ABSTRACT

BACKGROUND: School-based sex education remains a contentious topic of public debate, particularly whether schools should offer abstinence-only-until-marriage [AOUM] or comprehensive sex education [CSE] curricula. Student perspectives in this debate, however, are not well-documented.[1-3] This study explored adolescent opinions about their preferred curriculum for sex education. **METHODS:** Eight focus groups and 91 surveys were used to collect opinions and beliefs of Indiana high school students ages 14-18. **RESULTS:** Four key themes emerged 1) adolescents live in a sexually active culture 2) AOUM education is not the preferred choice among teens 3) students rebel against AOUM instruction and 4) students desire CSE so they will know how to protect their health and future aspirations. **CONCLUSION:** In the debate to teach AOUM or CSE, the answer should include an understanding of students' experiences and needs. Students want information that is relevant, realistic and reliable and are relying on schools to provide information they can use to make healthy sexual decisions. School officials, therefore, should assess the sexual behaviors of their students, seek youth insight and use public health data to implement the most appropriate sex education for their students.

BACKGROUND

Adolescent sexual health is an acute public health problem in Indiana. STD rates are second highest among the 13-19 age group, new HIV infections are on the rise and Indiana has the 17th highest teen birth rate in the nation.[4-7] In addition to risky sexual behavior, dating violence and sexual assault are significant problems for Indiana teenagers.[8-9] Thus, more effective approaches are needed to help adolescents make healthy decisions in all aspects impacting their sexual well-being.

School-based health education is a cost-effective approach that can help teens adopt healthy sexual attitudes and behaviors.[10] There are two leading categories for sex education, abstinence-only-until-marriage [AOUM] and abstinence-plus (also known as comprehensive sex education [CSE]). AOUM education exclusively teaches the health benefits of abstinence and seeks to increase risk avoidance by promoting that teens delay sex until marriage.[11] Such curricula does not teach about contraception or condom use, avoids instruction on abortion, and cites STDs and HIV/AIDS as reasons to remain abstinent.[12] CSE programs emphasize abstinence but generally are guided by the notion that a sizable proportion of adolescents will engage in sexual activity.[11] Therefore, CSE aims to protect teens by providing information on contraception to prevent unplanned pregnancy and protection against STDs.[11, 13-15] CSE also includes information about sexual identity, gender formation, and sexual orientation and teaches skills about sexual health decision-making and partner communication.

Controversy over Sex Education. Despite being introduced in the early 1900s, school-based sex education remains a contentious topic of public debate.[16,17] One of today's main disagreements surrounds whether schools should offer AOUM or CSE curricula to their students.[1,18] Some proponents of AOUM believe teaching unmarried people about condoms

encourages sexual debut, immoral or unhealthy sexual behavior and will increase rates of STDs and pregnancy.[19,20] However, some opponents dislike AOUM education because these programs have been found to frequently disseminate medically incorrect information, contain scientific errors and social justice advocates argue that AOUM education discriminates against women, girls, and can be harmful to LGBTQ youth.[21,22] Perhaps the most persuasive argument for CSE, is that AOUM education has proven less effective in changing adolescent risky sexual behaviors and delaying sexual debut.[18,19,23-27]

This issue has been widely debated among politicians, parents and school officials, but student voices are not well-documented.[1-3] A common characteristic of effective sex education involves learning directly from adolescents about the health issue and their needs.[19] This approach can better help identify causes of risky behaviors and could guide curriculum goals and content.

Currently, sex education in Indiana is not mandatory, however if taught, the curriculum must be abstinence-centered, meaning comprehensive topics, can be covered as long as abstinence is stressed first. With findings that 42% of Indiana adolescents have engaged in sexual intercourse and nearly one-third (32%) are currently sexually active, proving many teens are not practicing abstinence, most instructors avoid teaching comprehensive topics such as condom and contraceptive use.[28,29] Rather than teaching more comprehensive topics, it seems to best impact students' sexual attitudes and behaviors through education, learning what type of sex education teens want, will allow schools to develop and present a curriculum that reflects adolescents' experiences and needs and this may achieve health goals more effectively.

