed a formal HRA, many reported that they had previously performed a formal HRA in school or a clinical setting. In-depth review of the transcripts revealed three major themes of importance for adolescent HRA and counseling: (1) characteristics of the relationship with the health risk assessor, (2) the contextual elements around HRA administration, and (3) the role of individual autonomy and the importance of understanding negative outcomes in leading to risk reduction. In general, males and females had similar major thematic perceptions, but there were gender differences in various components of the major themes.

**Table 2**  
Participant demographics and self-reported risks

	% (n) <sup>a</sup>
Age, years	
14	26.5 (9)
15	11.8 (4)
16	20.6 (7)
17	23.5 (8)
≥18	17.6 (6)
Gender <sup>a</sup>	
Female	47.1 (16)
Male	50.0 (17)
Race/ethnicity <sup>a</sup>	
Hispanic	29.4 (10)
Black/African-American non-Hispanic	47.1 (16)
White non-Hispanic	17.6 (6)
Asian non-Hispanic	2.9 (1)
Risks	
Sexual health	
Desire knowledge about human immunodeficiency virus/acquired immunodeficiency syndrome	47.1 (16)
Desire knowledge/supplies on birth control/sexually transmitted diseases	29.4 (10)
Previous sexual intercourse	35.3 (12)
Birth control not used (of those sexually active) <sup>b</sup>	50.0 (10)
Infrequent condom use (of those sexually active) <sup>b</sup>	33.3 (5)
Emotional health	
Very sad in past 2 weeks	32.4 (11)
Suicidal thoughts	23.5 (8)
Seriously consider running away	20.6 (7)
Potential learning problem	20.6 (7)
Abuse (ever)	11.8 (4)
Substance use	
Friend drunk in past month	38.2 (13)
Friend drug use	35.3 (12)
Ridden with intoxicated driver in past year	29.4 (10)
Household tobacco use	29.4 (10)
Worrisome family drug/alcohol use	23.5 (8)
Drug use (ever)	11.8 (4)
Drunk in past month	5.9 (2)
Tobacco use	2.9 (1)
Weight and exercise	
Insufficient exercise	44.1 (15)
Poor eating habits	44.1 (15)
Negative body image	32.4 (11)
Unhealthy weight loss/control	17.6 (6)

<sup>a</sup> A total of 35 adolescents participated in the focus groups, however one participant did not answer questions on the survey and one did not provide gender and race/ethnicity.

<sup>b</sup> When asked about birth control nonuse, 20 reported current sexual activity, whereas for infrequent condom use, 15 reported current sexual activity.

### Major Theme 1: relational values of the health risk assessor

Adolescents frequently discussed the importance of values specific to the relationship they had with the health risk assessor. This consisted of a compilation of minor themes regarding the importance of having a trusting, confidential, nonjudgmental, and caring relationship (Table 3, Major Theme 1).

**Trusting, confidential relationship.** Adolescents noted the presence of trusting relationships to be important in HRAs (Table 3, Section 1A). With regard to clinical settings, more females cited the value of personable communication in building trust, whereas more males focused on the value of the longevity of the relationship. Trust and confidentiality were often intertwined. For a good relationship to exist, adolescents had to feel they could trust the health risk assessor, which often depended on the ability and willingness of the assessor to maintain

