

**Comprehensive Sexual Education: The Influence of its Implementation on Rural
Adolescents: A Literature Review**

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INFLUENCE OF COMPREHENSIVE SEXUAL EDUCATION IN RURAL AREAS

Research Question: How do comprehensive sexual education (CSE) programs, limited resources, and cultural attitudes impact rural adolescents' knowledge of STIs, sexual behaviors, and reproductive health?

Abstract

Sexually transmitted infections (STIs) are a significant global health issue, particularly among adolescents. This literature review examines how CSE programs can reduce STI rates in rural communities, despite the geographical, economic, and sociocultural factors that hinder their effectiveness. This review emphasizes the need for CSE programs in rural regions, while fostering open conversations about sexual health and pushing for the inclusion of CSE in school curriculums. Cohesive, school-based curriculum will ensure all adolescents, even those living in rural regions, receive the necessary education to make informed reproductive health decisions.

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Introduction

Sexually transmitted infections (STIs) are viruses, bacteria, fungi, or parasites that individuals can contract through sexual contact (CDC, n.d.). They can be spread through sexual contact, but transmission also occurs from mother-to-child during the gestational period, childbirth, or breastfeeding (WHO, n.d.). Although there are many pathogens associated with STIs, there are four curable and four incurable pathogens with the most incidence rates. The four curable pathogens are syphilis, gonorrhea, chlamydia, trichomoniasis (WHO, n.d.). Pathogens such as Hepatitis B, herpes simplex virus (HSV), HIV, and human papillomavirus (HPV) are incurable as of present day (WHO, n.d.). In 2020, the World Health Organization estimated 374 million new cases of the four curable STIs (WHO, n.d.). In 2022, the organization estimated that 254 million individuals were living with Hepatitis B - which resulted in about 1 million deaths that same year (WHO, n.d.). Individuals living with STIs can experience intense pain in the infected areas (Chia, 2024). This causes the possibility of becoming bedridden and unable to complete daily activities (Chia, 2024). Amongst pregnant women with untreated syphilis, 80% of the pregnancies result in stillbirths or congenital syphilis within the newborn (NIH, 1997). In the U.S., about \$10 billion is spent combating STIs, which causes both health and economic burdens for Americans (NIH, 1997). On a more global level, the incidence and prevalence of STIs continue to grow, especially within the young adult and adolescent population (USA FACTS, 2023).

Among adolescents, the amount of STI cases is cause for growing concern. Sexually transmitted infections are the most prevalent in African, Caribbean, and Eastern European regions, but transpire globally (WHO, 2005). In the United States alone, there are approximately 20 million cases of STIs with half of the cases transpiring among individuals aged 15-24 years

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(Shannon et al., 2018). A number of factors contribute to the number of STIs among the younger population (WHO, 2005). These factors range from sex and condom use to frequency and preferred sexual partners during intercourse (WHO, 2005). Among adolescents, sex workers and males who have sex with other males have high rates of STIs. Similarly, those who have dropped out of school, are unhoused, or live in correctional homes also have a higher risk (WHO, 2005). These risk factors can be linked to sociocultural and economic situations as many adolescents find themselves in these situations (WHO, 2005).

In rural areas - defined as any territory not in an urban area (National Agricultural Library, n.d.) - the growing scarcity of different health care services is causing significant limitations when it comes to the prevention and treatment of sexually transmitted infections (Valentine et al., 2022). In the US, local health departments are at the forefront for dealing with STI cases yet are met with disparities when it comes to dealing with them (Valentine et al., 2022). These disparities could be attributed to limited access to healthcare, distance from care, stigma, and lack of education (Academicmed, n.d.) . Some economic barriers contributing to the disparities include test cost and a lack of health insurance (Academicmed, n.d.).