Study Purpose: The purpose of this study is to explore adolescent students' opinions about their current sex education and their preference for an AOUM or CSE curriculum. This

study makes two important contributions to the literature; first, it adds student opinions to the debate on sex education. Second, this study uses a mixed methods research design which has rarely been used when documenting youth perspectives about school-based sex education.[14, 30-34] The following research questions guided this study:

RQ1a: What are Indiana adolescents' opinions about AOUM sex education?

RQ1b: What are Indiana adolescents' opinions about CSE?

RQ2: Which type of sex education, AOUM or CSE, do students prefer and why?

METHODS

Study Setting Data collection took place in a rural, Midwestern high school that had approximately 650 enrolled students and offered a mandatory sex education unit. The site was located in a region where adolescents were more heavily impacted by poor sexual health outcomes and teen birth rates were higher than the state average, thus, standing to benefit from such scientific guidance.

Participant criteria Eligible students were between the ages of 13 and 19 years-old and focus group participants must have completed or currently be enrolled in a sex education unit. Participants received a $5-dollar gift card, lunch, and a chance to win a $25 gift card. Survey respondents were entered into a drawing to win a $25 gift card.

Instrumentation The focus group discussion guide is presented in *Table 1*. This semi-structured guide was informed by previous literature exploring adolescent sex education content preferences and teen pregnancy prevention.[14,30] Participants also completed a demographic

questionnaire that recorded their gender, age, ethnicity, and the type of sex education course taken. Students also completed, The Sex Education Evaluation Survey (Appendix 1), which has five sections, however not all are reported in this study. This instrument collects student demographic information and their sexual behaviors. The survey also collects student evaluations of their current sex education curriculum, views about sex education in schools and their sexual health knowledge. This instrument is partly informed by the 2017 Standard High School Youth Risk Behavior Survey (YRBS), survey research from Byers and colleagues[35] and the qualitative research of Aquilino & Bragadottir[30] and Eisenberg and colleagues.[14]

Procedure First, students were recruited to take the online survey. A total of 91 participants completed the survey and 46 agreed to participate in the focus groups. Focus group discussions were used to confirm or disconfirm emergent trends from the surveys. Discussions continued until saturation was reached and in all, eight focus groups were conducted and on average were 65 minutes long. Each group had between two and seven participants and students were grouped by study hall period. Focus group discussions were conducted by one researcher and recorded with a digital recorder.

Data Analysis Recordings were transcribed verbatim by a professional transcriber. The de-identified transcriptions were imported into NVivo 11.4.3, a software program for qualitative analysis.[36] An adaptation of the VSAIEEDC model guided coding and analysis.[37] First, during variation, both authors independently used structural coding to organize data around specific research questions. Both authors were trained and used a codebook based upon the focus group instrument to help develop initial codes. A second round of pattern coding was conducted for specification. Initial themes were reexamined, and connected data was further separated into sub themes. To ensure internal verification, remaining themes were cross examined to explore

meaning across and between codes. Final themes were presented for member checks and compared to existing literature for external verification.

RESULTS

Participant Characteristics

Please insert Tables 2 and 3

Four final themes emerged from the data: 1) adolescents live in a sexually active culture 2) AOUM education is not the preferred choice among teens 3) students rebel against AOUM instruction and 4) students desire CSE so they will know how to protect their health and their future aspirations.

