Exploring Multilevel Factors associated with Dual-Method Contraceptive use among Adolescent and Young Adult Women

by

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Nursing
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Defense Date: March 6, 2024

Approved:

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Jonas Swartz

Dissertation submitted in partial fulfillment of the requirements of the Doctor of Philosophy in Nursing in The Graduate School of Duke University

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ABSTRACT

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Abstract

Sexually transmitted infections (STIs) continue to rise in the US, and adolescent and young adult women (AYAW) between ages 18 and 24 have some of the highest STI rates in the country. Further, AYAW who use prescribed contraceptives (commonly referred to as birth control) are less likely to use condoms and more likely to be diagnosed with an STI than non-prescribed contraceptive users. The purpose of this dissertation is to understand multilevel factors contributing to condom use decision-making and STI risk perception analysis among AYAW who use prescribed contraceptives.

Data was using qualitative research methods in two separate studies. In one study, a grounded theory approach was used to explain the processes associated with STI risk perception and dual-method contraceptive decision-making. In a separate study, sex education policy experts in Texas were interviewed to identify barriers and facilitators to implementing comprehensive sex education at a local level. Additionally, legal and ethical issues in conducting sexual health research with AYAW were explored.

The findings suggest that dual-method contraceptive decision-making is a complex process that is influenced by individual, relationship, community, and societal factors. Instead of having conversations about STIs, AYAW are making assumptions about the STI status of their partners based on partner and relationship factors and are deferring to their partners for dual-method contraceptive decision-making. Additionally, societal, community, and relationship factors influence how AYAW perceive STIs in

comparison to pregnancy. To increase STI risk perception and dual-method contraceptive use a multilevel holistic approach is recommended.

Table of Contents

List of Tables

List of Figures

Acknowledgments

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Chapter 1. Introduction

While the unintended pregnancy rate has reached a historic low in the US,1 sexually transmitted infections (STIs) and HIV continue to persist among adolescent and young adult cisgender females (AYACF). AYACF between the ages of 18 and 24 account for 36% of chlamydia and 19% of gonorrhea cases in the US.2,3 AYACF also account for over 750 new HIV diagnoses.4 Further, STI and HIV rates persist in structurally oppressed racial and ethnic groups.5 For example, Black AYACF are at least seven times more likely to be diagnosed with gonorrhea, five times more likely to be diagnosed with chlamydia, and three times more likely to be diagnosed with HIV and syphilis than White AYACF.6-9 AYACF who are Hispanic, American Indian/Alaskan Native, or Native Hawaiian/ Other Pacific Islander AYACF, are also more likely to acquire an STI or HIV than their White counterparts. 6-9

The risk of acquiring an STI and HIV can be reduced through correct and consistent condom use during oral, vaginal, and anal sex.10 However, only 23% of AYACF use condoms during every sexual encounter. 11 AYACF who use prescribed contraceptives such as intrauterine devices (IUDs), birth control pills, hormonal implants, injections, patches, and rings are less likely to practice dual-method contraceptive use, 12,13 which occurs when a prescribed contraceptive and a condom are both used during intercourse. 14 AYACF are the largest consumers of prescribed contraceptives resulting in a dramatic decrease in unintended pregnancies. 15 Prescribed contraceptives consist of two categories: Short-acting reversible contraceptives (SARCs) and LARCs. 16 SARC's include oral contraceptive pills, vaginal rings, patches, and injections.16 Although

SARCs are 91-99% effective in pregnancy prevention, their effectiveness decreases if not taken correctly or consistently. 17 Due to the increased likelihood of user error, The American Congress of Obstetricians and Gynecologists and the American Academy of Pediatrics identify LARCs as the first-line contraceptive option for AYACF. 17-19 LARCs consist of intrauterine devices (IUDs) and implants and are 99% effective in pregnancy prevention for three to ten years. 18 Although LARCs and SARCs are highly effective in pregnancy prevention, they do not protect against STIs and HIV. 20

Increasing trends in STI rates and limited dual-method contraceptive use highlight the need to investigate attitudes and beliefs related to contraceptive use and STI and HIV risk perception. Risk perception analysis is an important factor in dual-method contraceptive decision-making as AYACF with a high STI and HIV risk perception are more likely to initiate dual-method contraceptive use than those who perceive themselves as low risk. [21-24] While risk perception analysis has been identified as an integral part of decision-making,[25] the processes associated with STI and HIV risk perception analysis and dual-method contraceptive decision-making are poorly understood.

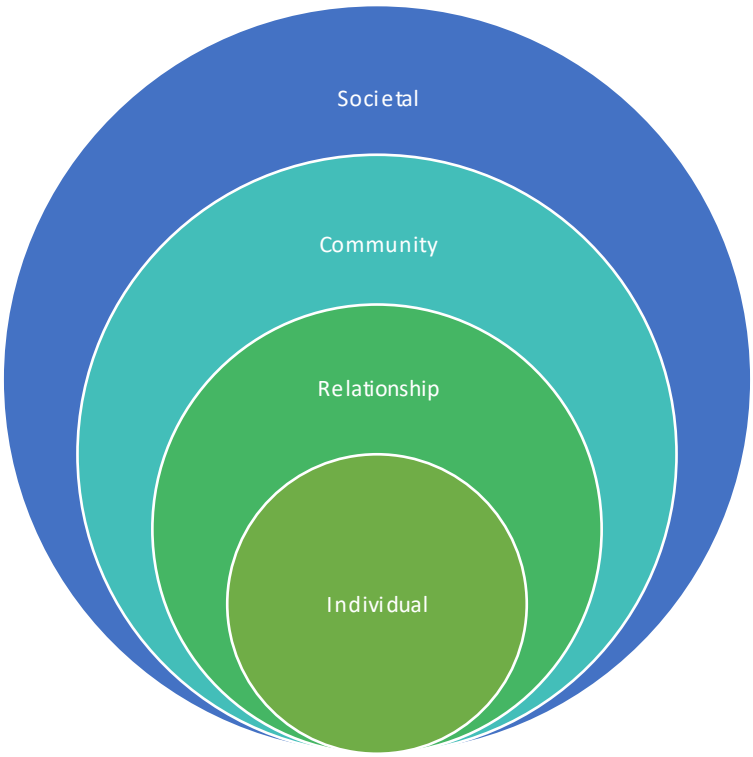

Figure 1. The Social-Ecological Model of Health

1.1 Theoretical Framework

1.1.1 The Social Ecological Model of Health

The guiding theoretical framework for this dissertation is the Centers for Disease Control and Prevention's (CDC) Social Ecological Model of Health (SEMOH) (Figure 1), a prevention framework derived from Bronfenbrenner's Ecological Systems Theory to examine how factors at the individual, relationship, community, and societal levels interact to affect health outcomes.26 The SEMOH consists of four principles: First, Individual and community health status, emotional well-being, and social cohesion are influenced by physical, social, and cultural environmental factors and personal characteristics. Second, the same environment can affect individuals differently due to a

variety of personal factors. Third, individuals and groups function in overlapping environments that influence one another. Fourth, there are personal and environmental factors such as physical environment and social norms that critically influence health.26,27 Further, the SEMOH aims to identify level-specific factors and interactions to develop interventions that work across multiple levels to change health behavior.26

1.1.1.1. Individual-level Factors

The individual level of the SEMOH consists of demographic factors and personal characteristics that influence health behavior and outcomes.[26] In the context of STI and HIV prevention, age is a factor in determining STI/HIV risk as AYACF are at greater risk for STIs due to biological factors that enhance susceptibility to bacterial and viral infections such as chlamydia, HPV, and HIV.[28,29] Additionally, individual-level factors such as having health insurance and higher socioeconomic status influence the likelihood of engaging in protective behaviors such as STI and HIV testing and preventative care.[30] Moreover, health insurance and education attainment play a role in determining condom use, as AYACF with health insurance and higher education attainment are more likely to use condoms than those without health insurance and lower education attainment.[31-33] Socioeconomic status is also associated with condom use as economically disadvantaged AYACF are more likely to engage in high-risk sexual behaviors such as transactional sex, and less likely to use condoms than those with higher socioeconomic status.[34-37]

In addition to demographic factors, personal characteristics such as condom self-efficacy and the use of prescribed contraceptives influence condom use.[23,33,38,39] For example, AYACF with higher levels of condom self-efficacy are more likely to use

condoms than those with lower self-efficacy levels.[40,41] Additionally, AYACF who use intrauterine devices and hormonal implants are less likely to use condoms than those who use hormonal pills, patches, or rings.[23,38,39]

1.1.1.2. Relationship-level Factors

Relationship-level factors consist of close relationships that may influence the health behavior and outcomes of an individual.[26] The interpersonal relationship between an AYACF and her partner plays a critical role in STI and HIV prevention. For example, AYACF with higher levels of partner trust and monogamy are less likely to use condoms than those who are in less trusting or committed relationships.[23] Moreover, AYACF in relationships with higher levels of conflict and physical intimate partner violence (IPV) are less likely to use condoms than those in relationships with lower levels of conflict.[42-44]

Frequent partner communication and emotional support are linked to condom use as AYACF who are in relationships with higher levels of partner communication and emotional support are more likely to use condoms than those in relationships with lower levels of partner communication and emotional support.[23,45,46] Further, partners of AYACF with high levels of condom self-efficacy and willingness to wear a condom are more likely to use condoms than those with low levels of condom self-efficacy and willingness levels.[13,47]

1.1.1.3. Community-level Factors

Community-level factors include social settings such as schools and neighborhoods, which influence overall health and behavior.[26] A person's neighborhood and built environment are determining factors of their health and well-being.[26] Since 1980, the number of neighborhoods that are considered disadvantaged, defined as neighborhoods with high rates of concentrated poverty, unemployment, crime, and minimal resources, has significantly increased in the U.S.[48] Frequently, people residing in disadvantaged neighborhoods belong to structurally oppressed racial and ethnic groups as a result of historical and contemporary segregation. [48,49]

Neighborhood disadvantage, defined as neighborhoods with high levels of poverty, unemployment, crime, and structural damage, is a determinant of health inequities and is associated with increased STI and HIV risk.[50] For example, previous studies have reported a positive association between levels of concentrated poverty and engagement in high-risk sexual behaviors such as unprotected sex and STIs.[51,52] Increased duration of exposure to disadvantaged neighborhoods is associated with a lower age of sexual debut and more sexual partners among adolescents.[53]

Neighborhoods with high levels of concentrated poverty, incarceration rates, and deterioration were associated with decreased condom use and increased STI/HIV rates.[51,52,54,55] For example, among African American adolescent females, neighborhood disadvantage is associated with decreased condom use.[56] Additionally, adolescents who perceived their neighborhood's social cohesion as low were less likely to use condoms than those who viewed their neighborhoods as more socially cohesive.[57]

1.1.1.4. Societal-level Factors

Healthcare access and sex education policy play a significant role in STI/HIV risk and prevention. In 2020, 8.5 million women were uninsured, and 1 in 9 were of childbearing age.[58] Further, the vast majority of those who were uninsured belonged to structurally oppressed racial and ethnic groups.[59] Inequities related to healthcare access and quality are concerning, as decreased healthcare access increases STI and HIV risk as AYACF without health insurance are less likely to access STI and HIV preventative care, testing, and treatment than those with health insurance.[60] Additionally, adolescents and young adults are more likely to face barriers to accessing sexual and reproductive healthcare than other age groups due to increased confidentiality concerns, limited economic resources, and lack of transportation.[61] Quality of healthcare is also a concern as fear of provider discrimination can delay individuals belonging to structurally oppressed racial and ethnic groups from seeking care.[62]

Societal-level factors such as sex education policies play an integral role in STI and HIV prevention among AYACF. While the World Health Organization (WHO) recommends teaching a high-quality, scientifically based, comprehensive sex education program, [63] only 18 states require sex education content to be medically accurate. [64] Further, only 38 states require sex education to be taught in public schools, with 27 states requiring HIV education to be included in sex education curricula.[64] Additionally, only 20 states mandate the provision of contraceptive information in their sex education programs.[64]

The majority of public schools provide a sex education that meets minimum federal standards as only 52% of U.S. youth receive education about where to access contraception, and 59% are educated on condom application.[65] Comprehensive sex education (CSE) programs teach youth medically accurate information related to STIs, HIV, pregnancy, condoms, prescribed contraceptive resources, and sexual decision-making skills. Although CSE programs are effective in decreasing STIs and HIV, they are minimally implemented across the United States.[66-70] Due to the lack of contraception education provided to youth who attend public schools, it is imperative to acknowledge the role sex education policies play in STI/HIV prevention.

1.2 Purpose Statement and Research Aims

HealthyPeople 2030 identifies the promotion of dual-method contraceptive use as a target goal, while the Centers for Disease Control and Prevention (CDC) have highlighted STI risk and promoting STI-related health as key priorities.[71,72] The overall objective of this dissertation is to understand multilevel factors associated with dual-method contraceptive decision-making among AYACF who are using prescribed contraceptives. The specific aims of this study are:

Aim 1 (Chapter 1): To discuss STI/HIV prevalence and prevention among AYACF in the context of the Social Ecological Model of Health;

Aim 2 (Chapter 2): To identify barriers and facilitators to implementing comprehensive sex education in Texas public schools;

Aim 2 (Chapter 3): To explore legal and ethical issues in conducting sexual health research with AYACF;

Aim 3 (Chapter 4): To develop a conceptual model explaining the processes associated with risk perception analysis and decision-making related to dual-method contraceptive use among sexually active AYACF using prescribed contraceptives;

Aim 5 (Chapter 5): To synthesize and propose future directions for nursing research, practice, and policy.

Chapter 2. Barriers and Facilitators to Implementing Comprehensive Sex Education in Texas Public Schools: A Qualitative Study

2.1. Introduction

Sexual health education provides young people with the knowledge and skills needed to make informed sexual health decisions to prevent sexually transmitted infections (STIs), including HIV, and unwanted pregnancy. In Texas, the adolescent birth rate is 43% higher than the national average, and Texas ranks first in repeat births among adolescents at 18%. [73,74] Meanwhile, chlamydia and gonorrhea rates have increased by 25% and HIV rates by 4% over the last decade among adolescents and young adults between 15 and 24 years. [64,75]

Currently, Texas is one of 22 states that do not mandate sexual health education and one of 33 states that do not require the provided sex education to be medically accurate.[64] Further, if a Texas public school chooses to provide sex education to students, the curriculum must emphasize abstinence.[76] Although abstinence is the most effective way to prevent pregnancy and STIs, nearly 43% of Texas high school students have engaged in sexual activity at least once, and 23% are currently sexually active. [77,78] Further, among sexually active students, 50% report not using a condom the last time they had sex, and 20% report not using any pregnancy prevention method. [78] The lack of contraception use among Texas youth combined with elevated STI and unwanted pregnancy rates highlights the need to consider effective sexual health promotion strategies.

National and global health organizations widely endorse comprehensive sexuality education (CSE) programs, and research has shown that they are more effective in

reducing poor sexual health outcomes than abstinence-based programs. [63,79-81] CSE is a medically accurate curriculum that provides age-appropriate information related to the physical, mental, emotional, and social dimensions of human sexuality. [82] CSE is taught from early elementary through high school and consists of six key topics: 1) consent and healthy relationships, 2) anatomy and physiology, 3) puberty and adolescent development, 4) gender identity and expression, 5) sexual orientation and identity, 6) sexual health, and interpersonal violence. [83] Compared to abstinence-based programs, CSE is more effective in delaying sexual debut, increasing the use of contraception, and reducing STI and HIV and adolescent pregnancy rates. [79-81,84,85] Additionally, CSE has been shown to reduce domestic and intimate partner violence, child sexual abuse, homophobia, and homophobic bullying. [86]

Although the effectiveness of CSE over abstinence-based programs is well-supported, most Texas schools provide abstinence-based education.[76] To understand where and how Texas sex education policy can be improved, it is essential to learn the current policies and standards and the governing bodies that decide them.

2.1.1. State Legislature

The state legislature plays a decisive role in sex education policy by passing laws related to sex education, included in The Texas Education Code.[87] The Texas State Board of Education (SBOE) must adhere to all state laws when deciding the standards of Texas Essential Knowledge and Skills (TEKS). According to the Texas Education Code, all sex education curricula must "present abstinence from sexual activity as the preferred choice of behavior in relationship to all sexual activity for unmarried persons of school age" and "devote more attention to abstinence from sexual activity than to any other behavior.[88] Moreover, Texas schools must teach condom effectiveness from the perspective of "human use reality rates" as opposed to "theoretical laboratory rates", [88] meaning the condom failure rate provided by schools reflects incorrect or inconsistent condom use, leading students to believe condoms are less effective than they are when used correctly or consistently.