With poor health in rural America, health care providers find themselves facing challenges concerning the delivery of quality healthcare in rural, minority communities, indicating that location is important regarding one's health (Valentine et al., 2022). Across the southern region of the United States, chlamydia and gonorrhea consistently have the highest incidence rates compared to other regions (Shannon et al., 2018). Sexually transmitted infections rates for adolescents and young adults are high nationally, but there seems to be a noticeable difference regarding the behavioral risk factors in the rural adolescents compared to their urban counterparts (Valentine et al., 2022). About 39-44% of sexually active adolescents living in rural

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areas reported having intercourse before the age of 14. About half reported a varied use of condoms, ranging from inconsistent to no use at all (Valentine et al., 2022). One-third of the adolescents reported having four or more sexual partners in their lifetime (Valentine et al., 2022). In small, rural communities, where relationships may start to converge between the lines of personal and professional, there is sometimes a lack of anonymity, causing the effect of stigma to heighten, leading to resistance and denial of these infections (Valentine et al., 2022).

Overall, evaluated CSE programs have shown delays in onset sexual activities, reduced frequency of sexual activity and partners, and increase in contraceptive use (Advocates, n.d.). It was found that teens who received CSE were 60% less likely to participate in unprotected sex (Advocates, n.d.). The decision to teach sexual education in school is given to the state and local bodies (Cowsert, 2024). This allows schools to teach abstinence-only programs, which can be ineffective and inaccurate (Advocates, n.d.). Evaluations of publicly funded abstinence-only programs – in 13 different states – showed no positive changes in behavior (Advocates, n.d.). Abstinence-only programs have not proven to help adolescents decrease the number of sexual partners, reduce STI rates, or delay sex (Advocates, n.d.).

One of the many reasons why adolescents are vulnerable to STIs is because of the lack of sexual education surrounding it (WHO, 2005). In rural communities, this can be attributed to the resistance in acknowledging the existence of STIs (Valentine et al., 2022). On a national level, many adolescents do not have access to proper and affordable care, which is only exacerbated in rural areas (WHO, 2005). Many of these communities need comprehensive sexual education (CSE) programs (WHO, 2005). A comprehensive sexual education program gives adolescents age-appropriate information regarding their sexual and reproductive health (WHO, 2005).

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Comprehensive sexual education programs are most effective before the initiation of sexual activity (AAP, n.d.). These programs also reduce the rates of sexual activity, sexual risk behaviors, STIs, and adolescent pregnancy (AAP, n.d.).

Gaps in Literature

A notable gap in literature from this review is the lack of information regarding how sexual interventions work and access to SRH services, specifically for international adolescents living in rural areas (WHO, n.d.). Rural adolescents in international regions may experience higher rates of STIs and other sexual health matters due to the absence of effective SRH services addressing specific needs (WHO, n.d.). Further work can be done to connect these gaps by addressing common barriers to SRH services, as well as ensuring all adolescents, regardless of their location, receive the quality comprehensive sexual education they need (AAP, n.d.). One way all adolescents can get the information and resources they need is by de-stigmatizing the idea of learning about sexual health (Valentine et al., 2022). While other geographical locations are less stringent, they are providing adequate information to their adolescents while others are being disserved. Once the stigma is removed, there should be less resistance to teaching sexual education (Valentine et al., 2022). The World Health Organization can therefore mandate a required curriculum for younger adolescents (UNESCO, n.d.). Having comprehensive sex education improves the lives of adolescents, and having a mandated curriculum ensures every child has an equal level of information. To strengthen the evidence based on CSE programs, further research needs to be done on the role of CSE – in terms of improving behavior and reaching self-efficacy, the effectiveness of implementation, and how CSE programs work in the practical setting (UNESCO, n.d.).

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The aim of this study is to analyze how CSE programs, limited resources, and cultural beliefs impact rural adolescents' reproductive health.