"It just a culture thing." The first theme highlights participants' perception that there is a generational shift in sexual behavior. Almost 53% (n=47) of survey respondents reported being sexually active (*see Table 4*). Focus group participants described how *"times are changing"* and *"in high school, [sex] is becoming something that everyone does."* (male, #402) One participant noted, *"It's just a culture thing now. People are just like, 'oh well they're having sex, so I should have sex.' It's more normalized."* (female, #702) *"It's not this generation anymore...for the past 10 years, it's been all about drugs, sex...it's not about abstinence, wait till you get married."* (female, #705) Sex is so commonplace that, *"Sometimes people treat it as a bad thing. If you don't have sex, then there's something wrong with you."* (female, #505) Similarly, another student shared, *"There's a group of guys in my grade, and they're like, 'I had sex with….and it was like awesome.' Then this one guy's like, 'Oh, I haven't done that a lot' and they're like, 'Oh, you're lame' or something like that. It's kind of cool to have sex."* (female, #506)

Participants also discussed that since *"everyone is doing it, and everyone else seems fine"* there is a dominant perception within the culture that the consequences of unsafe sex *"will not happen to them." "No one thinks it's gonna happen to them, so they don't really take it seriously. STDs, they don't take it seriously."* (female, #203) Another participant added, *"They don't think it'll happen to them or pulling out is enough."* (female, #102). Although 68% (n=32) of sexually active respondents reported being very or extremely knowledgeable about how to prevent HIV, only 53% (n=25) reported using a condom during last intercourse. Interestingly, when asked, which contraceptives were used during last intercourse to prevent pregnancy, just 34% (n=16) reported using condoms, leaving the remaining 66% of sexually active respondents without protection from pregnancy or HIV. Participants explained that *"[people] think that they can cheat the system"* as a primary reason why students did not use protection. *"What are the odds that it could happen to me, is what they're thinking."* (male, #403) Participants also discussed that students *"don't think about it, until it actually happens."*

"It's not realistic to just do abstinence only."

The second theme revealed that participants believed it was unrealistic to teach AOUM curricula. Participants stated that *"most of the people in school have sex"* (female, #702), and *"it's unrealistic to just assume that every high schooler is gonna remain abstinent"* (female, #506), therefore participants overwhelming favored safer sex education. 91% of survey respondents also voted for CSE. One participant stated, *"It seemed impractical to me to be teaching teens [abstinence], who are probably either having sex, or going to have sex soon, and not actually teaching anything useful about it."* (female, #102) Another participant added, *"Tell us to use a condom. Not just, don't have sex. Everyone's going to anyway."* (female, #201) One participant elaborated:

If you wanna have sex [ed in] the school system... be like, okay, we're not gonna prevent you guys from having sex but we're gonna take our time and actually talk about each step and stages that's actually a part of sex, like all the STDs, all the AIDS, what you should do if you're itching or burning. They don't actually teach us the importance or the actual things that comes with sex. They just say, "Oh, don't have sex, use a condom, condoms cost this much." (male, #604)

Participants emphasized that teaching AOUM topics *"isn't working." "The point of sex ed is to teach people how the body, how the sexual organs and intercourse works, and they're really failing to do that. All they're telling is don't do it."* (male, #502) *"The stuff that they're teaching us, isn't effective. It's not affecting us."* (female, #202) One participant elaborated, *"The people that are getting pregnant, getting STDs... you need to teach them because obviously what you're doing isn't working. So you need to educate them better so that way they will at least have the information before they go and do those things."* (female, #603)

Participants believed teachers stressed abstinence because they *"grew up in times where abstinence...was practiced more and they don't wanna accept that it's a new generation and we just do things. Life has...cultures changed."* (female, #702) One student commented, *"Because it's just mostly based around abstinence, they don't face the fact that students are gonna be having sex. It's gonna happen."* (female, #105) Another student (female #808) added, *"It's almost like they make you feel bad if you have sex, but everybody knows they do it, and they just don't wanna talk about it."*

"**Not going to listen to them just because they told you not to."**

Participants also discussed that since AOUM was not *"useful to anyone who's having sex or thinking about it"* they do not *"listen"* or even *"pay attention"* to the information. A participant commented, *"People are gonna do it whether or not the teachers want you to...because people are stubborn, and they don't listen or they don't care...I just feel like it's our generation."* (male, #402) A female participant further explained,