The Texas Education Code also defines the process schools must abide by when selecting sex education curricula and proposing curriculum changes. Before November 2020, all students were automatically enrolled in sex education unless their parents signed a permission slip prohibiting their child from attending. [89] In November 2020, Texas became one of five states (North Dakota, Oklahoma, Minnesota, and Utah) to enforce a new policy requiring parents to sign a permission slip opting their child into receiving sex education at school. [76,88] Additionally, the state legislature voted to implement new policies related to Student Health Advisory Committees (SHACs).[88] SHACs play an integral role in sex education as they can work with community members

to ensure that the sex education provided represents the values of the community. Every school district must have a SHAC primarily consisting of parents not employed by the school district and who meet at least four times per academic year.[88]

2.1.2. State Board of Education

The role of the SBOE is to select course materials and set health curriculum standards, the TEKS.[90] According to the TEKS, all Texas public schools must, at minimum, provide a health education course, which includes a chapter dedicated to abstinence-based sexual health information, to elementary (4^{th}-5^{th} grade) and middle school students (7^{th}-8^{th} grade).[91] The health course is optional for high school students and does not have to be offered by public high schools. [91] In November 2020, the SBOE revised TEKS standards for the first time in over 20 years, adding topics such as contraception, sexually transmitted infections (STIs), and characteristics of healthy relationships for middle school students.[91] Conversely, the SBOE voted against requiring schools to discuss topics such as consent and human sexuality. [92]

2.1.3. The Current Study

Sex education is instrumental in providing adolescents and young adults with the knowledge and skills to engage in healthy sexual decision-making and relationships. High unintended pregnancy and STI/HIV rates among Texas youth highlight the need to examine current sex education policy and curriculum standards and emphasize sexual health prevention. CSE reduces STI/HIV and pregnancy rates among adolescents when compared to abstinence-based sex education.[81] Thus, this study aimed to identify barriers and facilitators to implementing CSE at local and state levels in Texas.

2.2. Methods

2.2.1. Study Design

This study used a qualitative design to explore barriers and facilitators to implementing CSE policy and curriculum at local and state levels in Texas. A qualitative approach was suitable for this study as it allowed us to explore stakeholders' beliefs and views about barriers to policy implementation in Texas.[93,94] Qualitative designs are effective, argues Sofaer [95], "illuminating the experience and interpretation of events by actors with widely differing stakes and roles" (p.1101). There has been little research to date that explored the implementation of CSE policy and curriculum in Texas, and we hoped our study would help to close this gap.

2.2.2. Participants

This study consisted of ten interviews with eleven key informants working or had previously worked in sex education **(Table 1).** Two key informants were interviewed together for one interview, while the other nine interviews had one key informant. Through e-mail and snowball sampling, we recruited vital informants who were involved in sex education policy and research or had contributed to developing or implementing various forms of sex education curricula to gain a comprehensive understanding of existing barriers and facilitators to facilitating policy or curriculum change at local and state levels. Additionally, key informants represented various regions, counties, and school districts in Texas.

Table 1. Key Informants

Key Informant Number	Profession
1	Assistant professor and sexuality education researcher
2	Assistant professor and health communication researcher
3	Policy director for a statewide nonpartisan organization
4	Physician (obstetrician/gynecologist) and associate professor
5	Medical school director of community education
6	Policy director
7	Health and physical education supervisor
8	Communications strategist
9	Professor and researcher on the prevention of pregnancy and STIs
10	Policy director and professor
11	Professor and school and community-based health researcher

2.2.3. Data Collection

Semi-structured interviews ranging from 32 to 64 minutes (with an average of 45 minutes) were conducted. A semi-structured interview format was appropriate for this

study as it facilitated data collection while allowing participants to freely discuss thoughts or ideas that the research team might not have considered.[96] Interview questions were drafted by the research team, which specialized in policy and/or sexual and reproductive health, to ensure content validity. Further, participant input contributed to developing additional questions in future interviews. Key questions that guided the qualitative interviews are presented in **Table 2.**

Table 2. Sex Education Interview Guide

1. Tell me about your experience of getting (or trying to get) comprehensive sex education on the policy agenda.
2. What are the biggest barriers that comprehensive sex education faces in moving forward?
    - Probe: How can these barriers be overcome?
    - Probe: Are there any upcoming windows of opportunity for prioritization
3. What has helped move comprehensive sex education up the policy agenda?
4. What do you think the impact of implementing comprehensive sex education would be on your city or state?
5. What role, if any, could you or your organization play in facilitating comprehensive sex education's prioritization on the state policy agenda?
6. Can you identify any leaders or champions of comprehensive sex education? If so, who?

2.2.4. Study Procedures

Initially, this study used purposive sampling to select participants based on the literature on CSE and personal knowledge of key actors in sex education policy. Purposive sampling was then supplemented by snowball sampling, as initially selected participants were asked to provide referrals for additional potential participants. All selected participants were recruited via email and were provided information regarding the study. Once participants agreed to the interview, they were provided with a written consent form to be signed before the interview. Ten one-time, semi-structured interviews were conducted with eleven participants via Zoom after obtaining informed consent. All ten interviews were conducted by one research team member (L.H.), who completed training in qualitative research methods. To provide context for data analysis, field notes were written immediately after each interview to capture the interviewer's thoughts, feelings, and perceptions. To ensure confirmability, reflexive journaling was conducted after each interview to capture thoughts and perceptions and identify any potential biases.

2.2.5. Data Analysis

All interviews were audio recorded and transcribed verbatim by the interviewer (L.H.) and then independently coded using NVivo 12 software [97] by two coders (L.H., S.J.).Thematic analysis was used to identify barriers and facilitators to implementing comprehensive sex education. Each coder familiarized themselves with the data before identifying emerging themes to develop a codebook to guide the data analysis process. To ensure credibility, triangulation was used by comparing findings after each interview to data sources pertaining to Texas sex education policy and the Future of Education's

National Sexuality Education Standards to assess the need to develop new interview questions.[83,90] Each coder independently analyzed the data, and the two coders met intermittently throughout the coding process to discuss emerging themes, resolve discrepancies, and further develop the codebook. As the number of interviews increased, the codebook evolved to include codes pertaining to different methods of community pushback and various CSE champions (i.e., students, SHAC members, healthcare professionals). After coding the first three interviews independently, the coders met to discuss emerging themes, and continued to meet throughout the coding process for confirmability. Once all interviews were coded, data from each coder was merged into one file to identify major themes and subthemes.

2.2.6 Researcher Characteristics and Reflexivity

It is essential to acknowledge the research team members' relationship to sex education policy. One research team member (L.H.) is a PhD student at Duke, where she focuses on sexual health decision-making among adolescents and young adult women. She experienced sex education in a rural public school in Texas, inspiring the development of this study. Another member (S.J.) is also a PhD student at Duke, where she focuses on sexual health inequities and discrimination. She is an HIV/AIDS certified registered nurse and has experienced sex education at a small Catholic school in the Midwest. One member of the research team (G.Y.) is a physician who has conducted policy research on global reproductive health and written articles that advocated for CSE; he also used to write a weekly sexual health advice column for men who have sex with men in a young gay men's magazine in London, England.

2.3 Results

2.3.1. Barriers

We identified three key barriers to implementing CSE curricula and policy: 1) ideological opposition to CSE, 2) discrimination against lesbian, gay, bisexual, transgender, queer + (LGBTQ+) people, and 3) myths and misconceptions about CSE.

2.3.1.1. Ideological Opposition to CSE

Ideological opposition to CSE was a significant barrier to implementing CSE at the local and state levels. Several participants stated that opposition from parents and advocacy groups was particularly problematic for school officials and policymakers. Two key informants (KIs) provided further insight into the conflict and difficulties faced by those who advocate for students to have an informative and inclusive sex education:

"*And they [opponents] can make life hell for school officials, either an elected board member or an employee, like a district superintendent. They just get targeted by opponents who then misinterpret and misportray what is taught in the classroom and try and scare people about what sex ed is being taught in their local school. And I think policymakers just don't want the heartburn. And so, they, in many cases, end up not teaching sex ed at all because they just don't have to abide by state law. So, the easy thing to do is just not to teach it at all.*" - K.I. 8

"*But we've had pushback, and we had actual, like protests and picketing of trainings, and school boards sort of boycotting, and people from outside the district attending school district meetings, to say that comprehensive sex ed was not age-*

appropriate, that it was pornographic. That it's not, you know, in the best interest of youth, and it's not what school districts should be doing." – K.I. 9

Specifically, informants reported that resistance from parents was the most challenging barrier for school administrators. One interviewee (K.I. 4), a physician and associate professor who works closely with school administrators, stated, "*But also to administrators, they're not so much afraid of the subject as they are parents*" and continued to cite a conversation they had with a school administrator who reportedly told her, "*I don't want any more headaches. I don't want to have parents calling me*". A different K.I. said one reason for parental pushback is the belief that sex education should remain in the home:

"*The biggest barriers we saw, and we address this firsthand, were protests from others that don't feel that way. They feel that sex ed is hurting young people and, that sexual health and sexual health discussion should be in the family, that families should be the primary sexual health educators for their youth. That negates the fact that a lot of kids don't feel comfortable talking with their parents about these things, and sexual, gender and minority youth may not feel comfortable talking with their parents about these kinds of topics*." - KI 9

2.3.1.2. Discrimination against LGBTQ+ People

Implementing an LGBTQ+ inclusive sex education curriculum in public schools is a contentious subject in Texas, particularly among parents, advocacy groups, and the state legislature. For example, K.I. 3 said: *"And most of what they were opposing was the LGBTQ issue. That's what kind of became the big flashpoint. It's almost like*

contraception is maybe, like, in the background a little bit now. And now the big thing is, like, gender identity."

Although very few Texas youth receive sex education that covers LGBTQ+ sexual health topics or issues, two informants reported that students continued to ask questions about LGBTQ+ sexual health and relationships in class:

"*The kids will talk about different kinds of relationships that are not represented in textbooks, and they're seeing it on T.V., they see it on their phones, they see it on this, and it's just ignored and overlooked in the educational realm."* - KI 11

"The school board doesn't want us broaching the subject of homosexuality and, you know…all the letters, but the kids keep bringing it up to us. So, we keep telling them and SHAC [School Health Advisory Committee] every year, 'The kids are asking us, we need to be talking about this.' And so far, they've kind of ignored us, but they won't be able to ignore us much longer." - K.I. 4

Further, K.I. 4 stressed that providing LGBTQ+ inclusive sex education is essential because LGBTQ+ students are not provided with sexual health information that could reduce their risk of STIs. She provided an example from her own experience as a sex education provider, *"… I was teaching STDs [sexually transmitted diseases], and one girl said, 'Well, that's okay. I can't get them because I'm gay.' And I said, 'No, if your partner's infected, you can get them.'"*

Our study found that misconceptions about LGBTQ+ inclusive curriculum perpetuate discrimination against LGBTQ+ individuals. Informants reported that opponents of CSE will often falsify and sensationalize the LGBTQ+ sexual health

information that would be provided to students in the classroom. KI 7, a textbook manufacturer, stated, *"... the way that they have opponents attack is they have to misportray what's being taught in the classroom… that we're indoctrinating students into the 'homosexual lifestyle,' and we are confusing kids about gender."* The same participant further elaborated on the misconceptions and general lack of understanding that elected officials have regarding the realities and hardship faced by LGBTQ+ youth:

"...when proponents of that [comprehensive sex education] made the argument that teaching this kind of information helps lessen bullying, harassment, and suicidal ideation among LGBTQ youth, the board member who thought it was too controversial actually questioned whether or not it was true that teaching this information would help prevent suicide among LGBTQ youth. Well, I'm gay. And let me tell you, it would. I mean, this is not something to be debated. And we know that this is the case." -K.I. 7

2.3.1.3. Myths and Misconceptions about CSE

Findings from our study showed that the sex education landscape is riddled with myths and misconceptions that prevent the implementation of a sex education curriculum that is medically accurate, informative, and inclusive. One misconception, in particular, is that CSE encourages sexual activity among youth. K.I. 2 stated, *"If you do these things to make kids healthier, parents perceive, and the community perceives that it's a free pass to have sex, which is obviously not the case."* Similarly, K.I. 3 argued, *"I think that there is a, you know, persistent belief that providing sex education to kids sends them the message that it's okay to have premarital sex and will somehow make them more likely to have*

premarital sex. And the research tells us that that's not true. But that's the persistent belief. We see this in contraceptive access, too."

The fear that sex education promotes sexual activity extends to the topic of consent, which is not included in the state-required health education course. Three study participants discussed why CSE opponents and a member of the SBOE did not want the topic of consent included in the sex education curriculum:

"And so for them [CSE opponents] teaching about consent apparently was like opening the door to sexual consent, it's like really can go a complete misinterpretation of what people mean when they're talking about affirmative and informed consent. But the board refused to adopt any standard that focused on affirmative and informed consent, largely for that reason."- K.I. 8

"And so, one of the members said, he came out in the middle of the meeting, and he said that consent was a tool that pedophiles and sex traffickers used to trick kids. And like, that was the moment where, like, my jaw hit the floor." – K.I. 3

"We had some concerns from one of the members of the board that teaching kids about consent encourages them to have sex when that is, you know, contrary to literally all research on the subject. And they pushed back really seriously. And we brought in like some human trafficking experts and those kinds of folks because speaking about human trafficking tends to be a really robust conservative talking point in Texas. If you can get people to see it through a trafficking lens, they tend to be a little bit more amenable to moving on an issue. And that didn't work". – K.I. 6

Ultimately, the SBOE voted to exclude consent from the state-required health education curriculum. As an alternative, the SBOE shifted its focus to *"respecting the boundaries of other people"* (K.I. 3) because the SBOE *"felt much safer with the word 'boundaries' than the word consent"* (K.I. 5). K.I. 3 provided further insight into the shift from the word "consent" to "boundaries":

"*So the old TEKS were like refusal, refusal, refusal, you have to refuse sex, just say no. And the new TEKS, at least, are like, if somebody else says no, you have to respect that… It's kind of like halfway to consent, right?"* – K.I. 3

2.3.2. Facilitators

We identified two critical facilitators to creating policy and curriculum change: 1) sex education champions and 2) collaboration with community stakeholders.

2.3.2.1. Champions

All research participants emphasized the importance of having "champions" who advocate expanding sex education curriculum and policy to be more medically accurate, informative, and inclusive at local and state levels. In particular, support from healthcare professionals, parents, and youth was identified as essential to initiating sex education policy and curriculum change. For example, K.I. 4 shared how healthcare professionals played a role in making sex education curriculum medically accurate and more informative:

"But there was a lot of misinformation. And they were several health professionals on the Student Health Advisory Committee that visited those classes. And some of them were really angry there. Some of them were really angry. But mostly, they

just wanted things to be more scientifically correct. And so they asked us to find a curriculum. And then, they asked us to teach parts of that curriculum. They wanted anatomy and physiology, physiology of reproduction. They wanted contraception plus abstinence, and they wanted STI prevention and treatment." – K.I. 4

Two other participants discussed the importance of having healthcare professionals champion the expansion of the sex education curriculum. K.I. 6 stated, *"But in addition to that, I would like to have folks hear from medical practitioners a little bit more. I think that our family planning doctors and our pediatricians are the people who see the fallout of inaccurate sexual health teaching in our schools. And I think physicians also tend to be trusted voices in our communities. So, I think that kind of effort is important".* Similarly, K.I. 11 stated, "*I think that helps to have physicians on board saying this is important*."