**Table 3**  
Sample of adolescent quotations on comprehensive health risk assessment, divided by gender

Male	Female
<b>Major Theme 1: Relational Values</b>	
<b>1A. Confidential, trusting relationship</b>	
Adolescents emphasized the importance of a good, trusting relationship and the value of personal communication in HRAs.	
<i>If you trust somebody, then you're more likely to listen to him [doctor] than someone that you don't trust...</i> [Caucasian]	<i>...I felt like I trusted her [doctor] and I wanted to be, you know, treated properly so I was honest with her... it [HRA] was more of just like a conversation like this ...</i> [Caucasian]
The longevity and frequency of contact facilitated trust.	
<i>Just like the old people. They trust their doctors because they go to the doctor's over years of time, so they trust the doctors that they go to, but the people that are younger don't have a chance to build a relationship with a certain doctor, so they're like, "I don't know this dude. I don't know him."</i> [Caucasian]	<i>Because after, like, so many years with them [doctors], you get used to them and they become more familiar with you.</i> [Hispanic]
Lack of a trusting relationship and fear of loss of confidentiality may prevent adolescents from divulging information.	
Some were aware of how it could adversely affect health (see also 2B).	
<i>The doctors, like, you trust them, like, doing stuff like your ankle or your elbow or something, but if they asked or have some questions like that, you can start being more protective and more lenient toward not telling them everything...</i> [Caucasian]	<i>They [adolescents] don't trust them [school nurses] enough to talk it over.</i> [Combined race]
<i>The more open the relationship an adolescent has with their parents, the more willing they are to share the information with doctors.</i>	<i>"Oh, I won't tell your parents and this is anonymous," but you can hear it in their [doctor's] voice, like, they're going to tell your parents anyway. So, you're like, "Um." [Hispanic]</i>
<i>The less you have to hide from your parents, the more truthful you'll be at the doctor.</i> [Caucasian]	<i>And I said, "You can say anything in front of my mom. We are completely open." Then my mom was allowed back in the room.</i> [Caucasian]
Stating the provisions and limits of confidentiality was important. Males were more skeptical regarding the provision of confidentiality	
<i>It [confidentiality statement] should be said.</i> [African-American]	<i>I do trust my doctor, but sometimes she would ask too many questions. Because, like, you don't know them. They're just there to check up on you, not really to talk like that.</i> [Combined race]
<i>I think if it says, like ... says doctor–patient, it's just between them and it won't be shared with anyone else.</i> [African-American]	
<b>1B. Importance of nonjudgmental concern</b>	
Adolescents are more likely to participate in HRAs and programs if they feel that the individual is concerned and trying to help.	
<i>My main, um, doctor that I always go to, um, I've been going to him for years, so it's ... I recognize and I'm comfortable with him and everything.</i> [Hispanic]	<i>He [physician] just want to make sure that everything is okay, so I would probably go [to the health program].</i> [African American]
	<i>I would, 'cause they'll [doctors] try to help and, um, it'll make you feel a little better knowin' that a doctor is concerned ...</i> [African American]
Adolescents were often concerned about familial or others' judgments or reactions.	
<i>Not for your mom to lose respect for you or trust for you, 'cause, like, before that everything was goin' cool, but after that ...</i> [Combined race]	<i>You don't want people to judge you.</i> [African-American]
<i>Ya, like the bad child or she [mother] raised me wrong.</i> [Combined race]	
Adolescents also had significant concerns regarding physician judgment.	
<i>Doctors are put on pedestals and ... they [Teens] feel like the people on the pedestal are putting them [teens] down so that they feel like, "Oh, we're not worth the doctor, to get the doctor. Leave him alone. I don't need a doctor," and stuff like that...</i> [Caucasian]	<i>They [teens] don't want to get criticized for being honest. I think that's what stops people from answering. "Yes, I'm sexually active." Because of that, they don't want to be judged and they're ashamed of it, or something to that effect.</i> [Caucasian]
	<i>I would trust her [an adult] if she was, like you said, not judgmental and she was like, "Here are some safety precautions. Here's what you can do." [Being] positive. Not saying, "Well, that's really bad." And all kinds of stuff like that.</i> [Caucasian]
Adolescents preferred surveys of HRAs because of their lack of being judgmental.	
<i>'Cause, when you go through it with your doctor, they just scan it and won't have to make you feel bad.</i> [African American]	<i>... If you're writing it down [survey answers], you don't have to say it to their face, so there is no, you know, they won't judge you face to face.</i> [Caucasian]
<b>Major Theme 2: Contextual Values</b>	
<b>2A. School/community settings</b>	
Adolescents mostly noted concerns about confidentiality in school and community settings (e.g., mobile clinics).	
<i>I would, but it would be, like, uncomfortable because, you know, the neighborhood and stuff. They're all there, probably lining up filling one out, too.</i> [Hispanic]	<i>I would never answer the right because I would not want anybody knowing what I have done ... at school I wouldn't want it accidentally getting out ...</i> [Caucasian]
	<i>And then you see all your friends there and they're like, "What did you put for this? What did you put for that?"</i> [Hispanic]
<b>2B. Clinical setting</b>	
In the clinical setting, many adolescents were open to completing HRAs.	
<i>Friends, like, they might tell you something wrong and you might follow behind them, and you just go to the right person, which is the doctor</i> [African American]	<i>My female vagina doctor asked me if I was sexually active or if I used drugs. I felt like it was, like, her job to ask me that so it wasn't uncomfortable.</i> [Caucasian]