> *Our health class, sometimes they'll have a teacher come in and give us a speech about everything, but it's like they tell us not to do it and we're all high schoolers. You know we're not gonna listen, we're all gonna want to. We're at that age where we're all gonna wanna start doing it.* (female, #305)

A male participant added,

> *If you're going to want to have sex, you're gonna have sex. You're not going to listen to them, just because they told you not to. If someone tells you steps or things to do to help keep yourself safe while you're having intercourse, you're more likely to listen to it. Because you're still getting to have sex.* (male, #204)

Students even discussed how AOUM information encouraged them to *"rebel"* and engage in sexual behaviors. "*Cause you know how, if like someone tells you no, you just wanna do it even more?"* (female, #305) Therefore one participant added, *"It's gonna be easier to persuade someone to be safer having sex, than to just not have sex in a whole."* (male, 204)

“Teach us the safety part.”

The final theme demonstrates because many students are sexually active, most prefer to learn safer sex information in order to avoid adverse consequences and remain healthy. Students discussed since *“people are gonna do it, no matter what”* (male, #403) students wanted teachers to stop *“beating around the bush.”* (female, #503) *“[Students] need answers. They have questions. You need to help them. If they're not gonna stop, you might as well help them, to make sure they don't do something wrong, and something's [not] gonna happen.”* (female, #103) Although close to 79% (n= 70) of respondents reported being extremely or very knowledgeable about how to prevent pregnancy and 63% (n=56) reported being at least very knowledgeable about how to prevent the transmission of STIs, many students preferred CSE so they would *“know how to protect themselves”* (female, #103) and *“how to prevent STD's, teen pregnancy, and everything”* (male, #805). One participant stated:

> *People are gonna have sex. You can't stop it. So might as well teach 'em how to do it the safe way, and how to prevent STDs and pregnancies, and all that stuff. I mean, we gotta think realistic, here. It's high school. Teenagers are gonna be dumb.* (female, #803)

Another participant concurred:

> *They can't tell you to stay abstinent from it... It's life, it's gonna happen. Instead of telling us no and making it seem like a bad thing...give us other options like how to steer away from the STDs and the pregnancy. Give us the safety part. Explain warnings and stuff like that.* (Female, #304)

Participants also wanted to know more about CSE topics in order to protect their future. A participant shared, *"They're pretty important things that can affect your life in the long run, so it's better to know a lot of the information now."* (male, #205). Another student agreed:

> *Some people are gonna wanna have sex occasionally in high school. Some people aren't gonna want to have sex until they're 30. It's up to the people, and the school can't control what people want to do and what people are doing in their relationships. Let's be honest. These are high school students, they're not about to listen to the school when they just say don't have sex. If the students are gonna have sex, they're probably gonna have sex either way. So you may as well just tell them how to do it safely, so they don't screw over their entire life.* (male, #502)

DISCUSSION

This study adds to the literature by incorporating student perspectives into the debate about AOUM and CSE education. Students in this study favored CSE, particularly because they wanted information that is relevant, realistic, and reliable. These findings support previous research arguing that the content of sex education should reflect students' lived experiences and the needs of the target group.[14,19]

The Three R's of Sex Education

Our findings indicate that a sex education curriculum that is relevant to adolescents, includes content that connects to their actual, not ideal behaviors, and aligns with their cultural values. Education and health communication theorists alike have argued for tailored and relevant information when attempting behavior change. According to the Elaboration Likelihood Model

[ELM], when people perceive personal relevance in information, they are more likely to be motivated to attend and actively process the information. [38] Our findings align with this rationale, as participant responses demonstrate when information was not issue-relevant, or did not mirror adolescents' lived experiences they ignored it because it was not deemed "useful." Studies have shown when teachers make information relevant to students, it increases student motivation to study course content and is positively associated with learner empowerment.[39,40]