Additionally, parents and youth play a critical role in advocating for CSE:

"if you want to make a change in your district, you need to get parents and community members on that SHAC that are supportive of sexual health and comprehensive sex ed…" They continued, *"...and you would want to make sure we always made sure that you had students and parents that were in favor of the particular program, whether that's the evidence-based program or this comprehensive program that you're trying to get approved, and make sure that you have students from the district and parents from the district to stand up at the school board and say why this program is important, why it's age-appropriate, that students like it, that it has good outcomes."* – K.I.9

In recent years, youth have also been using their voice to advocate for more informative and inclusive sex education curriculum by testifying in front of the SBOE:

"There was not a single young person who showed up to testify at the State Board of Education who was not speaking up in favor of sex education, consent, inclusivity. Every single one of them showed up and knew exactly what they wanted in their education." – K.I. 3

"And it's just like, hours and hours, and hours of like smart, powerful young people being like, "I was literally taught nothing about my body, like, fuck you." – K.I. 5

2.3.2.2. Collaboration with Community Stakeholders

Key informants emphasized the importance of collaborating with community stakeholders when facilitating conversations about curriculum with opponents of CSE. While a CSE curriculum that meets all twelve National Sexuality Education guidelines is ideal, it is not always possible to convince everyone to agree on every guideline. Thus, to move towards a medically accurate, informative, and inclusive sex education curriculum, collaboration is essential. For example, K.I. 7 said it is crucial to *"find that balance that everybody feels heard and respected*." Two other K.I.s echoed the importance of striking a balance and collaborating with community stakeholders:

"But, like, really getting buy-in from the community, from the parents, from the medical from the youth-serving professionals. And I think Austin ISD [Independent School District] did a good job of that. They did a lot more community outreach than they were remotely required to do by statute. They put out surveys of parents, they had a number of public hearings, a lot of opportunities for public comment, you know, they

really tried to open up the process. As a people opposed to it would always, you know, if the process appears closed at all, people that are opposed to what you're doing will use that and make hay out of it." – K.I. 4

"But you have to get the individuals to adopt the practice and understand the importance of the practice. So if you and you, you have to get people that are like-minded to adopt the practice. So, the preacher of that church needs to understand that sex education in schools has these benefits. It doesn't encourage sex; it actually discourages early sex, it encourages safe sex practices, it decreases STI rates, it decreases teen pregnancy…" – K.I. 2

Specifically, K.I.s 4 and 5, who work together, were successful in working closely with a local faith-based organization to implement a more informative sex education curriculum in their local school district. Curriculum topics were divided between a university medical school and a faith-based group. The medical school focused on science-based topics such as anatomy, contraception, and STIs, while the faith-based group focused on emotions and engaging in healthy relationships:

"And so the superintendent said, you know, 'we're just not serving the kids; we'd love for them all to be abstinent, but if they aren't, then we need to find a way to incorporate something for everybody.' So, I knew we were probably going to have a bit of a fight on our hands because the faith-based group was coming to the meeting as well. So, I came up with this plan where we could share the instruction." – K.I. 5

"You know, there were some hiccups, but the people who were in charge of education at the faith-based group were lovely people, and we really worked well with

them. And they did have an abstinence-only agenda. But they respected the fact that, you know, we were trying to bring this the science component that the community asked for." – K.I. 4

They further discussed the importance and value of compromise:

"...we spend a lot of time nurturing our relationship with the faith-based [organizations]. It could have been a bigger fight. And we chose not to fight. We chose to get along, and we got an award for community involvement. And the three organizations-ourselves, the faith-based, and the school system-got an award because we were working so well together." – K.I. 4

2.4. Discussion

This study adds to the current body of knowledge of CSE and Texas sex education policy by providing insight into barriers and facilitators to changing sex education policy and curriculum in Texas to be more inclusive, informative, and comprehensive. Our study identified three main barriers to policy change: ideological opposition to CSE, discrimination against LGBTQ+ people, and myths and misconceptions about CSE. The study also identified two key facilitators – sex education champions and collaborations with community stakeholders.

The findings from our study were similar to the few other studies that have specifically examined sex education in Texas. [98] [99] One significant finding from our study was the fear of parental backlash faced by school administrators who wish to improve the sex education curriculum in their schools. A similar observation was made in a study examining barriers faced by instructors in delivering sex education in West

Texas. [98] Such findings highlight the importance of working closely with parents and other community stakeholders to ensure their voices are heard throughout the developmental and implementation process.

Our study found that there are pervasive myths and misconceptions about sex education that fuel resistance to change. Similarly, a 2012 study examining sex education materials from 990 Texas school districts found that myths and misconceptions about the consequences of sexual activity were common in curricular materials. [99] In particular, the materials commonly used shame-based and scare tactics, which the researchers categorized into three types: "1) exaggerating negative consequences of sexual behavior; 2) demonizing sexually active youth; and 3) cultivating shame and guilt to discourage sexual activity" [99]. These findings show how sexual health misinformation in curricular materials is not a new phenomenon and serves as a significant barrier to improving sex education curricula. To dispel myths and break long-standing sexual health misconceptions, public schools need to provide students with medically accurate and informative sex education and for sex education advocates to engage with community stakeholders.

2.4.1 Strengths and Limitations

One strength of this study is the professional diversity of the key informants who work in various fields related to sex education. By interviewing various experts, we were able to develop a more complete picture of the current state of sex education in Texas and of how policy change can occur. Another strength is the use of a semi-structured interview format, which allowed participants to share facts, personal experiences, and

opinions on Texas's sex education policy while still answering interview questions developed to answer this study's research question.

Along with its strengths, this study has limitations. First, the study sample mainly included viewpoints and insights from individuals who support implementing medically accurate, informative, and primarily comprehensive sex education. It did not include perspectives of those who are against changing the current school-based sex education curriculum or policy. Second, while we interviewed individuals who work with parents and students who advocate for sex education policy and curriculum change, we did not speak directly to the parents and students themselves. Although the research team reached out to parents of Texas public school students for an interview, none responded to the study email. Third, CSE opponents were not interviewed for this study as the research team felt it was important to focus on the experiences of individuals who are trying to expand sex education in Texas. However, hearing directly from CSE opponents could provide a deeper insight into their reasoning for objecting to the implementation of CSE in public schools, and lead to the development of a sex education curriculum that fulfills unmet objectives of both parties. Future research should focus on interviewing parents, students, and CSE opponents to gain an understanding of community values an how to work together to provide students with an informative sex education that gives them the knowledge and tools needed to protect themselves from unplanned pregnancy, STIs, and HIV.

2.4.2 Policy Implications

Findings from this study provide insight into the opposition faced by sex education advocates, which often stems from myths and misperceptions of CSE content and the stigmatization of sexual and gender-minoritized groups. Parents, youth, medical professionals, and academic researchers who support CSE are essential to dispelling sex education myths and misperceptions and can move CSE up local and state policy agendas by advocating to their local school board and state officials. Further, our findings highlight the importance of developing relationships and working closely with community stakeholders to gain a better understanding of overall community values. Working closely and compassionately with community stakeholders can increase local support for schools to implement a sex education curriculum that is more informative, accurate, and comprehensive than previously implemented curricula.

Healthcare professionals and academic researchers are respected community members who can provide their medical knowledge, research, and work experience to dispel sex education myths, correct misunderstandings, and address the concerns of sex education opponents. This study serves as a call to action for medical professionals and academic researchers to advocate for a medically accurate and more comprehensive school sex. Healthcare professionals and academic researchers can provide insight into important topics such as consent and LGBTQ+ sexual health to help reduce sexual assault, social stigma, mental health outcomes, and sexual health disparities.

2.4.3 Conclusion

While there are several obstacles to implementing CSE in Texas schools, measures can be taken to gradually expand sex education curricula and policy to be more informative, inclusive, and effective. CSE advocates play a critical role in eliminating barriers by engaging with community stakeholders and getting involved with their local SHACs. Additionally, medical professionals and academic researchers who support CSE could play a key role in dispelling sex education myths and misconceptions. As Texas adolescents continue to be plagued by STIs, HIV, and unwanted pregnancy, it is important to shine light on current sex education practices, identify areas for improvement, and implement changes to policy that benefit the health and well-being of Texas youth.

Chapter 3. Legal and Ethical Issues in Conducting Sexual Health Research with Adolescent and Young Adult Women

3.1. Introduction

Ensuring and maintaining confidentiality for study participants is essential to conducting ethical research.[100] However, unique situations can arise when researchers are morally and legally obligated to breach participant confidentiality and report to legal authorities. For researchers who study sexual health in women, the risk of being in such a situation is high, as one in three women has experienced sexual violence,[101] and women are more likely than their male counterparts to be victims of crimes such as sexual abuse, sexual assault, statutory rape.[102,103] Among women of all age groups, adolescent and young adult women (AYAW) ages 18-24 years are at especially high risk of being victims of a sex crime[104]. AYAW college students are three times more likely to experience sexual violence and female non-college AYAW are four times more likely.[104] Further, only 20% of AYAW college students and 32% of non-college AYAW will report their sexual assault.[104] Despite the high prevalence of sex crimes committed against AYAW, there is limited information on the abuse reporting protocols for researchers who study sexual health in AYAW.

According to the Declaration of Helsinki, a guiding statement that ensures the protection of human subjects throughout the research process, all researchers who work with human subjects must submit a research protocol for approval by a research ethics committee before the implementation of the study.[105] An essential component of the research protocol is a plan of action specifically explaining what measures will be taken if a participant reports abuse or the researcher suspects abuse. [106] Abuse reporting

protocols for researchers working with "risk-sensitive" or "dependent" populations such as children, elderly individuals, and intellectually disabled adults are commonly available. [107-109] However, the abuse reporting guidelines for researchers working with adult populations between 18 and 64 years of age who do not fit into such categories are less common. The lack of clear abuse reporting guidelines is particularly problematic for researchers who work with AYAW and researchers conducting sexual health research, a population that experiences high rates of sexual assault. [104] More information is needed to understand the ethical and legal issues that could arise from conducting research with AYAW, particularly sexual and reproductive health research, and the process for reporting these issues.

For researchers who work with AYAW and focus on sexual health, there is potential for a participant to unintentionally or intentionally report being the victim of sexual assault, rape, statutory rape, or sexual abuse as a minor. In the instance that a participant is the victim of one or more of these crimes, the researcher needs to consider state laws. For example, sexual consent, [110] the age at which an individual can legally consent to engage in consensual sex, varies state-by-state and ranges from 16 to 18 years of age. [111] Further, researchers must consider if the state where the crime was committed has close-in-age exemptions, also known as Romeo and Juliet Laws, which allow a minor to have consensual sex with an older partner as long as the age difference between both parties falls within a specific parameter. [112] Close-in-age exemptions exist in 26 states with partner age differentials ranging from 2 to 10 years, [113] meaning that in one state (i.e. Alabama) a 16-year-old can legally have consensual sex with an 18-year-old, while

in a separate state (i.e. Utah), a 14-year-old can legally engage in consensual sex with a 24-year-old. [113] Additionally, each state has its statutes of limitations, which is a time limit on when a victim can file a civil lawsuit against their perpetrator(s). [114] Like close-in-age exemption exemptions, statutes of limitations vary by state and the type of crime committed [114].

3.1.1. Abortion

AYAW account for over 28% of elective reported abortions nationwide [115]. Since June 2022, elective abortion has become illegal after six weeks of gestation in over a dozen states (Alabama, Arkansas, Idaho, Indiana, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, South Dakota, Tennessee, Texas, West Virginia), and abortion laws are becoming more complex, affecting not only the women obtaining an abortion but those who assist them[116-118]. For example, in Texas, abortion is illegal and anyone who hands a woman an abortion pill or drives a woman to get an abortion can be sued by civilians[119]. In Idaho, abortion is illegal for women who are more than six weeks pregnant [120].

For researchers conducting sexual health research with AYAW, there is potential for a participant to divulge that she recently obtained an illegal abortion or illegally assisted someone in obtaining an illegal abortion. As abortion laws continue to change, it is important for researchers to consider two issues. First, the researcher needs to full be versed on what the state laws are regarding abortion – timing, under what circumstances it is allowed. Second, it is also important for the researcher to understand their legal and ethical obligation to report illegal abortion activity such as helping someone obtain the

morning after pill from a mail-order pharmaceutical company or another country and helping someone locate an abortion provider and helping them to get there.

3.1.2. Study Purpose

Abuse reporting protocols provide researchers a systematic reporting process that serves to protect the health, well-being, and safety of study participants[121]. For researchers who work with AYAW and focus on sexual health, there is no publicly available protocol if their participant, unintentionally or intentionally, reports being the victim of sexual assault, statutory rape, or sexual abuse as a minor. Effective abuse reporting protocols can help researchers fulfill their legal and ethical obligations to AYAW study participants. Additionally, as abortion laws continue to become more restrictive and complex, there is a need for researchers to understand what these laws mean for them and their participants. Thus, the purpose of this study is to 1) identify legal and ethical issues specific to conducting sexual health research with AYAW, and 2) provide clarity on abuse reporting procedures under the parameters of The Declaration of Helsinki.

3.2. Case Studies

Three exemplar case studies are provided to determine the most appropriate pathways for reporting abuse or suspected abuse of an AYAW study participant. All case studies include an AYAW research participant who intentionally or unintentionally discloses being a victim of sexual assault, sexual abuse as a minor, or statutory rape. While all case studies are fictional, there are components inspired by true events. To

ensure the abuse reporting pathways are accurate, members of the Duke University Office of Legal Counsel and IRB were consulted.

3.2.1. Statutory Rape

While conducting a qualitative study examining condom self-efficacy among sexually active AYAW, an 18-year-old female participant in the state of California discloses during a one-on-one interview via Zoom that one of the times she used a condom was when she had consensual sexual intercourse with her 35-year-old science teacher 3 years ago. She continues to calmly share her story, saying that he insisted on using a condom out of fear of unwanted pregnancy, and that he also used a condom with one of her classmates. She has not spoken to him since she graduated but knows he is still teaching at her California high school today.

There are several factors the researcher should take into consideration. First, it is important to determine if a crime was committed against the participant by identifying the age of sexual consent in the state of California. Under California Penal Code Section 261.5 it is unlawful for a person over 18 to have sexual intercourse with a minor (defined under California law as a person under 18 years old)[122]. Thus, consent is not a defense to statutory rape because the California State Legislature has determined that a person under 18 cannot give informed consent[122]. Although California does have some exceptions to the law of statutory rape[122], they do not apply in this instance due to the age difference between the teacher and study participant at the time of the sexual intercourse.

Second, the researcher must consider if their own profession falls under the category of "mandated reporter" in the state where the alleged crime occurred. Under the California Child Abuse and Neglect Reporting Act (CANRA), statutory rape is considered "unlawful sexual intercourse" and mandated reporters such as physicians, nurses, social workers, and teachers, must report to identified authorities when they have knowledge of a reportable offense[122,123]. Further, if a mandated reporter fails to report a crime they could be found liable for failing to protect a minor from abuse or neglect[124]. In California, failure to report known or suspected child abuse is classified as a misdemeanor and punishable by up to six months in jail and/or a fine of $1000 [124].

Based on California's statutory rape and mandated reporter laws, the researcher should breach confidentiality and report the crime to legal authorities. The researcher is not legally obligated to notify the participant of the report, it is ideal for study consent forms to include language notifying participants of circumstances where the researcher would need to breach confidentiality (i.e., physical, emotional, sexual, and/or financial abuse).

3.2.2. Sexual Assault

While conducting a qualitative study on sexual health decision-making and partner communication among AYAW college students, a 21-year-old female participant who attends a public university in Florida discloses to a researcher from the same university that she does not remember her most recent sexual partner, stating that she must have had too much to drink at a campus party last weekend because she awoke in a stranger's bed with her pants off. She says she thinks she had sex because she was sore

"down there" and had some bruising on her inner thighs. She states that she feels embarrassed and ashamed of her inability to remember the incident, and although she only remembers having two drinks at the party, she must have had more.

Since the participant has described an alleged sexual assault that took place on a university campus, the researcher must adhere to university policy for reporting sexual assault. Title IX of the Education Amendments Act of 1972 (known as "Title IX") is a law prohibiting sex-based discrimination and sexual harassment (including sexual violence) of students attending federally funded colleges and universities[125,126]. Under Title IX, there are specific guidelines for faculty and staff to follow for reporting known or suspected sexual assault of a student on campus. For example, faculty in supervisory positions such as "presidents, chancellors, vice presidents, deans, coaches, and faculty with punishment duties" are mandated reporters, while other faculty and staff may be designated mandated reporters at the discretion of the college or university[127]. Thus, , if the researcher is a faculty member and is a designated mandated reporter by the university, they are legally obligated to report an alleged sexual assault committed against a student on campus to their Title IX coordinator[125,127].

Under Title IX, mandated reporters are required to report sexual harassment or violence, regardless of having the victim's permission to do so[125-127]. Although not required, the researcher should consider notifying the participant of their legal obligation to report the alleged suspected sexual assault to their Title IX Coordinator. Once the Title IX coordinator receives the report, they will contact the victim via email[128]. The Title IX coordinator will offer the complainant resources (i.e., counseling, healthcare, victim's

advocate) and campus safety measures (i.e. security escort, housing assistance, no contact directive, etc.)[128]. Additionally, the Title IX coordinator will provide the victim with the option of filing a formal complaint with the police[128].