(continued on next page)

**Table 3**  
Continued

Male	Female
<p>Adolescents were concerned about the presence of parents in the clinical setting.  <i>Yeah, because if ... their [parents are] watching what they [teens] put on the answers, they're going to put down what they want the parents to know on there so they don't get in trouble or nothing.</i> [Caucasian]  <i>I wouldn't care if, like, it was just me and the doctor, but not me and the doctor with my parents.</i> [African-American]</p>	<p><i>I ask my doctor to make sure they [parents] step out.</i> [Combined race]</p>
<p>Adolescents had some understanding, but mostly misunderstanding of confidentiality, and often viewed clinic visits as a way for parents to find out health risk information.  <i>I would assume that the doctor always tells your parents everything.</i> [Caucasian]</p>	<p><i>I don't feel my doctor will do it unless it's something real serious, like pregnancy or disease...</i> [African-American]  <i>They'll [parents] always ask us questions and they won't let us do anything and they won't trust us and they're always making sure that we get checkups. Like, my friend's mom made him get a checkup every month to make sure he didn't do drugs.</i> [Hispanic]  <i>...They're [doctors] going to tell your parents anyway. So, you're like, "Um."</i> [Hispanic]</p>
<p>Adolescents had differences in perceptions regarding the value of preventive care.  <i>I've had some only on football, basketball, and stuff. Like, somebody would bring me to a checkup if I really need it ...</i> [Combined race]  <i>'Cause there ain't no point of goin' to the doctor if their ain't nothin' wrong with you ... Never even seen no need for a doctor unless, like, broken ankle, then I've got to go to the hospital.</i> [Caucasian]</p>	<p><i>Um, maybe the outcome. You don't want to know that you have this issue or something. You don't want to really know, you just want to...uh, that it happened.</i> [Hispanic]</p>
<p>Some adolescents placed particular emphasis on the professional appearance of the clinic.  <i>... it's got to be a legit lab coat and, like, goggles and that stuff.</i> [Hispanic]  <i>And, um, the doctor office, like, looks really beat down [What would prevent them from going to the doctor] ...</i> [Hispanic]</p>	
<p>2C. Modality  Adolescents viewed the iPad as a novel tool that allowed for greater privacy, but some adolescents still valued personal communication.  <i>Ya, it [using an iPad] will get more people to do it.</i> [African-American]  <i>I think they would be more likely to do it on the iPad because that's the way technology is nowadays.</i> [Caucasian]</p>	<p><i>[Unlike a typical computer], it's not, like, up there, like, right there in front of you where people can just, like, walk past behind you and then watch you.</i> [Combined race]  <i>Tell me to my face that I need to go to one of those type of services ...</i> [African-American]  <i>More face-to-face than e-mail attachment.</i> [African-American]</p>
<p>Some adolescents noted dependence on parents when completing paper forms, and a dislike of paper forms.  <i>Yeah, because some of the forms they give you, the pack is about that thick. I was, like, I'm not even filling this out. I tell her [mother], I say, "Here, you can fill this out yourself."</i> [Caucasian]  <i>It would be, like, kind of unusual for me.</i> [Caucasian]  <i>Ya, 'cause they [parents] can still see it [when completing HRAs on paper].</i> [African-American]</p>	
<p>Major Theme 3: Autonomy and Importance of Outcomes in Risk Reduction Counseling  3A. Autonomy  Adolescents had an understanding of how the environment (parents/social circle) affects adolescent risk behavior in both engaging in risk behaviors and stopping risk behaviors.  <i>... but then other people that do it, like, oh, my friends are doing this. This sounds fun. I'm going to go do it because it's cool and everybody else is doing it and I want to be a part of it.</i> [Caucasian]</p>	<p><i>It's the environment that they've been raised in and the environment that they are in every single day, because it's peer pressure, but then it's also... Or it's just a learned thing and so eventually their mind's, like, "Oh, it's not bad; it's okay."</i> [Hispanic]</p>
<p>Adolescents emphasized the role of the individual in deciding to change. Telling adolescents they should change can be viewed as a threat to their autonomy.  <i>They won't go. They would think it's a waste of time. They would think, "I don't have a problem. I just have a few drinks here and there, just have fun and be a teenager. It's a teenage experience. I don't have no drinking alcohol problems, I don't need to join this stupid group or whatever."</i> [Caucasian]</p>	<p><i>...It's like, this is our life. It's not their life. Like, they can't tell us what to do with our lives.</i> [Combined race]  <i>You can't help them if they don't want to help themselves, so ...</i> [Combined race]</p>
<p>Some adolescents felt that completing an HRA can provide some motivation for change or help in acquiring resources.  <i>Yeah, because by letting people know ... then they can just help.</i> [Caucasian]</p>	<p><i>[Answering questions can] get the stress off of you.</i> [Combined race]  <i>And then if I wouldn't be honest [answering HRA questions], then I'd put "no" because I'd feel guilty about it. Then I'd probably come home and really think what I'm doing.</i> [Hispanic]  <i>... I'm going to think and consider what you [health risk assessor] think about a certain issue. And it may make me want to change my ways.</i> [Caucasian]</p>