One way to create relevance in sex education is to include information that is realistic. Such information acknowledges students' realities, reflects their needs, and includes goals that are sensible to achieve. For instance, our results show that adolescents live in a sexually-active culture. Within this culture, sexual intercourse is a norm and abstinence is not highly regarded, and at times, discouraged. In their meta-analysis, Pound and colleagues[41] found globally, that many teens opposed AOUM education because the outcomes were considered unattainable. Similarly, in this study, abstinence was seen as an outdated idea and participants wanted information they perceived could be actualized. Research suggests there is a "shift in cultural mores regarding sexuality-that may be eroding the attainment of abstinence goals sought by educational interventions."[26] By not offering realistic information such as CSE topics, schools miss key opportunities to provide a majority of adolescents with timely information they can use rather immediately to reduce their risk for negative sexual health outcomes. Researchers have argued it is the responsibility of the education system to provide students with accurate and complete information to help them to make informed sexual health choices.[42,43] Withholding information about prevention has been considered unethical and a violation of human rights, as it contradicts the goal of sex education.[42,43] Since our findings demonstrate that students not only want, but need, information about contraceptives and safer intercourse, we concur, if schools do

not provide realistic sex education and continue to teach curricula that ignores students' actual behaviors, they are indeed "failing" students.

Lastly, our results indicate that participants desire and need sex education that is reliable. Although participants reported being knowledgeable about how to protect themselves from STDs and unplanned pregnancy, their reported behaviors suggest otherwise. The discrepancy in condom use and contraceptive use to prevent pregnancy during last intercourse, mentions of the withdrawal method and the perceived invincibility against the consequences of risky sexual behaviors, show that respondents' current sources of sex education are perhaps not trustworthy and incomplete. Misinformation could partly explain why students engage in risky sexual behaviors.[44] To encourage students to practice health protective behaviors, they need information that is medically sound, accurate and includes skill development, which many AOUM have been found not to contain.[22] Providing students with reliable curricula equips them with factual knowledge to engage in the safest and healthiest sexual practices.

Limitations

The present study has limitations worth noting. Although focus group discussions provided rich descriptions of participants' experiences, findings may not be generalizable to other adolescent populations. Additionally, researchers were only allowed to recruit participants from certain classes and this stifled recruitment of survey respondents, resulting in a low participation rate and an overrepresentation of students who were 18 and older (n=48). Despite these limitations, the study had numerous strengths including using mixed methods to offer a holistic understanding of the health issue. Member checks, analyst and data triangulation were

also used to ensure the credibility and confirmability of results.

Conclusion

Given the potential implications for attitude and behavior change, student voices are important to consider when debating issues related to school-based sex education. Although they are the recipients of sex education, adolescents should be viewed as curriculum consultants. Students' realities and preferences need to inform decisions on what is the most suitable sexual health curriculum schools can offer. Since students stand to benefit most from the application of this education, it is imperative their perspectives are sought and implemented.

Participant responses suggest school officials and students may have opposing expectations of sex education. It is worth stressing, if schools do not incorporate student perspectives into sex education, students appear less likely to listen to instructors. This could result in students not obtaining and utilizing information that can help them make safe sexual decisions. Future research should explore more why CSE has performed better than AOUM curricula and how relevance strategies impact the effectiveness of sex education.

IMPLICATIONS FOR SCHOOL HEALTH

The findings of this research can help guide school policies that govern sex education. Given our research setting, the results of our study may be most beneficial to schools located in rural areas and communities with poor adolescent sexual health outcomes. Based on our outcomes, we recommend when developing, but before implementing school-based sex education, schools conduct a needs assessment to gather adolescent insights about their current sexual behaviors and attitudes. Utilizing data from state and local health organizations, surveys

such as the YRBS, and student focus groups, are practical ways schools can gather student perspectives to consider and incorporate in curriculum selection and development.

Human Subjects Approval Statement

All participants provided assent or consent and those under 18 obtained parental permission before completing study activities. School permission was obtained, and approval was granted from the academic Institutional Review Board.