Similar to the first case study, it is ideal for the researcher to have language in their study consent form explicitly stating that they may have to report instances of sexual assault or violence. By providing such language, the participant is made aware of instances where the researcher is legally obligated to breach confidentiality, beforehand.

3.2.3. Abortion

A researcher in Texas is conducting a qualitative study examining contraception decision-making. After a 23-year-old participant discusses her experience on the pill, she states that she is considering switching to a different birth control method because her best friend got pregnant while on the pill last year, and she had to drive her to New Mexico to get an abortion.

Although an individual who aids and abets someone seeking an abortion in Texas can be sued by civilians, there is no mandate stating that the individual who contains information pertaining to the incident in question must report to legal authorities[129]. To deter women in Texas from seeking out of state abortions, Texas law states that citizens may bring civil action upon any individual who knowing or unknowingly aids and abets someone seeking an abortion[129]. Further, if the individual is found guilty, the citizen who reported the alleged crime can be awarded a minimum of $10,000 USD from the court[129].

Legally, the decision to report the offense is at the discretion of the researcher. However, the researcher must take into consideration that reporting the offense to legal

authorities could illicit harm to the participant by causing unnecessary emotional distress, a violation of the Declaration of Helsinki[105]. Additionally, the potential for the researcher to profit from reporting the offense to legal authorities calls into question the researcher's intention for conducting the research.

3.3. Discussion

The case studies presented in this paper are the aggregation of actual stories heard from participants as well as possible situations that could arise. The provided case studies highlight the complexities of conducting sexual health research while providing clarity around procedures for reporting known or suspected abuse. It is impossible to predict what information a participant will disclose during a research study, and protocols need to be in place for when a participant intentionally or unintentionally reports being the victim of a serious crime. When deciding to report an offense, it is essential to consider the laws of the state where the crime occurred. Specifically, researchers should evaluate laws about 1) the legal age of consent in the state where the crime occurred, 2) the crime committed against the participant, and 3) mandated reporting. Additionally, the researcher should take into consideration the location of where the offense took place. If a participant reports being a victim of a sex crime committed on a college campus, reporting guidelines specific to that college or university must be followed. Under any circumstance, legal counsel should be consulted.

Abortion laws are constantly changing, placing AYAW in difficult situations that could have legal, financial, emotional, and physical ramifications. Researchers who focus on sexual health and work with AYAW, need to consider state abortion laws to

prevent a participant from potentially divulging information that could incriminate herself or others. To reduce the risk of unintentionally incriminating oneself or another, the researcher must provide a clear and concise study consent form that informs participants of instances where legal authorities would need to be notified.

Due to the nature of the research topic, researchers who focus on sexual health are likely to face nuanced legal and ethical dilemmas. More research is needed to solidify abuse reporting protocols for researchers working with populations who are at high risk of being victims of sex crimes. Future studies should focus on the experiences of researchers who have been faced with unique ethical and legal dilemmas to contribute to a body of research geared towards building effective and efficient abuse reporting protocols. Collecting data from researchers who study sexual health in AYAW or from AYAW who have participated in sexual health research could provide more insight into unique situations that have occurred during the data collection process. Additionally, the development of tools and resources to facilitate the decision-making process for reporting abuse is needed.

Chapter 4. The Theoretical Understanding of STI/HIV Risk Perception and Dual-Method Contraceptive Decision-Making among Texas Adolescent and Young Adult Females

4.1. Introduction

Sexually transmitted infections (STIs) (including HIV) are a significant public health concern. In Texas, STIs are on the rise as primary syphilis rates doubled over the last five years, and congenital syphilis rates are at an all-time high.[130] Adolescent and young adult cisgender females (AYACF) between 18 and 24 years old in Texas have higher rates of chlamydia than any other age or gender group and have experienced a consistent increase in syphilis over the last five years in.[130,131] Unintended pregnancy is also a concern as Texas has the highest rate of adolescents who have multiple births in the country[132] and abortion is illegal.[129]

The risk of acquiring an STI and HIV can be reduced through correct and consistent condom use during oral, vaginal, and anal sex.[10] However, only 23% of AYACF use condoms during every sexual encounter.[11] AYACF who use prescribed contraceptives such as intrauterine devices (IUDs), birth control pills, hormonal implants, injections, patches, and rings are less likely to practice dual-method contraceptive use[12,13], which occurs when a prescribed contraceptive and a condom are both used during intercourse.[14] Prescribed contraceptive use is on the rise, [12,22,133] and adolescent females who use long-acting reversible contraceptives (LARCs) such as IUDs and implants are less likely to use a condom and have more sexual partners than those using short-acting reversible contraceptives (SARCs) such as oral birth control pills.[23,38,133,134] [39] Increasing trends in STI rates and limited dual-method contraceptive use highlight the

need to investigate attitudes and beliefs related to contraceptive use and STI and HIV risk perception. Risk perception analysis is an important factor in dual-method contraceptive decision-making as AYACF with a high STI and HIV risk perception are more likely to initiate dual-method contraceptive use than those who perceive themselves as low risk[21-24]. While risk perception analysis has been identified as an integral part of decision-making[25], the processes associated with STI and HIV risk perception analysis and dual-method contraceptive decision-making are poorly understood.

Dual-method contraceptive use is more likely to occur in women with a high STI and HIV risk perception than those who perceive themselves as low risk. [21] Further, women with low STI and HIV risk perception are more likely to engage in high-risk sexual behaviors. [22-24] Previous studies have shown risk perception to be a determinant factor for engaging in STI and HIV protective behaviors. [135-137] Risk perception plays an integral role in the decision-making process. [25] However, the processes associated with risk perception and dual-method contraceptive decision-making are poorly understood. Moreover, as professional associations and practice guidelines continue to promote LARCs as the first-line contraceptive method among adolescent women, [18,19] more research is needed to understand how the utilization of prescribed contraceptives impacts one's perceived risk of acquiring an STI and the processes associated with dual-method contraceptive use decision making.

4.1.1. STI and HIV Disparities

AYACF belonging to structurally oppressed racial and ethnic groups are disproportionately more affected by STIs than White AYACF. For example, Black

females are five times more likely to be diagnosed with chlamydia[5] and three times more likely to be diagnosed with HIV when compared to white females,[138] while Hispanic females are twice as likely to be diagnosed with syphilis. [5] Moreover, American Indian/Alaskan Native females are six times more likely to be diagnosed with gonorrhea, and five times more likely to be diagnosed with syphilis than their white counterparts. [30] The existing age, gender, racial, and ethnic STI and HIV disparities highlight the need to consider how social determinants influence dual-method contraceptive use among AYACF.

Structural determinants of health (SDOH) – including both social and structural determinants – strongly influence STI and HIV rates among AYACF. The World Health Organization (WHO) defines the SDOH as the circumstances under which individuals are born, raised, live, work, and age, and the available systems to deal with illness.[139] These circumstances are shaped by structural determinants which encompass social and political mechanisms that influence individual and collective access to resources, further contributing to social class division. [140] Structural determinants such as sexual health education policies and societal and cultural norms and values influence dual-method contraceptive use among AYACF, resulting in STI and HIV disparities. [65,141,142] Currently, only 18 states require sex education content to be medically accurate and only 27 states require HIV education to be included in sex education curricula. [143] Further, only 20 states are required to provide students with information on contraceptive methods. [143] As a result, only 52% of U.S. youth receive education about where to obtain prescribed contraceptive methods and only 59% are educated on condom application. [65]

While there is a strong correlation between inadequate sexual health education policy and climbing STI/HIV rates, societal and cultural norms and values also play an integral role in determining STI/HIV risk and disparities.

Societal and cultural norms and values are structural which determine STI and HIV risk and can inadvertently serve as a barrier to engaging in dual-method contraceptive use, if not acknowledged. [141,144,145] Gendered societal expectations and sexual stereotypes are the foundation of uneven relationship dynamics, resulting in the decreased use of condoms and/or prescribed contraceptives. [141,142,146,147] Further, gendered societal expectations and sexual stereotypes are disproportionately experienced by AYACF belonging to structurally oppressed racial and ethnic groups, contributing to glaring STI and HIV disparities. [141]

In the context of SDOH, structural determinants operate through intermediary determinants which directly affect dual-method contraceptive use among AYACF.[140] Health care access and quality play a critical role in determining dual-method contraceptive use as AYACF with access to health insurance are more likely to engage in dual-method contraceptive use and less likely to report an STI and HIV than those who are medically uninsured. [32,33] Additionally, psychosocial factors such as the interpersonal relationship dynamics between an AYACF and her partner determine dual-method contraceptive use as AYACF who report higher levels of relationship trust and commitment are less likely to practice dual-method contraceptive use than those in less trusting or committed relationships. [23,45] Meanwhile, negative relationship factors such as violence and conflict are associated with inconsistent, or lack of, dual-method

contraceptive use. [44,148] To understand the processes associated with dual-method contraceptive decision-making and STI/HIV risk perception among AYACF, healthcare access, and quality and relationship factors must be taken into consideration.

4.1.2. Study Purpose

The overall objective of this qualitative study is to provide insight into STI and HIV- related health factors among a racially and ethnically diverse AYACF population who are using prescribed contraceptives. Using a grounded theory approach, this study will generate theoretical knowledge of the relationship between SDOH, STI/HIV risk perception, and decision-making that will inform the development of a conceptual model for future theoretical testing and intervention development. The aims of this study are:

Aim 1: Conduct individual qualitative interviews with sexually active AYACF using prescribed contraceptives to understand their STI/HIV risk perception and decision-making related to dual-method contraceptive use.

Aim 2: To develop a conceptual model explaining the processes associated with risk perception analysis and decision-making related to dual-method contraceptive use among sexually active AYACF using prescribed contraceptives.

2a. Describe the role of personal background and SDOH in decision-making and risk perception.

2b. Develop hypotheses related to contributing factors and pathways for determining risk for STIs/HIV.

4.2. Methods

4.2.1. Study Design

This study implemented a constructivist grounded theory qualitative design to generate a middle-range theory related to STI/HIV risk perception analysis and dual-method contraception decision-making among sexually active AYACF. Following constructivist grounded theory procedures, the proposed study integrated the essential components by 1) theoretically sampling participants to get representativeness of the population, 2) conducting in-depth intensive interviews, 3) developing and using memos to ensure dependability and confirmability in increasing the trustworthiness of the data and findings and, 4) using a constant comparison approach in data analysis.[149] The primary data collection strategy was intensive individual semi-structured qualitative interviews collected at one point in time to provide an in-depth exploration of the participants' experiences and situations.[149]

4.2.2. Participants and Setting

In conducting a constructivist grounded theory study, it was imperative to select participants who had first-hand experience that would address the aims of the proposed study.[149] To understand the processes of STI/HIV risk perception and dual-method contraceptive decision-making among sexually active AYACF using prescribed contraceptives, participants met the following inclusion criteria: 1) self-identify as a cisgender female; 2) be between the ages of 18 and 24; 3) report vaginal intercourse in the last 12 months; and 4) must currently be using a prescribed contraceptive method

such as LARCs (i.e. IUD's, implants) or SARCs (i.e. contraceptive pills, injections, patches, rings),

Study recruitment occurred at the Baylor College of Medicine Cullen Teen Health Clinic in Houston, Texas, Harris County. The Cullen Teen Health Clinic provides free gynecological, birth control, family planning, and STI screening and treatment services to adolescents and young adults between the ages of 13 and 24 years old in Harris County, one of the largest and most racially and ethnically diverse counties in the US.[150,151] (Bureau, 2021; Baylor, 2021). In 2018, Harris County reported the highest STI case numbers in the state of Texas while accounting for 1 in 4 new HIV diagnoses at a rate that is almost twice the state average.[75]

4.2.3. Data Collection

Twenty-five semi-structured interviews were conducted, ranging from 18 to 55 minutes, with an average of 38 minutes per interview. A semi-structured interview format was appropriate for this study as it facilitated data collection, while still allowing participants to freely discuss thoughts or ideas that might not have been considered by the research team.[152] Interview questions were drafted by the research team who specialize in sexual and reproductive health to ensure content validity. Further, participant input contributed to the development of additional questions that were asked in future interviews. After the fourteenth interview, triangulation was used to identify new questions to add to the interview guide that would elicit further discussion about perceived monogamy and STI risk. While searching for qualitative studies that focused on condom use among adolescent and young adults, the research team identified a study

by Bolton, McKay, Schneider [153] and adapted questions from their interview guide. Specifically, the research team added questions such as "How did you know you were/are in a monogamous relationship?","What was happening in the relationship at the time?" and "What do you think is the likelihood that you will acquire an STI?" [153]Key questions that guided the interviews are presented in **Table 3**.

Table. 3. Social Determinants of Health Interview Guide

Rapport-building questions: • Tell me a little about yourself. • What interested you in this study?
Structural Determinants STI/HIV Prevention *(Sex Education Policy/Societal and Cultural Norms and Values)* Question 1: As previously mentioned in the screening, this is a study for sexually active women who are using prescribed contraceptives, commonly referred to as birth control, and we are interested in learning how they perceive STI/HIV risk. What do you think are the most important ways a young woman can protect herself against pregnancy and sexually transmitted infections (STIs) including HIV? • Probe: Tell me about your experience in learning about prescribed contraceptive and condom use. • Probe: Tell me about your sexual health education experience in school • Probe: Can you share with me how women in your community protect themselves from pregnancy and STIs, including HIV. • *Probe: Tell me about how one's culture might influence using a birth control and/or condom during sex* • Probe: How might where someone grew up influence their understanding of sexual health and prescribed birth control
Intermediary Determinants Prescribed Contraceptives *(Health System and Psychosocial)* Question 2: Could you tell me about the events that led to your decision to seek prescribed contraceptive? • Probe: As you thought about seeking prescribed contraceptives, who were the individuals you talked to for guidance?

- Probe: Can you share with me the information you were considering before starting a prescribed contraceptive?
- Probe: Tell me about any barriers you faced in obtaining your prescribed contraceptive?
- Probe: Tell me about your interaction with your provider during the visit you were prescribed contraceptive
- Probe: Tell me about the things you were thinking about when you made the decision to start a specific prescribed contraceptive.

Prescribed Contraceptive and Condom Use *(Psychosocial)*

Question 3: How would you describe how you viewed condom use before you got on a prescribed contraceptive?

- Probe: What pregnancy prevention methods did you use before starting a prescribed contraceptive?
- Probe: What contributed to your decision to use (or not to use) condoms before starting a prescribed contraceptive?
- Probe: Could you tell me about how your views towards condom use may have changed since starting a prescribed contraceptive?

Sexual Partners *(Psychosocial)*

Question 4: Since we have been discussing condom use, I would like to learn about your current or most recent sexual partner.

- Probe: Can you share with me conversations that you and your partner had regarding sexually transmitted infection (STI) prevention?
- Probe: Can you tell me how you both came to this understanding?

For participants who are currently in or had previously been in a monogamous relationship:

- *How did you know you were/are in a monogamous relationship?[153]
- *Probe: What was happening in the relationship at that time?[153]

For all participants:

- *What do you think is the likelihood that you will acquire an STI?[153]

Closing: Is there anything else you would like to share with me that we haven't talked about today?

- Before we end our conversation, I wanted to give you an opportunity to ask any questions.

*Questions inserted after fourteenth interview

Before interviews, each participant completed a demographic data form which included age, sex, gender identity, race and ethnicity information, relationship status, and type of prescribed contraception in use. Individual semi-structured interviews took place virtually via Zoom and were recorded with an encrypted audio recording device. All interviews were transcribed verbatim by Servixer transcription service out of Austin, Texas, and checked against recording for accuracy. Investigator memos were written immediately following the interviews and supplemented throughout the data analysis process to capture thoughts and develop connections.[149] Informed consent forms, demographic data forms, transcriptions, and memos were stored in a secure electronic drive developed in collaboration with the Assistant Dean of Information Technology at Duke University School of Nursing. Each participant's study record was provided with an anonymous participant ID number to further maintain participant confidentiality. For participating in the study, each participant was compensated with a $40 Amazon gift card.