Methods

In this literature review, the articles used were from the PubMed and CINAHL databases. The searches were centered around the implementation of comprehensive sexual education programs among adolescents in rural areas. PubMed is managed by the U.S. National Library of Medicine (NLM) and contains articles on health and medicine. The CINAHL database – Cumulative Index to Nursing and Allied Literature – is another credible research site to utilize. This database specializes in peer-reviewed journals and articles. Both databases offer up-to-date access to full text articles about STIs and CSE programs, ensuring the most relevant research is being utilized. The process of selecting the articles used in this literature review has been detailed and organized in *Figure 1*.

In the selection process for the PubMed database, the search for “Comprehensive sex education” resulted in 3,372 articles. This resulted in the articles within the PubMed database that mentioned “comprehensive sex education” in their article – regardless of the specific topic. The next search was “Comprehensive sex education” AND “rural areas” which further narrowed down the articles to 66. The specific use of rural areas ensured the articles would coincide with the research question and no other locations. Because of the vast range of the PubMed database, the articles procured information from both a national and international standpoint. The next search was “Comprehensive sex education” AND “rural areas” AND “full text” AND “last five years,” which resulted in 51 articles. The inclusion of “full text” and “last five years” ensured the articles used in this literature review would be relevant and include all the information that may

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be needed. The use of five years instead of ten was to ensure a narrower range of articles. The last search was “Comprehensive sex education” AND “rural areas” AND “full text” AND “last five years” AND “adolescents,” which resulted in 16 articles. Including the term adolescents established the desired population for this literature review. Five of the 16 articles produced were used in this literature review.

In the selection process from the CINAHL database, the first search was “Comprehensive sexual education” which yielded 1,131 results. The change from “sex” in the PubMed database to “sexual” in the CINAHL shows a narrowed range of results, but this could be confounded by the use of different databases. The second search was “Comprehensive sexual education” AND “adolescents” which yielded 401 articles. The third search was “Comprehensive sexual education” AND “adolescents” AND “rural” which yielded in 35 articles. The use of “adolescents” and “rural” in the latter two searches ensured the articles aligned with the population of the research question. The last search was refined using “limit to academic journals” and restricting publication dates from 2014 to 2024, which resulted in 29 articles. Five of the 29 articles produced were used in this literature review.