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Appendix

Table 1. Focus Group Discussion Guide Questions

Do you think teens in your community are sexually active?
Why do you think people your age have sex? (Aquilino & Bragadottir, 2000)
Do you believe sexual health among your peers is a problem in your community? (Aquilino & Bragadottir, 2000)
What are your general thoughts about your sex education?
What do you like or dislike about your current curriculum? (Eisenberg et al., 1997)
Do you believe your sex education should be abstinence-only or safer sex? Explain?

Table 2. Focus Group Participants' Demographic

	Total number of participants *N*= 48	**Percentages**
Which sex education course taken		
Not taken one	2*	4.17%
In-class instruction	43	89.58%
Online	3	6.25%
Age		
14	0	0.00%
15	5	10.87%
16	7	15.21%
17	11	23.91%
18	19	41.30%
19 years old or older	2	4.35%
Did not answer	2	4.35%
Total	46	100%
Gender		
Male	17	36.96%
Female	26	56.52%
Transgender	0	0.00%
Prefer not to respond	2	4.35%
Did not respond	1	2.17%
Total	46	100%
Ethnicity		
Asian or Pacific Islander	1	2.17%
Black or African American	2	4.35%
Hispanic/Latino	5	10.87%
American Indian/Native American	1	2.17%
White/Caucasian	35	76.10%
Other	1	2.17%
Did not answer	1	2.17%
Total	46	100%

**participants were ineligible to participate in focus group*

Table 3. Survey Participants' Demographic

	Total number of participants *N*=91	**Percentages**
Age		
14	5	5.49%
15	10	10.99%
16	7	7.69%
17	21	23.08%
18 years old or older	48	52.75%
Gender		
Male	44	48.35%
Female	46	50.55%
Prefer not to answer	1	1.10%
Sexual Orientation		
Heterosexual	73	82.02%
Gay or lesbian	4	4.49%
Bisexual	9	10.11%
Not sure	3	3.37%
Ethnicity		
Asian	1	1.32%
Black or African American	4	5.26%
White	67	88.16%
Bi-racial (two races)	3	3.95%
Other	1	1.32%
Hispanic	15	16.48%
Taken sex education class		
Yes	78	85.71%
No	13	14.29%
Online	3	6.25%

Table 4. Survey Sexual Behaviors/Knowledge

	Total number of participants *N*= 91	Percentages
Has ever had sex		
Yes	47	52.81%
No	42	47.19%
Used a condom during last sexual intercourse		
Yes	25	53.19%
No	22	46.81%
Type of contraception used to prevent pregnancy during last intercourse		
No method was used	5	10.64%
Birth control pills	13	27.66%
Condoms	16	34.04%
An IUD (such as Mirena or ParaGard) or implant (such as Implanon or Nexplanon)	5	10.64%
A shot (such as Depo-Provera), patch (such as Ortho Evra), or birth control ring (such as a NuvaRing)	2	4.26%
Withdrawal or some other method	6	12.77%
Used alcohol or drugs before last sexual intercourse		
Yes	8	17.02%
No	39	82.98%
How old when first had sex		
13 years old	4	8.51%
14 years old	7	14.89%
15 years old	8	17.02%
16 years old	19	40.43%
17 years old	9	19.15%
Knowledgeable about how to prevent pregnancy		
Extremely knowledgeable	33	37.08%
Very knowledgeable	37	41.57%
Moderately knowledgeable	18	20.22%

Slightly knowledgeable	1	1.12%
Knowledgeable about how to prevent the transmission of HIV		
Extremely knowledgeable	29	32.58%
Very knowledgeable	27	30.34%
Moderately knowledgeable	26	29.21%
Slightly knowledgeable	5	5.62%
Not knowledgeable at all	2	2.25%
Knowledgeable about how to prevent transmission of STIs such as gonorrhea and chlamydia		
Extremely knowledgeable	26	29.21%
Very knowledgeable	20	22.47%
Moderately knowledgeable	31	34.83%
Slightly knowledgeable	11	12.36%
Not knowledgeable at all	1	1.12%