4.2.4. Study Procedures

Theoretical sampling was implemented based on age, race, ethnicity, and type of prescribed contraceptive (SARC vs. LARC). All selected participants were recruited in person at Baylor College of Medicine Teen Health Clinic or referred to the research team by other participants. Once participants agreed to the interview, they were provided with a consent form to be signed before the interview. A total of twenty-five one-time, semi-structured interviews were conducted via Zoom after obtaining informed consent. All twenty-five interviews were conducted by one member of the research team (LH) who

has training in qualitative research methods. To provide context for data analysis, field notes were written immediately after each interview to capture the interviewer's thoughts, feelings, and perceptions. In accordance with theoreticalsampling procedures,149 after one interview was completed, transcribed, and analyzed, the next participant was theoretically recruited and selected for an interview to ensure representativeness of cisgender adolescent young adult women's experiences. Characteristics of previous participants (i.e. age, race, ethnicity, education, birth control method) were components considered in the theoretical sampling process.This sampling approach helped to ensure confirmability of diverse experiences.

4.2.5. Data Analysis

An inductive qualitative content analysis, using constant comparison, was conducted to explain the processes associated with risk perception analysis and decision-making related to dual-method contraceptive use among sexually active AYACF using prescribed contraceptives.[149] All recorded interviews were transcribed verbatim and imported into NVivo for coding and analysis.[97] Constant comparison analysis was performed between two members of the research team who have experience in qualitative data analysis and sexual and reproductive health research throughout the length of the data collection period and during three phases of coding- initial, focused, and theoretical. First, initial coding was performed to ensure the fit and relevance of the analyzed data and to identify connections between the participant's actions and larger social processes to help identify the possible paths that the data might take.[149] The initial coding process began shortly after an interview took place and consisted of line-by-line coding of the

transcribed interviews, field notes, and memos to highlight recurring words and immediately compare and contrast findings from previous interviews.[154] Next, the focused coding process occurred by assessing and comparing the initial codes to distinguish which codes have the greatest significance and theoretical direction.[149] Once the focused coding of the transcribed interview, field notes, and memos were complete, theoretical coding was used to conceptualize how the focused codes were related to specific categories.[149] To add precision and clarity to our data analysis, the research team conducted theoretical coding by 1) analyzing and synthesizing relationships between focused codes and 2) building a conceptual model explaining the processes associated with risk perception analysis and decision-making related to dual-method contraceptive use among sexually active AYACF using prescribed contraceptives.[149,155] The development of the conceptual model began during the theoretical coding phase of the first interview and occurred throughout the theoretical coding phase of the remaining interviews.

4.2.6. Trustworthiness and Rigor

To ensure credibility, triangulation was used to compare study findings to the literature throughout the data analysis process. Over the course of the study, data, procedures, and tools were constantly compared against the literature to confirm validity and assess the need for alterations. To ensure confirmability, reflexive journaling was conducted after each interview to capture thoughts and perceptions and identify any potential biases. To ensure dependability, an audit trail was kept detailing the developmental and implementation stages of this study.

4.2.7. Researcher Characteristics and Reflexivity

It is important to acknowledge the research team members' relationship to women's sexual and reproductive health. One member of the research team (LH) is a PhD student at Duke University where she is focused on sexual health decision-making among adolescent and young adult women. She is a Texas native who experienced sex education in a rural Texas public school and has conducted qualitative research examining sex education policy in Texas. Additionally, she has personal experience of using prescribed contraceptives as an AYACF. Another member (MVR) is the Interim Dean of Nursing and Professor of Nursing and Global Health, where he has conducted qualitative research related to high-risk sexual behaviors, the social determinants of health among African-American mothers living with HIV, and the experiences of women facing HIV-related stigma in the Deep South.

4.3. Results

As demonstrated in **Table 4**, a total of twenty-five AYACF were recruited for this study, with a mean age of 20.7 years, and primarily identified as African American (56%), Hispanic (48%), and Non-Hispanic (48%). The participants were mainly college-educated (80%) without children (88%) and currently in a monogamous relationship with one male partner (52%). Additionally, the majority of participants had previously been diagnosed with an STI (52%) and were currently using the shot, or Depo Provera, (40%) as their prescribed contraceptive method.

Table 4: Participant Demographics

Age	**#**	**%**
18 years old	2	8%
19 years old	3	12%
20 years old	11	44%
21 years old	2	8%
22 years old	2	8%
23 years old	1	4%
24 years old	4	16%

Race/Ethnicity	**#**	**%**
White	1	4%
Black	11	44%
Hispanic	8	32%
Asian	1	4%
Other	4	16%

Education	**#**	**%**
Current College Student	19	76%
Graduated College	1	4%
Non-College	4	16%
High School	1	4%

Previous STI Diagnosis	**#**	**%**
Yes	13	52%
No	12	48%

Birth Control Method	**#**	**%**
Shot	10	40%
Implant	5	20%

Pill	8	32%
Ring	1	4%
Patch	1	4%

Relationship Status	**#**	**%**
Single and having casual sex with one male partner	8	32%
Single and having casual sex with more than one male partner	4	16%
In monogamous relationship with one male partner	13	52%
In open relationship with more than one male partner	0	0%

Figure 2. The Process of Risk Perception and Decision-Making

The process of STI risk perception analysis and dual-method contraceptive decision-making consists of the following categories 1) Fear of pregnancy greater than fear of STIs, 2) Making assumptions and partner deferral, and 3) STI Diagnosis: A new reality (**Figure 2**). For AYACF, SDOH and personal background perpetuate the belief that pregnancy is a more significant concern than STIs. As AYACF navigate sexual relationships, they make assumptions about a sexual partner's STI status based on specific partner characteristics and relationship dynamics. Together, relationship dynamics and partner characteristics influence the decision to defer to the sexual partner for dual-method contraceptive decision-making. Additionally, a general lack of concern for STIs contributed to the decision to forgo condom use and rely on STI testing after engaging in sexual intercourse without a condom. As a result of deferring to the sexual partner and substituting condom use for STI testing, an STI diagnosis occurred, causing a shift in STI risk perception, which at times resulted in a behavior change.

4.3.1. Fear of Pregnancy > Fear of STIs

For many participants, the fear of an unwanted pregnancy was far greater than their fear of acquiring an STI. Although all participants were prescribed contraceptive users, many reported feeling *scared* and *anxious* about getting pregnant. For example, a twenty-one-year-old Asian college student compared her fear of pregnancy to a feeling of *impending doom*. While the fear of pregnancy was palpable among participants, their fear of STIs was minimal, playing a significant role in their STI risk perception. Below, a twenty-year-old Hispanic college student shared her perspective on pregnancy and STIs:

Well, I think pregnancy is definitely a lifetime, like a for-life commitment. And that's definitely way scarier, even though STIs are scary for sure. I don't know. I just feel like when you think of pregnancy, it's like really scary. Like, really scary, I mean, especially for women. I've always just been scared of my life stopping there.

Having an overwhelming fear of unwanted pregnancy contributed to dual-method contraceptive decision-making as several participants stopped using condoms once initiating a prescribed contraceptive. For example, a twenty-year-old Hispanic college student with a previous STI diagnosis described her experience of using condoms before initiating prescribed contraceptive use:

So I have used a condom since, like, I started the first time [being sexually active]. *And I've been using a condom since then until I went on birth control for the whole time, and then I stopped using a condom*.

Similarly, a nineteen-year-old college student who identified as Hispanic, American Indian, Asian, and White shared her experience of stopping condom use once initiating a prescribed contraceptive:

When I was on Nexplanon, they [sexual partners] were like, so there's no room for user error. And it's the most effective kind on the market, which kind of eased their worries. And also it was like, oh if we don't have to use condoms, that's fine.

Further, participants who engaged in dual-method contraceptive use reported using condoms for additional pregnancy protection as opposed to STI/HIV protection. A twenty-four-year-old Hispanic college student explained why she used condoms in addition to a prescribed contraceptive.

I think it was mostly, like, my thinking of condoms was, like, me just not getting pregnant. It was, like, another barrier for birth control, basically.

A twenty-one-year-old Asian college student shared a similar perspective of using condoms for additional protection against pregnancy.

I really don't wanna get pregnant, and the way Depo affects my body, I don't get a period. So, it makes me really paranoid about being pregnant. So I'll like every now and then, like I'll bring it up like, Hey, can we like start using condoms?

4.3.2. Social Determinants of Health

Recent changes to state abortion laws exacerbated participants' fear of unwanted pregnancy. As a result of newly implemented state laws restricting abortion services to women who are more than six weeks pregnant, participants considered additional ways to prevent pregnancy and detect pregnancy at the earliest stage possible. In the quote below, a nineteen-year-old African American college student shared her experience:

I feel like this makes me more conscious of knowing, like, I need to know right now if I think I'm pregnant because we should not be wasting time. I don't have time to be questioning and sitting here and thinking like, I just want them [pregnancy tests] *in bulk, in my bathroom, so I can just do whatever. I think that it's made me more cautious about my partner, like pulling out, like, you need to pull out, like, I stopped him, and I was like, no, you need to start pulling out more.*

Further, participants contemplated how they could access or self-induce an abortion in the instance that they became pregnant. For example, a nineteen-year-old

college student who identified as Hispanic, African American, and White shared how she would approach an unplanned pregnancy.

I'm pretty confident that I would catch it [pregnancy] *in time, and I will just get mailed in some abortion pills and just take that and naturally miscarry.*

A twenty-one-year-old Asian college student shared a similar perspective on what she would do if she were to experience an unplanned pregnancy.

I can't afford an abortion. Do I have to buy a bunch of vitamin C? To have like one of those, like self-abortions or whatever I hear people talking about like a hanger. I don't think I could ever do that. But yeah, I think it just makes you think of all these other alternatives that you could use, like the, I think that's the most common thing I hear is just taking a bunch of vitamin C, and that'll kill your baby, kill your baby or the fetus or whatever.

School-based sex education also played a significant role in how participants perceived pregnancy and STIs. For example, a twenty-one-year-old Asian college student shared her sex education experience:

They just instill a lot of fear of not getting pregnant at an early age and not getting STDs. And it's, it's effective because I'm deadly scared of getting pregnant at my age.

The majority of participants received a sexual health education in school that primarily focused on abstinence. A twenty-four-year-old African American college student with a prior STI diagnosis described her sex education:

Like it was cut dry, like safe sex, no sex, abstinence, and then, they mainly just talk about like what the genitals do and like all that stuff, like it was really, like a biology health class, it wasn't really like a Sex-Ed class.

Similarly, a nineteen-year-old African American college student with a prior STI diagnosis said:

I'm not gonna lie, like when I was younger and like Sex-Ed and stuff, they didn't really like teach it. They taught me more like abstain. Because they're like the best way to prevent everything, just abstain.

4.3.3. Personal Background

Breaking the cycle of becoming a mother at a young age was especially important to participants whose mothers had experienced an unplanned pregnancy in their adolescence or early twenties. The hardship experienced by their mothers navigating young motherhood further exacerbated participants' fear of having an unplanned pregnancy. A twenty-year-old Hispanic college student shared how her mother's experience influenced her decision to be on a prescribed contraceptive.

My mom's experiences have also had a big impact on how breaking the cycle is actually important and how it's up to you whether you want to be better for yourself and for your family.

Similarly, a twenty-year-old Hispanic college student shared how her mother's openness about her own life experiences shaped her contraceptive decision-making.

I think it does have like a big influence on myself and like what I want to be, just because my mom is very open to her past life or her childhood, and she talks about how

those experiences have like made her feel, and it just kind of like impacts me because that's my mom, you know, and like I don't want to like I guess disappoint her in the way where it's like I'm gonna do the same or like all her sacrifices are for nothing.

Concurrently, mothers who had experienced pregnancy in their adolescent and early twenties urged their daughters to use condoms and prescribed contraceptives to prevent a similar outcome. A twenty-year-old Hispanic college student shared something her mother said to her about the importance of using a prescribed contraceptive.

Like, because I don't want you to grow up the way that I did. I don't want your kids to have to grow up the way that y'all did. Like, without the same opportunities and things like that.

Similarly, an eighteen-year-old African American high school student discussed how her mother's experience of being a young mother played a role in their conversations about STI and pregnancy prevention.

My mom got pregnant at a young age; she got pregnant with me at 12 and had me at 13. So, like, she always like told me, "Protect yourself," [and] *"If you're doing something, use a condom"…, like, learn to choose yourself first.*

Relationships between participants and their mothers played a major role in how participants perceived STI risk. For example, participants who talked to their mothers about sex-related topics such as pregnancy and STI prevention methods were less likely to practice dual-method contraceptive use and more than twice as likely to have had a previous STI diagnosis compared to participants who have openly discussed sex-related topics with their mother.

Participants who did not talk to their mothers about pregnancy or STI prevention felt their mothers wanted to be in denial about their sexual activity and believed discussing sex would encourage promiscuity. Below, a nineteen-year-old college student with a prior STI diagnosis who identified as African-American, Hispanic, and White shared her experience of attempting to discuss sex and pregnancy prevention with her mother.

And my mom she just kind of was always kind of like, was kind of shushing me. She was like, oh no, like don't have sex like, I don't want to, I don't want to know about that, you have to be a virgin. Like she, she wanted, I think she would prefer if I was a virgin until I'm like 20, 23 or something.

Similarly, a Hispanic college student with a previous STI diagnosis shared her perspective on why her mother refused to talk to her about pregnancy and STI prevention.

Like my mom, I guess she didn't wanna talk about the topic 'cause she was like, oh, she's gonna start having sexual intercourse, and she's gonna end up pregnant. Just, you know, a typical mother.

Although many participants reported having conversations with their mothers about pregnancy and prescribed contraceptives, few reported their mothers discussing STIs and condoms. For example, a twenty-year-old Hispanic college student with a previous STI diagnosis provided insight into a sexual health discussion she had with her mother

There was no conversation about condoms or having multiple partners or having a conversation of communicating with your partner. That was all just kind of, like, what we figured out on our own.

4.3.4. Making Assumptions: Participant Characteristics, Relationship Dynamic, and Defer to Partner

Instead of using condoms or inquiring about condom use, participants made assumptions about their partner's STI status based on specific partner characteristics. For example, age played a significant role in STI risk perception analysis and dual-method contraceptive decision-making as participants with older sexual partners were more likely to assume that their partner did not have an STI, resulting in less dual-method contraceptive use. Older partners were *mature* and *responsible*. However, they rarely used condoms or had conversations about condoms or STIs before engaging in sex with the participant. In the quote below, a twenty-two-year-old Hispanic college student recalled a conversation she had with a friend regarding her older sexual partner.

I had mentioned to her [friend] *that I was seeing this older guy. He was 21 at the time. I was like, oh, I really liked him, like, we already have sex, but he tends to pull out. I was like, do you think that's okay?*

The age gap between participants and older partners facilitated a power dynamic where the older partner's needs and approval were more important than their own. For example, a twenty-one-year-old Asian college student explained the behavior of a partner who removed the condom during sexual intercourse despite her asking him to wear one.

He knows I'm paranoid about having kids. He is not as worried about having kids because he's a little older, and he really wants a family.

Additionally, participants with older partners were more likely to defer to their partners for condom use decision-making. Participants reported that their older partners had more sexual experience, contributing to an uneven power dynamic in the relationship. Below, a twenty-four-year-old Hispanic college student explained how her older partner's sexual experience played a role in her condom use decision-making:

I told him that it [sexual debut] *really didn't go that well but, then after that, he kind of told me he was gonna... mentor me and kind of like show me [how to have sex]…so I guess that's why I never, like, asked him* [to use a condom].

Obtaining approval from older partners was important to participants, as they would forgo asking partners to use a condom out of fear of rejection or being perceived as *immature*. In the quote below, a twenty-two-year-old Hispanic college student described how she feared being perceived negatively by her older partner if she inquired about condom use.

He was a little bit older than me, and I guess I was shy just because I was like, oh, he's more experienced. Let me not ask these questions: what if he looks down on me?

Trustworthiness was another partner characteristic that participants factored into their STI risk perception analysis and dual-method contraceptive decision-making. For example, a twenty-year-old Hispanic college student explained how trust plays a vital role in her dual-method contraceptive use decision-making.

I personally don't really use condoms because the people who are my partners are usually people that I trust.

Similarly, a twenty-one-year-old Asian college student shared.

I felt like, again, there was a sense of trust with those people, so it wasn't really going to make much of a difference if I did use condoms or didn't.

Participants used various approaches to determine if a partner was trustworthy. A twenty-four-year-old Hispanic participant who was college-educated said she recently trusted a new sexual partner because of a *gut feeling*, which resulted in her not using a condom during the sexual encounter. Meanwhile, a twenty-two-year-old Hispanic college student with a prior STI diagnosis explained why she never used condoms with her current partner:

I was still going to my clinic getting STD tested and everything was coming out clear. So our trust bond grew.