Inclusion and Exclusion Criteria

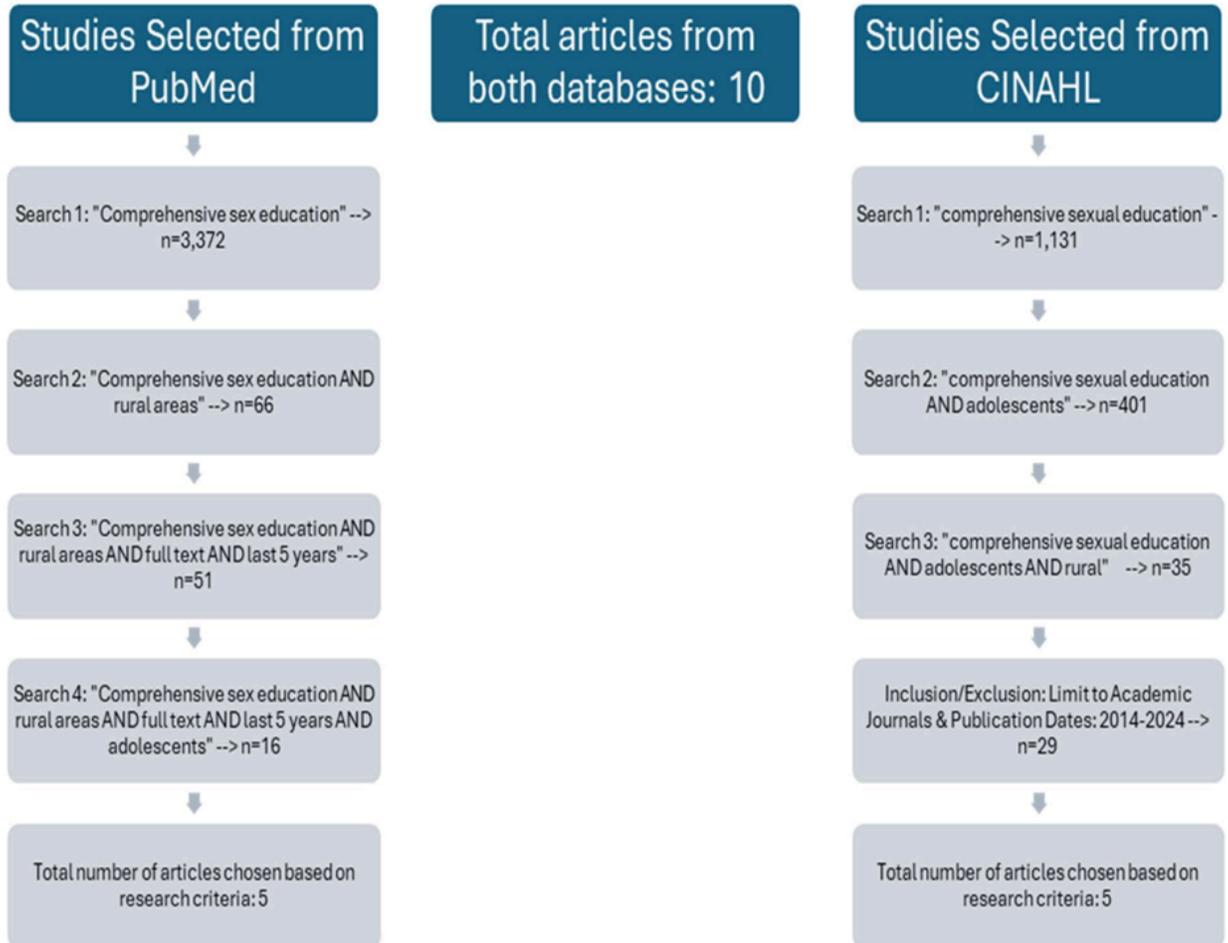
Given the specific nature of the research question, one key inclusion criterion was the target population. The study focused on adolescents - a crucial demographic for sexual education interventions - to which both databases narrowed accordingly to align with research objectives. The second inclusion factor was the geographical setting. The review focuses on how comprehensive sexual education programs affect STI rates among rural adolescents. Therefore, only articles that addressed CSE in rural areas were selected.

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Exclusion criteria narrowed the selection process by eliminating articles that lacked a focus on comprehensive sexual education, did not target adolescents in rural areas, and were non-peer-reviewed sources. Only peer-reviewed academic journals published after 2014 were included to ensure the research reflects current trends in the community.

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Figure 1: The Article Selection Process



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Results

The aim of the literature review is to examine the rates of sexually transmitted infections among rural adolescents when comprehensive sexual education programs and barriers are involved. The articles selected for this literature review aided in providing context for three overarching themes selected to be reviewed. The first finding was centered around the relationship between rural residents and sexual education. The second finding was the consequences surrounding the lack of CSE programs among rural areas *because* of the relationships previously stated. The third finding was how the CSE programs aided in reducing STIs rates and educating the rural adolescents when implemented. *Table 1* provides context and detail regarding the information from the articles selected.

Rural Ideologies

Most of the articles selected for this literature review centered on rural areas not having a good relationship with CSE programs, whether because of a lack of resources, or the overall denial when it comes to STIs. When adults communicate about sexual health topics with adolescents, there is evidence of improved sexual health behaviors, yet communication seldom happens in rural areas (Yoost et al., 2021).