**Table 3**  
Continued

Male	Female
<p>3B. Outcomes</p> <p>Adolescents emphasized the need to know true negative outcomes. Furthermore, seeing or hearing about negative outcomes, particularly from individuals with past experience, can be effective.</p> <p><i>Somebody with experience, I think that it would push them to change.</i> [African-American]</p>	<p>... If they put images of what could possibly happen, then people would be like, "Oh, my gosh. I'm not going to do that." [Combined race]</p> <p><i>If you've got, like, a real live survivor, like, in front of you and he's telling you what took place to him, showing you things ... maybe that will be effective to some people ...</i> [Combined race]</p>
<p>Some adolescents emphasized learning about how others changed their behavior.</p>	<p><i>Well, I've asked, um, actually the other day, this girl that I've known, she used to be really chunky and then she lost a lot of weight. And I was like, "Ooh, how did you lose all of that weight? What was your secret?"</i> [Caucasian]</p>
<p>Some adolescents had fears about outcomes and reported that it prevented them from seeking health care.</p> <p><i>My friends have sex and they don't go to get checked up, so just by going, maybe they would think they have a sexually transmitted disease ...</i> [African-American]</p> <p><i>Like, the results [what would stop them from going to the doctor].</i> [Combined race]</p>	<p><i>Um, maybe the outcome. You don't want to know that you have this issue or something. You don't want to really know, you just want to ... uh, that it happened.</i> [Hispanic]</p>

HRA = health risk assessment.

confidentiality. Adolescents consistently reported that if trust was not established or if they felt that their information was not confidential, they would deny past participation in risky health behaviors. However, some females understood that in clinical settings, answering HRAs dishonestly could adversely affect receipt of appropriate care.

The quality and type of parent–adolescent relationship affected adolescents' honesty in discussing health risks with their physicians. Compared with male adolescents, females appeared to have more open relationships with their mothers. Female adolescents often noted that they did not mind their mothers' presence when discussing risk behaviors with the provider. In contrast, male adolescents noted strong concerns about their mother or other female family members learning about their health risks.

When asked about confidentiality concerns in clinical settings, only a few female adolescents had a clear understanding regarding conditional confidentiality (assurance of confidentiality except for certain situations such as risk of self-harm). Others, more frequently males, seemed to believe that doctors would not provide any type of confidentiality. In contrast, a few adolescents either lacked concern regarding confidentiality or reported that they had not previously thought about it. Both genders reported that the provision of confidentiality and its limits should be stated. The interrelatedness of confidentiality and trust became even more apparent when a few female adolescents reflected on personal or acquaintances' past confidentiality breaches.

**Nonjudgmental concern.** Many adolescents, primarily females, noted the importance of the HRA assessor being concerned or caring about them, particularly in following referral recommendations owing to identified high-risk behavior (Table 3, 1B). Furthermore, adolescents frequently discussed the importance of feeling that the health risk assessor was nonjudgmental. Concerns about parental awareness of their health risks revolved around fears of negative reactions including judgment, loss of trust, or disappointment. Concerns about parental knowledge and judgment were particularly evident in the male focus

groups, whereas females had more concerns regarding physician judgment. Both genders cited that answering questions in a survey format, as opposed to face-to-face, decreased fears about judgment.