Meanwhile, several participants attributed a prior STI diagnosis to a partner that they perceived as trustworthy. A nineteen-year-old college student who identified as African American, Hispanic, and White provided insight into a prior STI diagnosis:

The first time I ever had condomless sex, I trusted the person because they said they get tested regularly, and that was the first and last time I contracted an STI, which was chlamydia.

Similarly, when a twenty-three-year-old Hispanic college student reflected on why she didn't use a condom during the sexual encounter that led to her STI diagnosis, she said, *I didn't use protection because I trusted what they had told me.* Meanwhile,

when a twenty-year-old African American high school graduate was asked why she didn't use a condom with a previous partner who gave her an STI, she responded, *Because I was too trusting.*

Participants also made assumptions about their partner's STI status based on their partner's sexual history as participants were less likely to use condoms with partners whom they believed to have had a low number of sexual partners. In the quote below, a twenty-year-old Hispanic college student assumed her partner's STI status based on his sexual history:

Because I feel like he hasn't been with many. At the top of my head probably like two to three before me, so it wasn't like, oh my god he's been with more than ten. I should probably have him get checked out before or anything like that.

Similarly, a twenty-two-year-old African American college student shared how her partner's sexual history influenced her decision not to wear a condom with him:

But, yeah, I asked, and I was like, oh, yeah, like, how many people have you had sex with, like, these last couple months and stuff? And I can't remember the exact answer, but I think he said, like, two people, so.

Conversely, participants were more likely to use condoms if they didn't know their partner's sexual history or viewed their partner as *promiscuous*. Below, a twenty-year-old Hispanic college student shared why she initially use condoms with her partner:

So honestly, the only partner I've ever had is my, my current boyfriend, so when I did start having sex with him, we did start off using condoms just because, like, you know,

like, that's how I felt safer, like, it was my first time doing things, like, I also, like, didn't know about his sexual past, you know and I wanted to be safe.

Along similar lines, a nineteen-year-old college student with a prior STI diagnosis who identified as African American, Hispanic, and White explained how sexual history was factored into her dual-method contraceptive decision-making:

So when someone is new, and I don't particularly, you know, trust them. You know, I don't know their sexual history. Definitely, definitely condom usage.

4.3.5. Relationship Dynamic

Relationship dynamic consists of specific relationship factors associated with the interpersonal relationship between the participant and her partner that were factored into the participant's STI risk perception analysis. Monogamy was a major factor associated with dual-method contraceptive decision-making as participants reported less condom use while being in a perceived monogamous relationship compared to those who were having casual sex. Participants made assumptions about their partner's STI status based on their partners being perceived as *faithful* or *loyal.* Below, a twenty-year-old African American college student reflected on her thought process in a previous relationship.

I'm not gonna wear no condom with this person because he's probably never gonna cheat on me or leave me, you know?

Participants reported not wearing condoms while in non-monogamous sexual relationships or when having sex with a new partner, but not while in a monogamous relationship. For example, a twenty-year-old African American participant with a high

school education said, *I just didn't use them* [condoms] *as much because I was in a relationship*. Similarly, a nineteen-year-old African American college student reported:

I still think they're [condoms] great, but I feel like I just don't find a use for them right now. Maybe if I wasn't, if, if I weren't in a relationship and I was just having casual sex, I would for sure wear condoms.

Several participants who used condoms at the beginning of their perceived monogamous relationships reported stopping condom use once they had been in the relationship for a certain amount of time. Below, an African American college student provided further insight:

So I've been with, well, I'm no longer with him, but we were together for six years. So we started off like using condoms, and then eventually, you know, we stopped because we were together for like two years at that point.

A twenty-two-year-old Hispanic college student with a prior STI diagnosis shared a similar experience:

After being diagnosed with chlamydia, like, I was like very careful. I was like, yeah, no, like condoms, unless you're in a serious relationship. And then, after that, I started dating this person, and we were together for two years. So, after like probably like seven months of dating, we stopped wearing condoms.

In some instances, perceived monogamy played a role in participants' decision to defer to their partner for condom use decision-making. For example, an eighteen-year-old Hispanic participant with a high school education reported:

He started saying that we were already together, so what was the reason for us to, you know, use condoms if we were just with each other? But I mean, he did cheat on me, so, because obviously I got chlamydia.

Similarly, a twenty-four-year-old Hispanic college graduate discussed her partner's decision to stop wearing condoms after they had been together for a few months:

I think it was his decision. He wanted to do it or stop doing it just because he said that he wanted to know how it felt like not having a condom.

Additionally, condom use was low in relationships where participants reportedly knew their partner for a period of time prior to engaging in sexual intercourse with them. In the quote below, a twenty-four-year-old African American college student provided insight into how familiarity played a role in her dual-method contraceptive decision-making.

Well, even before then, the person that gave me the last one [STI]*, we used to date back in middle school. So, I felt comfortable with him, you know, it wasn't like some dude off the street.*

A twenty-year-old Hispanic college student shared a similar perspective when she stated, *I've never used a condom with him, even though, because he was my best friend since sixth grade.*

4.3.6. STI Testing as Reassurance

Frequent STI testing was common among participants who did not practice consistent condom use. Participants often made the assumption that STI testing (without

condom use) was enough to protect them from STIs, Participants reported that STI testing provided them with *reassurance* after engaging in sexual intercourse without a condom. A twenty-four-year-old, Hispanic college graduate discussed her experience:

I would just go ahead and book an appointment literally for that week and tell the doctor what was going on, just because I'm very paranoid to some extent, like because I knew I was, like, having casual sex [without a condom].

Similarly, a twenty-year-old Hispanic college student stated:

And I just kind of took his word for it [not having STIs], *and I was like, okay, that's fine. But I did get, like, checked afterward, and I was, like, just sure of it, you know*. - Participant 18 (20 years old/Hispanic/College student)

Additionally, some participants decided to completely stop wearing condoms because they were getting tested frequently for STIs. In the quote below, a twenty-three-year-old, Hispanic high school graduate with a prior STI diagnosis explained further:

Yeah, I'm way more comfortable not using condoms anymore. Yeah, but again, I'm emphasizing like I'm emphasizing getting a screen or getting tested with my partner or making sure that they've been tested recently and then if I do just have sex with them, I make sure I'm like, okay in three months, I'm gonna get tested and I'll see

Participants who continued to have sex with partners who had previously given them an STI preferred STI testing to using condoms. A twenty-four-year-old African American college student shared her experience:

Even when, like, when I found out my spouse was cheating, every time we had sex, I set a doctor's appointment, I don't care if it was every week, every two weeks, every three weeks, every month, I always set a doctor's appointment afterwards.

Similarly, an eighteen-year-old Hispanic high school graduate reported:

Well, I mean, the only reason that I'm still with him, even though he gave me an STI, was because of our child, you know. And I mean, I still get myself checked every, like, every six months at least because I'm scared, obviously. Like that, he'll cheat on me again, and he'll catch something and give me something.

4.3.8. STI Diagnosis: A New Reality

For many participants, an STI diagnosis created a shift in STI risk perception analysis and dual-method contraceptive decision-making. As participants grappled with their STI diagnosis, they began to consider implementing behavioral changes to reduce their likelihood of acquiring another STI in the future. Below, a twenty-three-year-old Hispanic participant with a high school education explained:

And that kind of put me in the spot where it's kinda like, oh, I should start watching, you know, watching out who I mess with and who I, I should use more protection.

Similarly, a twenty-year-old Hispanic, college student shared:

Okay, so before, I didn't, yeah, so I really thought of it as more of a pregnancy thing. So, I was like, in my mind, like, biological, thinking like I can't get pregnant on my period so I didn't really put too much effort into like using a condom, but after chlamydia, I'm like use a condom every time like it's not negotiable. Following an STI diagnosis,

some participants reported behavior change as they stopped deferring to their partners for condom use decision-making and started demanding condom use from their sexual partners. A twenty-two-year-old Hispanic college student shared her experience:

I kind of did put my foot down; I was like, look, it's either we're gonna wear condoms or we're just gonna leave it out here, I was like, I enjoy being with you, obviously, but if you are not gonna follow through with this, then there's no point of us being like that.

Along similar lines, a twenty-three-year-old Hispanic high school graduate provided insight into her experience of demanding condom use:

There is times that I felt uncomfortable just because I feel that the person makes it seem a little awkward or just they get uncomfortable about the conversation. But for me, I try to just bring it up, keep it short, and keep it straightforward because, at the end of the day, it's for my own good, too.

Additionally, some participants began to carry their own condoms. For example, a twenty-year-old African American high school graduate stated:

I just think because, you know, like I said, a lot of people, men usually don't [carry condoms]. So I mean, to protect myself, I mean, it's just best that I just have my own [condoms]

As participants began to take control of their health, they reported experiencing a newfound sense of confidence. For example, a twenty-year-old African American high school graduate said, *When you put your foot down, it feels empowering*.

Similarly, a twenty-two-year-old Hispanic college student shared:

But you demanding a condom, it's like you know what you want in your life, you take care of yourself, you're aware of what can happen and consequences when having sex.

4.4. Discussion

This grounded theory study provides insight into the complex decision-making processes associated with STI risk perception analysis and dual-method contraceptive use among a racially and ethnically diverse group of AYACF. Our study found that AYACF are making assumptions about the STI status of their sexual partners and deferring to them for condom use decision-making. Rather than inquire about their partner's STI status or ask them to wear a condom, participants conducted their own risk perception analysis based on partner characteristics and relationship dynamics.

Perceived trustworthiness and monogamy were the most cited reasons for not practicing dual-method contraceptive use and deferring to partners for condom use decision-making. Further, among participants with a prior STI diagnosis, perceiving their partner as trustworthy and monogamous were the most common reasons for not using a condom during the sexual encounter that led to their STI diagnosis. A possible explanation for the relationship between perceived trustworthiness and monogamy and partner deferral is that young adult women are more likely to be attached to societal romantic love ideals such as love, faithfulness, and lifelong commitment in their relationship than their male partners, causing them to misjudge trust.[156] Additionally, partner deferral is more likely to occur in relationships with an uneven power dynamic than in relationships where decision-making and power are equally distributed.[157] Such

findings were reflected in our study as participants who reported having older and more experienced sexual partners were more likely to defer to them for condom use decision-making.

An important finding in our study was the role mothers played in STI risk perception and dual-method contraceptive decision-making. Our study found that participants with mothers who avoided sexual health discussions were twice as likely to have been diagnosed with an STI as participants whose mothers engaged in conversations about sexual health-related topics such as STIs and pregnancy prevention. Further, mothers of participants who personally experienced or had a close family member experience unintended pregnancy as an adolescent or young adult were more likely to discuss STI and pregnancy prevention with their daughters compared to mothers who had not experienced an unintended pregnancy at a young age. Mother-daughter communication reduces STI and unintended pregnancy among adolescents under 18 years of age.[158-160] Our findings demonstrate that mother-daughter communication in adolescence can also reduce STI and unintended pregnancy risk in young adulthood.

An interesting finding from this study is that participants used STI testing as reassurance after engaging in sexual intercourse without a condom. Conversely, a previous study found that young adult women were using STI testing as a form of reassurance before engaging in sexual intercourse without a condom.[13] One explanation for participants using STI testing as reassurance in both studies is that they were recruited from clinics with free sexual health services (including STI testing), eliminating any potential financial barriers to STI testing. Another explanation for participants using STI

testing for reassurance after engaging in sexual intercourse without a condom is that participants perceive STIs as temporary illnesses that are treatable or curable, as opposed to chronic.

Additionally, societal factors such as state abortion policy and school-based sex education played a significant role in perpetuating fear of unplanned pregnancy among participants. Our study found that recent changes to abortion laws exacerbated participants' pre-existing fear of pregnancy as participants reported buying pregnancy tests and Plan B in bulk, as well as considering potentially life-threatening measures to self-induce an abortion after Roe V. Wade was overturned. Meanwhile, almost all participants reported having a sex education that focused on abstinence and avoiding pregnancy but did not provide information about STIs or STI prevention. Thus, their reduced fear of STIs in comparison to pregnancy might be attributed to a lack of knowledge about STIs and their health-related consequences.

4.4.1. Limitations

This study has limitations. First, the majority of participants were in college and identified as Black/African American and/or Hispanic. Thus, findings from this study may not be applicable to AYACF who do not attend college and/or belong to other racial or ethnic groups. Second, the majority of participants had access to free STI testing and treatment. Thus, participants might not have felt as much of a need to protect themselves from STIs as AYACF without access to free STI testing and treatment. Third, all interviews were conducted via Zoom. Although the participants were engaged during interviews and provided rich data, they might have been more forthcoming if the

interviews were in person. Additionally, in-person interviews would have allowed for a closer assessment of non-verbal cues.

4.4.2. Conclusion

Our results indicate that dual-method contraceptive decision-making and STI risk perception analysis is a complex process involving personal, relationship, and societal factors. AYACF have low STI risk perception, are not practicing dual-method contraceptive use, and are deferring condom use decision-making to partners they perceive as trustworthy or monogamous. Once diagnosed with an STI, AYACF stop relying on perceptions and assumptions to determine the need for dual-method contraceptive use and begin to engage in new thinking and behaviors. The shift in perspective and behavior caused by the STI diagnosis highlights the need to empower young women to put their own sexual health needs before their partners.

Additionally, STI education is important in reducing STI risk. Our study found that mother-daughter communication increased dual-method contraceptive use, reducing STI risk. Future research should focus on ways to promote mother-daughter communication about STI prevention in the AYACF population.

Chapter 5. Conclusion

Adolescent and young adult cisgender females (AYACF) are disproportionately affected by STIs compared to other age and gender groups.[2,3,7,9] While AYACF are using prescribed contraceptives to reduce their risk of pregnancy,[12,22,133] condom use to reduce STI risk is low.[11] To most effectively reduce their risk of both pregnancy and STIs, sexually active AYACF must practice dual-method contraceptive use.[20] Thus, the purpose of this study was to explore multilevel factors associated with dual-method contraceptive use among AYACF.

5.1. Key Findings

Comprehensive sex education (CSE) is effective in reducing STI, HIV, and unintended pregnancy rates and reduces sexual risk behavior among youth. [63,79-81]. In chapter two, societal-level factors were explored by conducting qualitative interviews with sexual health policy experts in Texas, a state with STI rates that are higher than the national average.[161] The majority of Texas public schools provide abstinence-based sexual health education, [76,88] which is less effective than comprehensive sex education (CSE), [79-81,84,85] a curriculum widely endorsed by national health organizations.[63,79] Thus, it was important to understand the barriers and facilitators to implementing a sex education curriculum that's proven to be more effective in reducing STIs and unintended pregnancy than the one currently in place.

Key findings from chapter two suggest that there are many barriers to teaching CSE in Texas public schools. However, through advocacy and working with community stakeholders, CSE can be implemented. Each public school has its own School Health

Advisory Committee (SHAC) which determines its sex education curriculum, and SHAC officials are members of the community who are elected by the community. Thus, CSE advocates can either campaign for an elected SHAC position or work with other CSE champions or community stakeholders to advocate for the use of a CSE curriculum to their local SHAC. Additionally, medical professionals can play a significant role in advocating for CSE at local SHAC meetings or by serving on their local SHAC.

Conducting scientific research is necessary to develop and implement effective interventions that increase dual-method contraceptive use and reduce STIs among AYACF. When conducting sexual health research with AYACF, there is potential for a participant to report being the victim of a sex crime. Additionally, recent and frequent changes to state abortion policy can potentially create legal and ethical dilemmas for researchers who focus on sexual health. In chapter three, legal and ethical considerations of conducting sexual health research with AYACF were explored. Key findings from chapter three demonstrate that if a participant discloses being the victim of a crime, the researcher must take into consideration 1) the legal age of consent in the state the crime occurred, 2) the crime committed against the participant, and 3) mandated reporting laws. Additionally, researchers need to be aware of state abortion laws to reduce the risk of a participant disclosing information about an illegal abortion. To reduce the likelihood of a participant unintentionally or unknowingly revealing information about a crime involving them, researchers must have language in their study consent forms that clearly state the circumstances in which they would have to break confidentiality and go to legal

authorities. Finally, if a researcher is in a situation that might constitute the need to go to legal authorities, they must consult with their legal team.