In some rural areas, the information being given to students is at the teacher's discretion (Zulu et al., 2019) This entails the possibility of withheld information from learners, the idea of solely using abstinence, or no information being given at all (Zulu, et al., 2019). In other rural areas, there are significant gaps within the quality of education and resources provided to adolescents. One study found that only 16.6% of subjects rated their sexual education as "high quality," while 45.8% described it as "low quality" (Yoost et al., 2021). Less than half of the

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participants did not feel the sex education they were receiving was up to par (Yoost et al., 2021). The other participants reported they never received a talk from parents about contraceptives, STIS, or other topics pertaining to sexual health (Yoost et al., 2021). This is cause for concern as rural adolescents tend to have less knowledge about reproductive health topics compared to their urban counterparts (Phongluxa et al., 2020). Overall teaching quality can also be seen as problematic (Phongluxa et al., 2020). In some rural parts of Cambodia, social norms and cultural values shape the adolescents' views on sex (Yang et al., 2024). The men view sex as a pleasurable activity, while the women are taught to view it more conservatively – often as a familial duty (Yang et al., 2024). This demonstrates a need in CSE programs that will challenge these societal norms. To reduce the rates of STIs, HIV, and teenage pregnancy, quality CSE programs must be implemented, with a larger emphasis in rural areas where sexual health services are insufficient (Yang et al., 2024).

Barriers of CSE

Rural teenagers lack access to sexual education resources. This makes them less likely to seek out sexual and reproductive health (SRH) services (Berglas et al., 2022). About 20% of adolescents receive their information from media sources, but often those sources are not 100% accurate (Mu et al., 2015). Factors such as a scarcity of skilled professionals, expensive services, and judgment can also impede the ability of adolescents to learn about sexual health (Habte & Dessu, 2023). In one study, only 6.8% of the participants knew of the recommended SRH services provided by the World Health Organization (Habte & Dessu, 2023). In another study, 20% participants reported having no knowledge of HIV or access to SRH services (Mu et al., 2015). This lack of information further demonstrates the disservice to rural adolescents, proving the need for CSE programs.

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Implementation of CSE Programs

The findings highlight the significant impact of school-based education, particularly Comprehensive Sexuality Education (CSE) programs, on rural youth populations. Economic support alone has been shown to reduce sexual activity, but when combined with CSE programs, the reduction is even greater (Hegdahl et al., 2022). Involving community members in these programs further enhances their effectiveness, leading to improved sexual behaviors among adolescents (Hegdahl et al., 2022). Additionally, among rural teenagers, CSE increased awareness of SRH risks (Kemigisha et al., 2019). These findings further showcase the critical role CSE programs play in improving sexual behaviors among rural adolescents.

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Table 1: Detailed Summary of Articles Reviewed

	Author	Publication Date	Purpose of Article	Sample Description	Type of Research	Research Findings	Limitations
1	1. Yoost, J. 2. Ruley, M. 3. Durfee, L.	2021	Assess the accuracy and feasibility of a self-study website for comprehensive sex education.	24 subjects – 14 undergraduate and 10 physicians.	Self-Study Website.	Out of all subjects, 4 (16.6%) reported their sex education experience to be “High quality,” while 11 (45.8%) reported it to be “low quality,” and 8 (33.3%) were neutral. This study demonstrates that among a group of physicians and college freshman, a self- study website was an accurate and appealing way to teach sex education.	A smaller sample size. Likert Scale questions with 3 or 4 points may also limit the findings.
2	1.Phongluxa, K. 2.Langeslag, G. 3. Jat, T.R. 4. Kounnavong, S. 5. Khan, M. 6. Essink, D.	2020	The purpose of the article is to provide a comprehensive exploration of factors that influence SRH knowledge, attitudes, and practices of adolescents in Bokeo Province, Lao PDR.	837 adolescents aged 10-19.	Using data from the Adolescent Girl Situation Analysis cross-sectional study.	Adolescents living in the rural districts being studied have lower reproductive health knowledge than urban districts. The current teaching quality was quite problematic. Strong positive association between knowledge and autonomy.	Correlation, not causation could be established. Given the option to skip questions which could have led to underreporting.
3	1. Yang, Y. 2. Kim, J. 3. Park, G. 4. Thapa, R.	2024	Explore the perspectives and interpretations of sex held by Cambodian adolescents within the context of their social norms and culture.	91 Cambodian adolescents aged 15 to 19 years were recruited from the rural area.	Qualitative research design was used to conduct in-depth interviews.	Cambodian adolescents' perspectives and interpretations of sex were deeply influenced by their social norms and cultural values. Men typically perceived sex	Interviewed adolescents in rural areas only. Maybe having a non-Cambodian researcher.