#### *Major Theme 2: contextual values of health risk assessment administration*

Adolescents noted several contextual concerns regarding HRAs, including three interrelated components (location, presence of others, and professional appearance) and the modality of HRA administration (Table 3, Major Theme 2).

**Location, presence of others, and professional appearance.** Although many adolescents noted that they had previously completed some form of an HRA in school or community settings, both genders noted concerns regarding the lack of privacy and/or confidentiality in such settings (Table 3, 2A). This was primary because of the presence of other adolescents who know them. As a result, adolescents did not like school or community settings, including mobile clinics, as a place for HRA administration or discussion.

In contrast, most adolescents felt that they would be comfortable completing HRAs in clinical settings (Table 3, 2B). Many participants, primarily females, understood the purpose of HRAs, and recognized that they are important in providing appropriate medical testing and diagnosis. Compared with females, males described less experience with receiving preventive care. When males did access preventive care, they noted that it was for sports physicals. In general, males with more limited preventive care experience did not perceive value in completing HRAs and participating in preventive care. Several adolescents, more males, noted that lack of privacy, such as a parent's presence during HRA completion, would hinder honest HRA. However, there was also a sense that privacy, such as placement alone in a patient room, could be offered in a clinical setting. Females frequently cited being offered privacy but wanting their mother's presence, even though they later stated that their mothers may not be aware of all of their



health risks. Finally, male adolescents emphasized the importance of the professional appearance of a clinic.

**Modality.** Adolescents felt that the method of HRA administration was important (Table 3, 2C). Adolescents noted that tablet administration of an HRA would provide more privacy compared with paper or desktop computer use. In addition, some male adolescents reported that their parents often complete paper-based HRAs, because such assessments are bundled as part of a large check-in packet of documents to be completed at office visits. Adolescent males enjoyed the ease of the tablet touch screen and the novelty of the method. In general, adolescents felt that the use of the tablet also provided a sense of legitimacy to the clinic acquiring their data. Adolescents provided some limited positive feedback regarding the use of other methods of completing HRAs, such as via e-mail or online at home. Female adolescents, however, stressed that they did not want technology to replace face-to-face interaction with providers, particularly with regard to possible risk reduction referrals.

*Major Theme 3: autonomy and awareness of outcomes for risk reduction counseling*

**Autonomy.** Adolescents clearly understood the role played by an individual's parents and social environment in influencing risk behaviors, but they also placed significant emphasis on personal autonomy when it came to changing risk behaviors (Table 3, 3A). Most adolescents were open to doctor/adult recommendations, especially if it was perceived as being offered owing to genuine concern for their welfare (see Major Theme 1). However, they believed that the decision to change is ultimately that of the individual. They noted that effective method of risk reduction counseling for some adolescents may not be effective for others, chiefly those individuals engaging in high-risk activities. Unfortunately, a few adolescents viewed the doctor as a threat to their autonomy and as an extension of parental control. This was based on the parents' use of health care as a way to monitor their risk behaviors. Interestingly, many females felt that simply completing an HRA could help change risk behaviors and provided some motivation to change through self-reflection. In contrast, males placed greater emphasis on the need to follow up on the HRA with specific resources to address those risks.

**Outcomes.** In risk reduction counseling, adolescents valued an honest discussion of risks and learning about the negative consequences of health risks (Table 3, 3B). They believed that hearing from others who had experiences with certain health risks could help prevent or stop risk behaviors. Interestingly, whereas both sexes emphasized the importance of learning about the negative consequences of a given health risk, a few females reported seeking success stories about how someone changed his or her behavior. Adolescents consistently noted that learning about the negative outcomes of health risks could prevent or change health risk. A few, however, also noted that the fear of discovering that they had a negative outcome (e.g., finding out they have a sexually transmitted disease) acted as a deterrent for them to seek medical care.