Risk perception analysis is an important factor in dual-method contraceptive decision-making as AYACF with a high STI/HIV risk perception are more likely to initiate dual-method contraceptive use than those who perceive themselves as low risk [21] While risk perception analysis has been identified as an integral part of decision-making,[25] the processes associated with STI/HIV risk perception analysis and dual-method contraceptive decision making are poorly understood.

In chapter four, twenty-five qualitative interviews were conducted to understand the processes associated with dual-method contraceptive decision-making and STI risk perception analysis, leading to several key findings. First, instead of using condoms or inquiring about the STI status of their sexual partners, AYACF are making assumptions about their partners' STI status based on perceived trustworthiness and monogamy, the age and sexual history of their partner, and how well they knew their partner prior to engaging in sexual intercourse. Second, AYACF with partners who are older or they perceive as trustworthy or monogamous are more likely to defer to their partner for condom use decision-making. Third, AYACF have a greater fear of pregnancy than they do STIs, which is perpetuated by abortion policy, sex education in school, and personal background. Fourth, AYACF with mothers who avoided conversations about sex and contraception were twice more likely to be diagnosed with an STI than those with mothers who did not engage in sexual-health-related conversations. Fifth, AYACF are relying on STI testing after engaging in sexual intercourse without a condom as opposed

to using a condom. Last, AYACF with a previous STI diagnosis are more likely to practice dual-method contraceptive use than those without a previous STI diagnosis.

5.2. Limitations

This dissertation has limitations. First, this dissertation primarily focuses on dual-method contraceptive use among AYACF who reside in Texas. AYACF from other states might have different experiences with dual-method contraceptive use. Thus, findings from Chapter Two might not apply to other states, as they might have different barriers and facilitators to implementing dual-method contraceptive use.

Second, laws about sexual crimes and abortion vary by state, and the case studies provided in chapter three only covered state laws about sexual crimes and abortion in three states (South Dakota, California, and Texas). Constantly changing abortion laws highlight the need to provide researchers with resources to protect participants from incriminating themselves for obtaining an illegal abortion or assisting another individual in obtaining an illegal abortion in states beyond the one provided in the exemplar (Texas).

Third, this dissertation did not provide any quantitative studies, meaning statistical inferences cannot be made. Additionally, in Chapter Four, the majority of participants were recruited from a single sexual health clinic that provided free sexual health services, including STI testing. Thus, findings from Chapter Four cannot be applied to a study population that experienced financial barriers to sexual health care. Further, most participants recruited for the study in Chapter Four were in college or attended college and belonged to structurally oppressed racial and ethnic groups. Thus,

findings from the study in chapter four might not apply to participants who have never attended college or only identify as White.

5.3. Implications and Recommendations

Findings in chapter four indicate that AYACF did not perceive themselves as susceptible to STIs and the majority are not learning about STI prevention in school or the home. These findings highlight the need to evaluate sex education policy and for policymakers and SHAC representatives to consider implementing CSE in their public school(s) as opposed to abstinence-based sex education. For those who wish to implement CSE, chapter two provides insight into navigating the Texas sex education landscape and implementing CSE at a local level. Further, findings in chapter four indicate that AYACF are not learning about STI prevention in school or the home and perceive themselves as low risk for STIs despite having sex without a condom emphasizes the importance of healthcare providers educating AYACF on STIs and STI prevention.

Findings in chapter three demonstrate that there is a need to develop abuse reporting protocols for researchers who focus on AYACF sexual health. STIs among AYACF are on the rise and there is a growing need for research that provides insight into why AYACF are not using condoms to develop interventions that increase their use.

In chapter four, AYACF made assumptions about their partners' STI status based on partner characteristics and relationship factors, contributing to low STI risk perception. To increase STI risk perception, AYACF needs to understand that all partners, regardless of being perceived as trustworthy or monogamous, are capable of

having an STI. Healthcare providers and school sex education can provide education on STI risk and prevention.

In conclusion, individual, relationship, community, and societal factors play a significant role in dual-method contraception decision-making among AYACF. This study found that policy interventions are needed to increase STI risk perception among AYACF and provide them with the knowledge and tools reduce their risk of STIs. Empowering AYACF to take ownership of their sexual health and view their needs as equally or more important than their male partners is important for increasing dual-method contraceptive use in this population.

Bibliography

1. Martin JA, Hamilton BE, Osterman MJK, Driscoll AK. Births: Final Data for 2019. *Natl Vital Stat Rep.* 2021;70(2):1-51.

2. Table 6B. Chlamydia — Reported Cases and Rates of Reported Cases Among Women Aged 15–24 Years by Age, United States, 2017–2021. Centers for Disease Control and Prevention. https://www.cdc.gov/std/statistics/2021/tables/6b.htm. Published 2023. Accessed 11 November, 2023.

3. Table 11B. Gonorrhea — Reported Cases and Rates of Reported Cases Among Women Aged 15–24 Years by Age, United States, 2017–2021. Centers for Disease Control and Prevention. https://www.cdc.gov/std/statistics/2021/tables/11b.htm. Published 2023. Accessed 28 November, 2023.

4. *Diagnoses of HIV Infection in the United States and Dependent Areas, 2021: Table 8A.* Centers for Disease Control and Infection;2023.

5. *Sexually Transmitted Disease Surveillance 2019.* Atlanta Centers for Disease Control and Prevention;2021.

6. Table 10B. Gonorrhea — Rates of Reported Cases* by Race/Hispanic Ethnicity, Age Group, and Sex, United States, 2021. Centers for Disease Control and Prevention. https://www.cdc.gov/std/statistics/2021/tables/10b.htm. Published 2023. Accessed 29 November, 2023.

7. Table 5B. Chlamydia — Rates of Reported Cases* by Race/Hispanic Ethnicity, Age Group, and Sex, United States, 2021. Centers for Disease Control and Prevention. https://www.cdc.gov/std/statistics/2021/tables/5b.htm. Published 2023. Accessed 29 November, 2023.

8. Diagnoses of HIV Infection in the United States and Dependent Areas, 2021: Table 7B. Diagnoses of HIV infection attributed to heterosexual contact by year of diagnosis, assigned sex at birth, race/ethnicity and selected characteristics, 2017-2021-United STates and 6 dependent areas. Centers for Disease Control and Prevention. https://www.cdc.gov/hiv/library/reports/hiv-surveillance/vol-34/content/tables.html. Published 2023. Accessed 29 November, 2023.

9. Table 16B. Primary and Secondary Syphilis — Rates of Reported Cases* by Race/Hispanic Ethnicity, Age Group, and Sex, United States, 2021. Centers for Disease Control and Prevention. https://www.cdc.gov/std/statistics/2021/tables/16b.htm. Published 2023. Accessed 29 November, 2023.

10. (CDC) CfDCaP. STDs and HIV – CDC Fact Sheet. https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm. Published 2021. Accessed.

11. Copen CE. Condom Use During Sexual Intercourse Among Women and Men Aged 15-44 in the United States: 2011-2015 National Survey of Family Growth. *Natl Health Stat Report.* 2017(105):1-18.

12. Martinez GM AJ. *Sexual activity and contraceptive use among teenagers aged 15–19 in the United States, 2015–2017.* National Center for Health Statistics;2020.

13. Lemoine J, Teal SB, Peters M, Guiahi M. Motivating factors for dual-method contraceptive use among adolescents and young women: a qualitative investigation. *Contraception.* 2017;96(5):352-356.

14. Cates WJ, Steiner MJ. Dual Protection Against Unintended Pregnancy and Sexually Transmitted Infections: What Is the Best Contraceptive Approach? *Sexually Transmitted Diseases.* 2002;29(3):168-174.

15. Daniels KA, JC. Current contraceptive status among women aged 15-49: United State, 2015-2017. In. *NCHS Data Brief*. Hyattsville, MD: National Center for Health Statistics; 2018.

16. Mendez BHP. *Defense Health Primer: Contraceptive Services.* 2019.

17. Saldanha N. Use of Short Acting Reversible Contraception in Adolescents: The Pill, Patch, Ring and Emergency Contraception. *Current Problems in Pediatric and Adolescent Health Care.* 2018;48(12):333-344.

18. Committee on Practice Bulletins-Gynecology L-ARCWG. Practice Bulletin No. 186: Long-Acting Reversible Contraception: Implants and Intrauterine Devices. *Obstet Gynecol.* 2017;130(5):e251-e269.

19. Menon S, ADOLESCENCE CO, Alderman EM, et al. Long-Acting Reversible Contraception: Specific Issues for Adolescents. *Pediatrics.* 2020;146(2).

20. CDC CfDCaP. Contraception. https://www.cdc.gov/reproductivehealth/contraception/index.htm. Published 2020. Accessed.

21. Sieving RE, Bearinger LH, Resnick MD, Pettingell S, Skay C. Adolescent Dual Method Use: Relevant Attitudes, Normative Beliefs and Self-Efficacy. *Journal of Adolescent Health.* 2007;40(3):275.e215-275.e222.

22. Steiner RJ, Liddon N, Swartzendruber AL, Rasberry CN, Sales JM. Long-Acting Reversible Contraception and Condom Use Among Female US High School Students: Implications for Sexually Transmitted Infection Prevention. *JAMA Pediatrics.* 2016;170(5):428-434.

23. Higgins JA, Cooper AD. Dual use of condoms and contraceptives in the USA. *Sexual Health.* 2012;9(1):73-80.

24. McNicholas CP, Klugman JB, Zhao Q, Peipert JF. Condom use and incident sexually transmitted infection after initiation of long-acting reversible contraception. *American Journal of Obstetrics and Gynecology.* 2017;217(6):672.e671-672.e676.

25. Williams DJ, Noyes JM. How does our perception of risk influence decision-making? Implications for the design of risk information. *Theoretical Issues in Ergonomics Science.* 2007;8(1):1-35.

26. The Social-Ecological Model: A Framework for Prevention. Centers for Disease Control and Prevention https://www.cdc.gov/violenceprevention/about/social-ecologicalmodel.html. Published 2022. Accessed.

27. Stokols D. Translating social ecological theory into guidelines for community health promotion. *Am J Health Promot.* 1996;10(4):282-298.

28. Kleppa E, Holmen SD, Lillebø K, et al. Cervical ectopy: associations with sexually transmitted infections and HIV. A cross-sectional study of high school students in rural South Africa. *Sex Transm Infect.* 2015;91(2):124-129.

29. Rocha-Zavaleta L, Yescas G, Cruz RM, Cruz-Talonia F. Human papillomavirus infection and cervical ectopy. *International Journal of Gynecology & Obstetrics.* 2004;85(3):259-266.

30. CDC CfDCaP. Health Disparities in HIV/AIDS, Viral Hepatitis, STDs, and TB: American Indians and Alaskan Natives. https://www.cdc.gov/nchhstp/healthdisparities/americanindians.html. Published 2020. Accessed.

31. Peipert JF, Zhao Q, Meints L, Peipert BJ, Redding CA, Allsworth JE. Adherence to dual-method contraceptive use. *Contraception.* 2011;84(3):252-258.

32. Eisenberg DL, Allsworth JE, Zhao Q, Peipert JF. Correlates of Dual-Method Contraceptive Use: An Analysis of the National Survey of Family Growth (2006–2008). *Infectious Diseases in Obstetrics and Gynecology.* 2012;2012:717163.

33. Tyler CP, Whiteman MK, Kraft JM, et al. Dual Use of Condoms With Other Contraceptive Methods Among Adolescents and Young Women in the United States. *Journal of Adolescent Health.* 2014;54(2):169-175.

34. Raiford JL, Herbst JH, Carry M, Browne FA, Doherty I, Wechsberg WM. Low prospects and high risk: structural determinants of health associated with sexual risk among young African American women residing in resource-poor communities in the south. *American journal of community psychology.* 2014;54(3-4):243-250.

35. Bobashev GV, Zule WA, Osilla KC, Kline TL, Wechsberg WM. Transactional Sex among Men and Women in the South at High Risk for HIV and Other STIs. *Journal of Urban Health.* 2009;86(1):32-47.

36. Dunkle KL, Wingood GM, Camp CM, DiClemente RJ. Economically Motivated Relationships and Transactional Sex among Unmarried African American and White Women: Results from a U.S. National Telephone Survey. *Public Health Reports.* 2010;125(4_suppl):90-100.

37. Kilburn K, Ranganathan M, Stoner MCD, et al. Transactional sex and incident HIV infection in a cohort of young women from rural South Africa. *Aids.* 2018;32(12):1669-1677

38. Walsh-Buhi ER, Helmy HL. Trends in long-acting reversible contraceptive (LARC) use, LARC use predictors, and dual-method use among a national sample of college women. *Journal of American College Health.* 2018;66(4):225-236.

39. Pazol K, Kramer MR, Hogue CJ. Condoms for Dual Protection: Patterns of Use with Highly Effective Contraceptive Methods. *Public Health Reports.* 2010;125(2):208-217.

40. Crosby RA, DiClemente RJ, Salazar LF, et al. Predictors of consistent condom use among young African American women. *AIDS Behav.* 2013;17(3):865-871.

41. French SE, Holland KJ. Condom negotiation strategies as a mediator of the relationship between self-efficacy and condom use. *J Sex Res.* 2013;50(1):48-59.

42. Kusunoki Y, Bevilacqua K, Barber JS. The Dynamics of Intimate Relationships and Violent Victimization Among Young Women. *J Interpers Violence.* 2023;38(3-4):3344-3372.

43. Manlove J, Welti K, Karpilow Q. Relationship Violence Typologies and Condom Use in Young Adult Dating Relationships. *Perspectives on Sexual and Reproductive Health.* 2019;51(2):109-117.

44. Manlove J, Welti K, Barry M, Peterson K, Schelar E, Wildsmith E. Relationship Characteristics and Contraceptive Use Among Young Adults. *Perspectives on Sexual and Reproductive Health.* 2011;43(2):119-128.

45. Wilson EK, Koo HP. Associations Between Low-Income Women's Relationship Characteristics and Their Contraceptive Use. *Perspectives on Sexual and Reproductive Health.* 2008;40(3):171-179.

46. Sales JM, Lang DL, DiClemente RJ, et al. The mediating role of partner communication frequency on condom use among African American adolescent females participating in an HIV prevention intervention. *Health Psychology.* 2012;31(1):63.

47. Bernard C, Zhao Q, Peipert JF. Dual method use among long-acting reversible contraceptive users. *Eur J Contracept Reprod Health Care.* 2018;23(2):97-104.

48. *Reports Detail Expansion of Neighborhood Poverty.* National Low Income Housing Coalition

49. Ross CE, Mirowsky J. Neighborhood disadvantage, disorder, and health. *Journal of health and social behavior.* 2001:258-276.

50. Kerr JC, Valois RF, Siddiqi A, Vanable P, Carey MP. Neighborhood condition and geographic locale in assessing HIV/STI risk among African American adolescents. *AIDS and Behavior.* 2015;19:1005-1013.

51. Ford JL, Browning CR. Neighborhood social disorganization and the acquisition of trichomoniasis among young adults in the United States. *American journal of public health.* 2011;101(9):1696-1703.

52. Browning CR, Burrington LA, Leventhal T, Brooks-Gunn J. Neighborhood structural inequality, collective efficacy, and sexual risk behavior among urban youth. *Journal of health and social behavior.* 2008;49(3):269-285.

53. Carlson DL, Bellair PE, McNulty TL. Duration-Weighted Exposure to Neighborhood Disadvantage and Racial-Ethnic Differences in Adolescent Sexual Behavior. *Journal of Health and Social Behavior.* 2022;63(1):71-89.

54. Maruschak LM, Beavers R. HIV in Prisons, 2007–08. *Washington, DC: US Department of Justice, Bureau of Justice Statistics.* 2009.

55. Woodring J, Kruszon-Moran D, McQuillan G. HIV Infection in US Household Population Aged 18-59: Data From the National Health and Nutrition Examination Survey, 2007-2012. *Natl Health Stat Report.* 2015(83):1-13.

56. Bauermeister JA, Zimmerman MA, Caldwell CH. Neighborhood disadvantage and changes in condom use among African American adolescents. *Journal of Urban Health.* 2011;88:66-83.

57. Kerrigan D, Witt S, Glass B, Chung S-e, Ellen J. Perceived neighborhood social cohesion and condom use among adolescents vulnerable to HIV/STI. *AIDS and Behavior.* 2006;10:723-729.

58. *National Snapshot: Poverty among Women and Families, 2020.* National Women's Law Center;2020.

59. Artiga S, Foutz J, Damico A. Health coverage by race and ethnicity: Changes under the ACA. *Henry J Kaiser Family Foundation.* 2018.