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						<p>through the lens of instinct and pleasure, while women often emphasized a deep sense of familial duty and held premarital sex to be morally unacceptable.</p> <p>To prevent HIV, STIs, and teenage pregnancy, there is a need for comprehensive sexual education promoting healthy attitudes towards sexuality and practicing protected sex.</p>	
4	<p>1. Zulu, J.M. 2. Bylstad, A. 3. Haaland, M. 4. Michelo, C. 5. Haukanes, H. 6. Moland, K.M.</p>	2019	<p>This paper explores how teachers perceive the curriculum and practice discretion when implementing the CSE in mid-level schools in Nyimba district in Zambia.</p>	<p>Teachers from six different schools (18 in total).</p>	<p>Using a case study design, data were collected through in-depth interviews with 18 teachers and analyzed thematically drawing upon theories of discretion and policy implementation.</p>	<p>Individual teachers make decisions on their own regarding what and when to teach CSE. This discretion implies holding back information from the learners, teaching abstinence as the only way of preventing pregnancy or canceling sexuality education sessions altogether.</p> <p>Use of discretion has resulted in arbitrary teaching thus affecting the acquisition of comprehensive sexual and reproductive health knowledge among learners.</p>	<p>The CSE had limited legitimacy in the community and was met with resistance from teachers tasked with its implementation.</p>
5	<p>1.Harris, T. 2.Shields, A. 3.DeMaria, A.</p>	2021	<p>The purpose of this study was to explore the perceptions of current sex education among rural young people.</p>	<p>Rural young people aged 14-18 years – high school in Indiana located in a town with 16,000 residents.</p>	<p>Web-based surveys.</p>	<p>School-based sex education is an important resource for Indiana’s rural youth population. Given the limited resources rural adolescents have to attain optimal sexual health, school-based sex education offers a vital</p>	<p>Only one state, so results cannot be generalized. Research took place in an area where rates of STDs and teenage births were higher than the state average, again limiting generalizability.</p>

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						first line of defense against poor sexual health outcomes.	
6	1. Berglas, N. 2. Yang, C. 3. Gutmann- Gonzalez, A. 4. Decker, M.J.	2022	Aims to address the gap in research on the need for and content of booster sexual health education by centering the perspectives of young people and the professionals who support them.	In rural California - six focus groups with young people (N = 22, ages 14–20); key informant interviews with youth-serving professionals (N = 10)	Semi-structured guides for both the focus group and the key informant interviews. Only a few participants could name specific content such as abstinence, condoms and contraceptive methods, consent, and accessing sexual health services.	Youth growing up in rural areas have fewer opportunities and resources and are less likely to know about and seek out sexual health services.	Use of online video software may have limited participation, rapport and discussion, and the findings may reflect these gaps. Findings were likely also affected by the pandemic itself.
7	1. Habte, A. 2. Dessu, S.	2023	Aimed at assessing the understanding of the elements of sexual and reproductive health (SRH) services and its determinants among adolescents residing in rural districts of Guraghe zone, Southern Ethiopia.	A sample of randomly selected adolescents in the rural districts of the Guraghe zone (N = 1028). Excluded residents who lived in the area for less than six months.	A community-based cross-sectional study.	Only 69 of the adolescents (6.8%) received all the key elements. This would suggest that the majority of adolescents in the study area did not have the WHO-recommended content of SRH services. Taking into account the different components of care, the delivery of comprehensive sexuality education (CSE) was the most common item received by adolescents (55.1%), followed by the VCT service (51.0%). While relatively few respondents (25.9%) were provided with contraceptive information and services. Respondents mentioned a lack of skilled healthcare providers, the high cost of facilities and goods and services, the lack of separate youth rooms, and healthcare providers'	This is the first study of its kind to comprehensively assess the determinants of SRH practice in this area of study and at the country level. Self-reporting - the chance of having social desirability bias contributing to the under-reporting of the SRH values. The possibility of incurring recall bias because of some events that have occurred before the study.