## Discussion

This qualitative study of adolescents' perceptions of comprehensive HRAs reveals the importance they place on their

relationships with HRA assessors, the context of the HRA, and discussions of risks that inform them of the negative health consequences, yet respect their autonomy. To our knowledge, this is the first qualitative study to focus on adolescents' perceptions of comprehensive HRA and health risk reduction. Furthermore, it includes perceptions of low-income adolescents about HRAs in both clinical and non-clinical settings. Adolescents were more willing discuss health risk information if they understood how questions related to their health, felt that the discussion was confidential, and had a good relationship with the health risk assessor. Adolescents noted the importance of certain contextual elements of HRA to lessen fear of judgment and decrease privacy concerns, such as completing written HRAs on tablets in clinical settings and seeing their regular primary care provider. Finally, adolescents reported they were more likely to follow risk reduction recommendations if they understood the negative consequences of their behavior, felt the recommendation was offered because of care or concern, and felt their autonomy was respected.

Our study identified important gender differences in adolescent perceptions about HRAs, most notably in the first two major themes: characteristics of the relationship with the health risk assessor and the contextual elements regarding HRA administration. These differences included males desiring less parental presence and having decreased understanding of the protections of clinical confidentiality and the need for comprehensive HRA. Males also placed greater emphasis on professional appearance. On the other hand, more females valued face-to-face interaction and stressed the importance of feeling that the health risk assessor cared about them. Few qualitative studies have assessed adolescent gender differences regarding health care confidentiality and receipt of preventive care. The few studies examining health care confidentiality and receipt of preventive care focused on differences between younger and older adolescents, which our study was not designed to assess [24]. However, quantitative studies among adolescents have noted gender differences. Female adolescents are more likely to receive preventive services, such as sexually transmitted disease screening [19]; prefer same-gendered physicians [25–27]; and not receive private time when seeing male physicians [25]. It is unclear whether differences in health-seeking behavior contribute to the gender differences that we observed in the adolescents' perceptions of HRAs, or whether there are other underlying causes. Regardless, it is important to be aware of gender differences and take them into consideration when administering HRAs or developing HRA-based interventions, to optimize honest adolescent HRA.

Adolescents placed importance on having a caring interpersonal relationship with the HRA assessor, similar to other studies evaluating important characteristics of health care providers [13,24,28]. Previous studies likewise noted the importance of trust and provision of nonjudgmental care in physician interactions with adolescents [24,28], which we found to be true for both clinical and non-clinical health risk assessors. Whereas adolescents value continuity of care for both preventive and chronic care [29], this study found that continuity of care is also important for HRA, particularly among males. Our study also found that the modality of HRAs could decrease judgment concerns.

Our study adds to the literature regarding the limits of adolescents' understanding of confidentiality in clinical settings [15,30]. Adolescents, especially males, felt that physicians tend to divulge all information to parents, which reflects the finding

of Klein et al. [30] that although most youth had accessed primary care, only half reported knowing where to access confidential care. Our results further emphasize the importance of universal precautions for optimizing privacy in completing HRAs, particularly for females who may want parental presence but may not be comfortable answering detailed questions regarding their health risks, and the importance of stating the protection and limits of confidentiality to adolescents, to help remove misunderstanding, particularly for male adolescents. Interestingly, in research by Ford et al. [15], after adolescents read a confidentiality statement, they still had significant misunderstandings of confidentiality, which brings to light the importance of providing information to adolescents in clear and simple terminology and “conveying trustworthiness.” This is a key factor our adolescents noted as a necessity for honest HRA.

Our findings are consistent with past studies and extend beyond them in noting that poor parental communication and higher-risk behavior or factors are related to increased confidentiality concerns [15,31]. Previous studies note the importance of providing a private clinical setting for specific types of HRA administration [14], but few asked about adolescents’ privacy concerns in non-clinical settings. Similar to our findings, two previous studies noted that adolescents felt more comfortable discussing health risks in clinical (non-school) settings [32,33]. Our study found that this preference is partially because of privacy concerns, but also because adolescents can more easily understand the purpose of physicians acquiring such personal data. Studies reveal that adolescents have concerns about accessing clinical care where other adolescents they may know can see them [30,34], and our study shows that these same concerns are present for adolescents completing HRAs.

In discussions about risk reduction counseling, adolescents frequently cited the need to understand possible health outcomes and the importance of respecting their autonomy. Adolescence is well-known as a time when autonomy must be negotiated. Studies have noted the importance of supporting adolescents’ autonomy for health promotion, although other factors such as parental responsiveness can also have a role [35,36].