60. Hall KS, Moreau C, Trussell J. Discouraging trends in reproductive health service use among adolescent and young adult women in the USA, 2002–2008. *Human Reproduction (Oxford, England).* 2011;26(9):2541.

61. Fuentes L, Ingerick M, Jones R, Lindberg L. Adolescents' and young adults' reports of barriers to confidential health care and receipt of contraceptive services. *Journal of Adolescent Health.* 2018;62(1):36-43.

62. Lee C, Ayers SL, Kronenfeld JJ. The association between perceived provider discrimination, health care utilization, and health status in racial and ethnic minorities. *Ethnicity & disease.* 2009;19(3):330.

63. UNESCO. Comprehensive Sexuality Education: A Foundation for Life and Love. 2021.

64. Guttmacher. Sex and HIV Education. https://www.guttmacher.org/state-policy/explore/sex-and-hiv-education. Published 2023. Updated 1 July 2023. Accessed.

65. Lindberg LD, Kantor LM. Adolescents' Receipt of Sex Education in a Nationally Representative Sample, 2011–2019. *Journal of Adolescent Health.* 2021.

66. Rabbitte M. Sex education in school, are gender and sexual minority youth included?: A decade in review. *American journal of sexuality education.* 2020;15(4):530-542.

67. Bridges E, Alford S. Comprehensive Sex Education and Academic Success: Effective Programs Foster Student Achievement. The Facts. *Advocates for Youth.* 2010.

68. Mustanski B. Ethical and regulatory issues with conducting sexuality research with LGBT adolescents: A call to action for a scientifically informed approach. *Archives of sexual behavior.* 2011;40:673-686.

69. Guidelines for comprehensive sexuality education. Sexuality Information and Education Council of the United States. https://siecus.org/wp-content/uploads/2018/07/Guidelines-CSE.pdf. Published 2004. Accessed.

70. Steinke J, Root-Bowman M, Estabrook S, Levine DS, Kantor LM. Meeting the needs of sexual and gender minority youth: formative research on potential digital health interventions. *Journal of Adolescent Health.* 2017;60(5):541-548.

71. USDHHS USDoHaHS. *Proposed Objectives for Inclusion in Healthy People 2030.*

72. CDC CfDCaP. *Incidence, Prevalence, and Cost of Sexually Transmitted Infections in the United States.* 2021.

73. Klibanoff E. Texas tops the nation in teens who give birth multiple times. 2022.

74. CDC CfDCaP. Teen Birth Rate by State. https://www.cdc.gov/nchs/pressroom/sosmap/teen-births/teenbirths.htm. Published 2022. Accessed.

75. TDHHS TDoHaHS. *Sexually Transmitted Disease in Texas.* 2020.

76. SEICUS SIaECotUS. Texas' Sex Education Snapshot. 2021.

77. CDC CfDCaP. High School Youth Risk Behavior Survey: Texas 2019 Results. 2019.

78. CDC CfDCaP. High School Youth Risk Behavior Survey: Texas 2021 Results. 2021.

79. ACOG TACoOaG. Comprehensive Sexuality Education. 2020.

80. Santelli JS, Kantor LM, Grilo SA, et al. Abstinence-Only-Until-Marriage: An Updated Review of U.S. Policies and Programs and Their Impact. *Journal of Adolescent Health.* 2017;61(3):273-280.

81. Denford S, Abraham C, Campbell R, Busse H. A comprehensive review of reviews of school-based interventions to improve sexual-health. *Health Psychology Review.* 2017;11(1):33-52.

82. Bridges E, Hauser D. Sexuality Education: Building an Evidence-and Rights-Based Approach to Healthy Decision-Making. *Advocates for Youth.* 2014.

83. FoSE FoSE. National Sex Education Standards. 2020.

84. Kohler PK, Manhart LE, Lafferty WE. Abstinence-only and comprehensive sex education and the initiation of sexual activity and teen pregnancy. *Journal of adolescent Health.* 2008;42(4):344-351.

85. Kirby DB. The impact of abstinence and comprehensive sex and STD/HIV education programs on adolescent sexual behavior. *Sexuality Research & Social Policy.* 2008;5:18-27.

86. Goldfarb ES, Lieberman LD. Three decades of research: The case for comprehensive sex education. *Journal of Adolescent Health.* 2021;68(1):13-27.

87. TEA. Laws and Rules. Texas Education Agency. https://tea.texas.gov/about-tea/laws-and-rules#:~:text=The%20Texas%20Education%20Code%20includes%20all%20laws%20and,in%20whole%20or%20part%20by%20state%20tax%20funds. Published 2022. Accessed.

88. Education Code. https://texas.public.law/statutes/tex._educ._code_section_28.004. Published 2021. Accessed.

89. Rivera E. Texas got a sex ed update, but students and educators say there's still a lot missing. National Public Radio. https://www.npr.org/sections/health-shots/2022/04/30/1094446995/texas-got-a-sex-ed-update-but-students-and-educators-say-theres-still-a-lot-miss. Published 2022. Accessed.

90. TEA. TEKS Review and Revision. Texas Education Code. https://tea.texas.gov/academics/curriculum-standards/teks-review/teks-review-and-revision#:~:text=The%20State%20Board%20of%20Education%20%28SBOE%29%20has%20legislative,area.%20Subscribe%20to%20updates%20from%20TEA.%20TEKS%20Review. Published 2022. Accessed 9 January 2023.

91. TEA. Texas Essential Knowledge and Skills for Health Education. In: Texas Education Agency 2020.

92. Swaby A. Texas education board approves new sex ed policy that does not cover LGBTQ students or consent. The Texas Tribune. https://www.texastribune.org/2020/11/18/Texas-sex-education-LGBTQ/. Published 2020. Accessed 9 January, 2023.

93. Sandelowski M. Whatever happened to qualitative description? *Research in Nursing & Health.* 2000;23(4):334-340.

94. Neergaard MA, Olesen F, Andersen RS, Sondergaard J. Qualitative description – the poor cousin of health research? *BMC Med Res Methodol.* 2009;9(1):52.

95. Sofaer S. Qualitative methods: what are they and why use them? *Health Serv Res.* 1999;34(5 Pt 2):1101-1118.

96. Longhurst R. Semi-structured Interviewing and Focus groups. In: Clifford NJ, French S, Valentine G, eds. *Key methods in geography.* 2nd ed ed. London: SAGE; 2010.

97. *NVivo 12* [computer program]. 2017.

98. Leos C, Wiley D. “It falls on all our shoulders”: Overcoming Barriers to Delivering Sex Education in West Texas Schools. *Journal of Applied Research on Children: Informing Policy for Children at Risk.* 2019;10(2):4.

99. Wilson KL, Wiley DC, Rosen B. Texas Sexuality Education Instruction: Shame and Fear-Based Methodology. *Journal of Health Education Teaching.* 2012;3(1):1-10.

100. Guiding Principles for Ethical Research: Pursuing Potential Research Participants Protections. National Institutes of Health. https://www.nih.gov/health-information/nih-clinical-research-trials-you/guiding-principles-ethical-research. Updated 16 March 2016. Accessed 5 July, 2023.

101. Sexual Assault. Office on Women's Health in the U.S. Department of Health and Human Services. https://www.womenshealth.gov/relationships-and-safety/sexual-assault-and-rape/sexual-assault. Updated 30 December 2022. Accessed 5 July, 2023.

102. Kearl H. The facts behind the# metoo movement: A national study on sexual harassment and assault (executive summary). 2018.

103. Fast Facts: Preventing Sexual Violence. Centers for Disease Control and Prevention. https://www.cdc.gov/violenceprevention/sexualviolence/fastfact.html. Updated 22 June 2022. Accessed 5 July, 2023.

104. Sinozich S, Langton L. *Rape and sexual assault victimization among college-age females, 1995-2013.* US Department of Justice, Office of Justice Programs, Bureau of Justice …; 2014.

105. WMA Declaration of Helsinki- Ethical Principles for Medical Research Involving Human Subjects. World Medical Association. https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/. Accessed 16 July, 2023.

106. Institutional Review Board (IRB) Written Procedures: Guidance for Institutions and IRBs. U.S. Department of Health and Human Services. https://irbo.nih.gov/confluence/display/ohsrp/IRBO+Office. Updated 2 August 2016. Accessed 5 July, 2023.

107. Shivayogi P. Vulnerable population and methods for their safeguard. *Perspect Clin Res.* 2013;4(1):53-57.

108. Mandatory State Reporting Requirements. Duke University Health System. https://irb.duhs.duke.edu/sites/default/files/2022-04/mandatory_state_reporting_requirements_2-8-2021.pdf. Accessed 7 July, 2023.

109. IRB Guidelines for Reporting Suspected Abuse or Neglect of Children, Elderly Individuals, and Dependent Adults. California State University. https://www.csusm.edu/gsr/irb/documents/policy_guidelines/abuse_reporting_guide.pdf. Updated 11 September 2012. Accessed 2023, 7 July.

110. Understanding Consent. https://www.rainn.org/understanding-consent. Accessed 2023, 16 July.

111. Consent Laws. RAINN. https://apps.rainn.org/policy/compare/consent-laws.cfm. Updated March 2020. Accessed 7 July, 2023.

112. Close in Age Exemptions/ Romeo and Juliet Laws. Age of Consent. https://www.ageofconsent.net/close-in-age-exemptions. Accessed 16 July, 2023.

113. What is the Legal Age of Consent in the United States? Age of Consent. https://www.ageofconsent.net/states. Accessed 16 July, 2023.

114. State by State Guide on Statutes of Limitations. RAINN. https://www.rainn.org/state-state-guide-statutes-limitations#:~:text=RAINN%E2%80%99s%20statutes%20of%20limitations%20tool%20provides%20a%20visual,limitations.%20RAINN%E2%80%99s%20tool%20considers%20the%20following%20four%20questions%3A. Accessed 16 July, 2023.

115. Kortsmit K, Nguyen AT, Mandel MG, et al. Abortion Surveillance—United States, 2020. *MMWR Surveillance Summaries.* 2022;71(10):1.

116. Choi AC, D. . See where abortions are banned and legal — and where it's still in limbo. 2023.

117. Romanis EC. The end of (reproductive) liberty as we know it: A note on Dobbs V. Jackson Women's Health 597 USC __ (2022). *Medical Law International.* 2023;23(1):71-87.

118. Dobbs v. Jackson Women's Health Organization, 597 U.S. ___ (2022). In.

119. Texas Senate Bill 8. In.

120. Defense of Life Act.

121. Health UDo, Services H. Code of federal regulations: Protection of human subjects. In: Retrieved July; 2011.

122. CHAPTER 1. Rape, Abduction, Carnal Abuse of Children, and Seduction. In.

123. Child Abuse and Neglect Reporting Act 11165.7. In.

124. Child Abuse and Neglect Reporting Act 11166. In.

125. Education Amendments Act of 1972. In.

126. *Sexual Harassment Guidance.* U.S. Department of Education.

127. Title IX Compliance Guide for Mandatory Reporters. Purdue University. Accessed 18 January, 2024.

128. What to Expect When a Title IX Report is Filed. Michigan Technological University. Updated 27 August, 2021. Accessed 19 January, 2024.

129. Woman's Right to Know Act. In.

130. *Congenital Syphillis in Texas in 2022.* Department of State Health Services.

131. *Texas STD Surveillance Report: 2020 Annual Report.*

132. Natality, 2007-2022 Request. https://wonder.cdc.gov/controller/datarequest/D66. Accessed.

133. Pazol K, Daniels K, Romero L, Warner L, Barfield W. Trends in Long-Acting Reversible Contraception Use in Adolescents and Young Adults: New Estimates Accounting for Sexual Experience. *J Adolesc Health.* 2016;59(4):438-442.

134. Garnett C, Pollack L, Rodriguez F, Renteria R, Puffer M, Tebb KP. The Association Between Nonbarrier Contraceptive Use and Condom Use Among Sexually Active Latina Adolescents. *Journal of Adolescent Health.* 2021;68(5):985-990.

135. Hickey MT, Cleland C. Sexually transmitted infection risk perception among female college students. *Journal of the American Association of Nurse Practitioners.* 2013;25(7):377-384.

136. Schaefer R, Thomas R, Maswera R, Kadzura N, Nyamukapa C, Gregson S. Relationships between changes in HIV risk perception and condom use in East Zimbabwe 2003–2013: population-based longitudinal analyses. *BMC Public Health.* 2020;20(1):756.

137. Mehrotra P, Noar SM, Zimmerman RS, Palmgreen P. Demographic and personality factors as predictors of HIV/STD partner-specific risk perceptions: implications for interventions. *AIDS Educ Prev.* 2009;21(1):39-54.

138. CDC CfDCaP. *HIV Surveillance Report, 2018 (Updated).* 2020.

139. Social Determinants of Health. World Health Organization. https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1. Published 2024. Accessed.

140. WHO WHO. A Conceptual Framework for Action on the Social Determinants of Health. https://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf. Published 2010. Accessed.

141. Crooks N, Wise A, Frazier T. Addressing sexually transmitted infections in the sociocultural context of black heterosexual relationships in the United States. *Social Science & Medicine.* 2020;263:113303.

142. Pequegnat W, Stover E. Considering women's contextual and cultural issues in HIV/STD prevention research. *Cultural Diversity and Ethnic Minority Psychology.* 1999;5(3):287-291.

143. Guttmacher. Sex and HIV Education. https://www.guttmacher.org/state-policy/explore/sex-and-hiv-education. Published 2021. Accessed.

144. Gavey N, McPhillips K, Doherty M. "If it's not on, it's not on"—or is it? Discursive constraints on women's condom use. *Gender & Society.* 2001;15(6):917-934.

145. Jarama SL, Belgrave FZ, Bradford JB, Young M, Honnold JA. Family, cultural and gender role aspects in the context of HIV risk among African American women of unidentified HIV status: An exploratory qualitative study. *AIDS Care.* 2007;19:307 - 317.

146. Fantasia HC. Influences of Social Norms and Context on Sexual Decision Making Among Adolescent Women. *Journal of Midwifery & Women's Health.* 2011;56(1):48-53.

147. East L, Jackson D, O'Brien L, Peters K. Condom negotiation: experiences of sexually active young women. *J Adv Nurs.* 2011;67(1):77-85.

148. Physical Intimate Partner Violence and Contraceptive Behaviors Among Young Women. *Journal of Women's Health.* 2018;27(8):1016-1025.

149. Charmaz K. *Constructing grounded theory.* sage; 2014.

150. Bureau USC. QuickFacts: Harris County. 2021.

151. Medicine BCo. Teen Health Clinic. 2021.

152. Cohen, Crabtree. Qualitative Research Guidelines Project. http://www.qualres.org/HomeSemi-3629.html. Published 2006. Accessed.

153. Bolton M, McKay A, Schneider M. Relational influences on condom use discontinuation: A qualitative study of young adult women in dating relationships. *The Canadian Journal of Human Sexuality.* 2010;19(3):91.

154. Hernandez CA. Theoretical coding in grounded theory methodology. *Grounded Theory Review.* 2009;8(3).

155. Chun Tie Y, Birks M, Francis K. Grounded theory research: A design framework for novice researchers. *SAGE Open Med.* 2019;7:2050312118822927-2050312118822927.

156. Meier A, Hull KE, Ortyl TA. Young Adult Relationship Values at the Intersection of Gender and Sexuality. *Journal of Marriage and Family.* 2009;71(3):510-525.

157. Woolf SE, Maisto SA. Gender Differences in Condom Use Behavior? The Role of Power and Partner-Type. *Sex Roles.* 2008;58:689-701.

158. Teitelman AM, Calhoun J, Duncan R, Washio Y, McDougal R. Young women's views on testing for sexually transmitted infections and HIV as a risk reduction strategy in mutual and choice-restricted relationships. *Appl Nurs Res.* 2015;28(3):215-221.

159. Teitelman AM, Ratcliffe SJ, Cederbaum JA. Parent—Adolescent Communication About Sexual Pressure, Maternal Norms About Relationship Power, and STI/HIV Protective Behaviors of Minority Urban Girls. *Journal of the American Psychiatric Nurses Association.* 2008;14(1):50-60.

160. Hutchinson M. The Influence of Sexual Risk Communication Between Parents and Daughters on Sexual Risk Behaviors*. *Family Relations.* 2004;51:238-247.

161. Sexually Transmitted Infections Surveillance 2022. Centers for Disease Control and Prevention. https://www.cdc.gov/std/statistics/2022/overview.htm. Published 2024. Accessed.