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						judgment as barriers to using SRH services.	
8	<ol style="list-style-type: none"> 1. Mu, W. 2. Zhao, Y. 3. Knoshood, K. 4. Cheng, Y. 5. Sun, X. 6. Liu, X. 7. Xu, W. 8. Wang, S. 9. Ma, Y. 10. Zhang, F. 	2015	The aim of this study was to assess the knowledge of SRH and HIV among perinatally HIV-infected adolescents (PHIVA).	124 PHIVA patients attending quarterly medical visits.	Descriptive cross-sectional study with a structured questionnaire.	<p>Among participants, 79% had never discussed puberty development or sexuality with parents. Over 50% had never heard of condoms and 20% reported not having any informational source of SRH and HIV knowledge.</p> <p>Only one-third of adolescents knew basic knowledge of SRH and HIV, and they were the older children over age of 15.</p> <p>Most PHIVA did not report having access to comprehensive information on SRH and HIV, in part because of the early death of caretakers or unfavorable family status.</p> <p>The most common sources were from people other than parents (40%) and media sources (20%).</p>	<p>There is no standard questionnaire to assess SRH knowledge in youth in China, but references were made from the WHO survey instrument and adapted it to local rural context.</p> <p>Some questions may have been too ambiguous or hard for adolescents to fully understand.</p> <p>Participants' literacy may also influence their understanding since some of them had dropped out of school.</p> <p>Cannot be generalized to all the HIV-infected adolescents in China, many of whom do not live in rural China.</p>
9	<ol style="list-style-type: none"> 1. Hegdahl, H.K. 2. Musonda, P. 3. Svanemyr, J. 4. Zulu, J.M. 5. Grønvik, T. 6. Jacobs, C. 7. Sandøy, I.F. 	2022	The purpose of this study was to showcase the effects of economic support, comprehensive sexuality education (CSE) and community dialogue on sexual activity, contraceptive use and beliefs among adolescent girls in rural Zambia.	Recruited 157 schools in 2016, and all girls from grade seven were invited to participate.	A baseline interview was conducted face-to-face, and included questions on previous childbearing, marital status, household assets and contact information. During the trial period the participants were interviewed twice per year with questions similar to the baseline interview.	<p>This study indicates that economic support was effective in lowering recent sexual activity among adolescent girls when compared to the control. The addition of CSE and community dialogue appeared to have a small added benefit (16% reduction) on sexual activity overall, but the CSE and</p>	<p>Due to the sensitivity of the questions, self-reported data on behavior may have been affected by social desirability bias.</p> <p>Measurements on social norms in the community were not taken, but rather the participants' perceptions of such norms, thus determining</p>