Some limitations of this study merit attention. First, by design, the sample was limited to Medicaid and CHIP enrollees living in a specific region, and only a sample of these adolescents agreed to participate. However, our findings are consistent with other studies performed in different regions and nationally within the United States. Furthermore, the sampling design is a strength of the study, because it allowed us to sample a diverse group of adolescents that would not have been included in our sample if we had used convenience samples of adolescents accessing medical care. Second, because adolescents completed the comprehensive HRA anonymously, owing to our institutional review board specification, many adolescents had difficulty understanding that the real-world application of the comprehensive HRA would not be anonymous. Although moderators attempted to clarify this, review of the transcripts revealed that adolescents still had some misunderstandings.

This study provides insight into adolescents’ perceptions of HRAs and gender differences that must be taken into consideration to provide patient-centered care for adolescents. The key findings of this study are that low-income, racially/ethnically diverse adolescents prefer HRA strategies that make the purpose of HRAs known; provide privacy and discuss confidentiality; use

modalities that emphasize nonjudgmental, private care, such as HRA surveys administered via tablets; and use communication techniques that respect adolescents’ autonomy to change health risks. Furthermore, gender differences such as males’ greater misunderstanding of physicians’ provision of confidentiality and greater emphasis on the importance of the professional appearance of a clinic highlight the need to take additional steps to address such concerns. Building on our study’s findings, potential steps that physicians and clinics can take to address adolescent concerns include the following: Use tablet-based HRAs that provide messages to adolescents that note the reasoning and importance of HRA and highlight the provision of confidentiality; provide privacy in completing the HRA; and provide risk-reduction counseling that respects adolescent autonomy, such as Motivational Interviewing [37].

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## References

- [1] Eaton DK, Kann L, Kinchen S, et al. Youth risk behavior surveillance—United States, 2011. *MMWR Surveill Summ* 2012;61:1–162.
- [2] Lawrence R, Gootman J, Sim J, eds. *Adolescent Health Services: Missing Opportunities*. Washington, DC: National Academies Press; 2009.
- [3] Rosen DS, Elster A, Hedberg V, Paperny D. Clinical preventive services for adolescents: position paper of the Society for Adolescent Medicine. *J Adolesc Health* 1997;21:203–14.
- [4] Hagan J, Shaw J, Duncan P. *Bright futures: guidelines for health supervision of infants, children, and adolescents*. Elk Grove Village (IL): Academy of Pediatrics; 2008.
- [5] Ham P, Allen C. Adolescent health screening and counseling. *Am Fam Physician* 2012;86:1109–16.
- [6] Rutishauser C, Esslinger A, Bond L, Sennhauser F. Consultations with adolescents: the gap between their expectations and their experiences. *Acta Paediatr* 2003;92:1322–6.
- [7] Irwin CE, Adams SH, Park MJ, Newacheck PW. Preventive care for adolescents: few get visits and fewer get services. *Pediatrics* 2009;123:565–72.
- [8] Rand CM, Auinger P, Klein JD, Weitzman M. Preventive counseling at adolescent ambulatory visits. *J Adolesc Health* 2005;37:87–93.
- [9] Klein JD, Wilson KM. Delivering quality care: adolescents’ discussion of health risks with their providers. *J Adolesc Health* 2002;30:190–5.
- [10] Paperny D, Aono J, Lehman R, et al. Computer-assisted detection and intervention in adolescent high-risk health behaviors. *J Pediatr* 1990;116:456–62.
- [11] Mangunkusumo RT, Moorman PW, Van Den Berg-de Ruyter AE, et al. Internet-administered adolescent health questionnaires compared with a paper version in a randomized study. *J Adolesc Health* 2005;36:70.e1–6.
- [12] Ginsburg K, Menapace A, Slap G. Factors affecting the decision to seek health care: the voice of adolescents. *Pediatrics* 1997;100:922–30.
- [13] Coker TR, Sareen HG, Chung PJ, et al. Improving access to and utilization of adolescent preventive health care: the perspectives of adolescents and parents. *J Adolesc Health* 2010;47:133–42.
- [14] Merzel CR, Vandevanter NL, Middlestadt S, et al. Attitudinal and contextual factors associated with discussion of sexual issues during adolescent health visits. *J Adolesc Health* 2004;35:108–15.



- [15] Ford CA, Thomsen SL, Compton B. Adolescents' interpretations of conditional confidentiality assurances. *J Adolesc Health* 2001;29:156–9.
- [16] Blum RW, Beuhring T, Shew ML, et al. The effects of race/ethnicity, income, and family structure on adolescent risk behaviors. *Am J Public Health* 2000;90:1879–84.
- [17] Croll J, Neumark-Sztainer D, Story M, Ireland M. Prevalence and risk and protective factors related to disordered eating behaviors among adolescents: relationship to gender and ethnicity. *J Adolesc Health* 2002;31:166–75.
- [18] Swahn MH, Bossarte RM. Gender, early alcohol use, and suicide ideation and attempts: findings from the 2005 Youth Risk Behavior Survey. *J Adolesc Health* 2007;41:175–81.
- [19] Lau JS, Adams SH, Irwin SH Jr, Ozer EM. Receipt of preventive health services in young adults. *J Adolesc Health* 2013;52:42–9.
- [20] Morgan D. Practical strategies for combining qualitative and quantitative methods: applications to health research. *Qual Health Res* 1998;8:362–76.
- [21] Elster A. The American Medical Association Guidelines for Adolescent Preventive Services. *Arch Pediatr Adolesc Med* 1997;151:958–9.
- [22] Davis RE. Interviewer effects in public health surveys. *Health Educ Res* 2010;25:14.
- [23] Huberman AM, Miles MB. Data management and analysis methods. Thousand Oaks (CA): Sage; 1994.
- [24] Britto MT, Tivorsak TL, Slap GB. Adolescents' needs for health care privacy. *Pediatrics* 2010;126:e1469–76.
- [25] Kapphahn C, Wilson K, Klein J. Adolescent girls' and boys' preferences for provider gender and confidentiality in their health care. *J Adolesc Health* 1999;25:131–42.
- [26] Malus M, LaChance PA, Lamy L, et al. Priorities in adolescent health care: the teenager's viewpoint. *J Fam Pract* 1987;25:159–62.
- [27] Boekeloo BO, Schamus LA, Cheng TL, Simmens SJ. Young adolescents' comfort with discussion about sexual problems with their physician. *Arch Pediatr Adolesc Med* 1996;150:1146.
- [28] Ginsburg KR, Forke CM, Cnaan A, Slap GB. Important health provider characteristics: the perspective of urban ninth graders. *J Dev Behav Pediatr* 2002;23:237–43.
- [29] Beresford BA, Sloper P. Chronically ill adolescents' experiences of communicating with doctors: a qualitative study. *J Adolesc Health* 2003;33:172–9.
- [30] Klein J, McNulty M, Flatau C. Adolescents' access to care—teenagers' self-reported use of services and perceived access to confidential care. *Arch Pediatr Adolesc Med* 1998;152:676–82.
- [31] Lehrer JA, Pantell R, Tebb K, Shafer M. Forgone health care among US adolescents: associations between risk characteristics and confidentiality concern. *J Adolesc Health* 2007;40:218–26.
- [32] OpongOdiseng A, Heycock E. Adolescent health services—through their eyes. *Arch Dis Child* 1997;77:115–9.
- [33] Cheng TL, Savageau JA, Sattler AL, Dewitt TG. Confidentiality in health-care—a survey of knowledge, perceptions, and attitudes among high-school-students. *JAMA* 1993;269:1404–7.
- [34] Elliott BA, Larson JT. Adolescents in mid-sized and rural communities: foregone care, perceived barriers, and risk factors. *J Adolesc Health* 2004;35:303–9.
- [35] Lanza HI, Huang DY, Murphy DA, Hser Y. A latent class analysis of maternal responsiveness and autonomy-granting in early adolescence: prediction to later adolescent sexual risk-taking. *J Early Adolesc* 2013;33:404–28.
- [36] Duncan PM, Garcia AC, Frankowski BL, et al. Inspiring healthy adolescent choices: a rationale for and guide to strength promotion in primary care. *J Adolesc Health* 2007;41:525–35.
- [37] Miller W, Rollnick S. Motivational interviewing: preparing people to change addictive behavior. New York (NY): Guilford Press; 1991.