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						<p>community dialogue provided a valuable added benefit (35% reduction) on the proportion of adolescent girls who reported unprotected sexual activity and on the proportion currently using modern contraceptives (26% increase), compared to economic support alone.</p> <p>Both the economic support and the CSE and community dialogue package reduced the overall risk of SRH problems because of reductions in self-reported unprotected sexual activity and improvements in current contraceptive use.</p>	<p>whether social norms in the communities really were affected by the interventions was not possible.</p>
10	<ol style="list-style-type: none"> 1. Kemigisha, E. 2. Bruce, K. 3. Ivanova, O. 4. Leye, E. 5. Coene, G. 6. Ruzaaza, G.N. 7. Ninsiima, A.B. 8. Mlahagwa, W. 9. Nyakato, V.N. 10. Michielsen, K. 	2019	<p>The purpose of this study was to evaluate the effectiveness of a Comprehensive Sexuality Education (CSE) intervention for very young adolescents (VYA) in Uganda.</p>	<p>Randomized trial of 33 randomly selected primary schools in the Mbarara district. The ages of students ranged from 9 to 12 years.</p>	<p>Mixed-method study. Cluster randomized trial, post- intervention qualitative interviews, and focus group discussions over a period of 1 year.</p>	<p>The median score for SRH knowledge changed from 8 to 12 compared to 8 to 11 in the control. On further analysis, Sexual Health Knowledge scores improved significantly more among the treatment group compared to the control group.</p> <p>The quantitative results of this study show that pupils in the intervention group were two times more likely than those in the control group to have significantly improved scores in SRH knowledge at the endline.</p>	<p>There was a short time interval between the intervention and evaluation.</p> <p>The political environment for sexuality education was prohibitive and could have affected the uptake of the information</p>

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						Although there were no differences quantitatively in sexual behavior, the qualitative data suggested changes in other behaviors related to SRH, such as behavioral intentions and increased perception of SRH related risks.	
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Discussion

The aim of this literature review was to examine how barriers and comprehensive sexual education programs influence STI rates among rural adolescents. Although some CSE programs have proven effective, many rural areas lack quality CSE for adolescents. The findings highlight the success of CSE programs, but also the economic and sociocultural barriers that accompany them.

The complex relationship between rural communities and sexual education has left many rural adolescents without sexual health knowledge. Evidence has shown a strong association between knowledge and autonomy (Phongluxa et al., 2020). When adolescents have the information they need, they can make good, informed choices regarding their health. Studies have also shown that a self-guided website is an accurate way to teach sex education (Yoost et al., 2021). When CSE programs are implemented into an adolescent's curriculum, there is evidence of lower unprotected sexual activity, which leads to lower STI cases (Hegdahl et al., 2022).

States like Rhode Island, West Virginia, and the District of Columbia have state standards that address age-appropriate topics relating to sexual health and relationships (Shapiro et al., 2022). States like New Jersey, Oregon, and California have comprehensive state regulations that ensure sex education is uniform and consistent across school districts (Shapiro et al., 2022). Oregon also set a precedent for implementing standards that required CSE in their public schools (Shapiro et al., 2022). These three states (New Jersey, Oregon, and California) have teenage pregnancy rates below the national average and are ranked 43, 40, and 18 in terms of reported gonorrhea cases – a disease with high prevalence in rural areas (CDC, 2022).

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Among other populations, CSE programs work well informing adolescents with quality information that will help them make safe and informed decisions about their health (Shapiro et al., 2022). Without these programs, information adolescents receive pertaining to sexual education may be inconsistent, misleading, or misused (Shapiro et al., 2022).

Implications

The implications of inadequate sexual education amongst a population are cause for public health concern (NCSDDC, n.d.). The findings in this literature review show the need for comprehensive sexual education in rural communities, despite the limited resources and cultural barriers. However, the review also shows how rural adolescents remain underserved due to these barriers. One way to combat these barriers is determining the most efficient delivery method. Identifying the critical factors in delivery – school environment, teacher preparedness, and community involvement – will aid in directing limited resources to improving those areas (UNESCO, n.d.).

In terms of policy implications, multifaceted approaches must be taken (NCSDDC, n.d.). For example, California implemented the California Healthy Youth Act, which ensured adolescents received important information about STIs, contraceptives, and healthy relationships (NCSDDC, n.d.). Introducing similar policies to rural areas could improve the reproductive health of many individuals (?). Policymakers could develop legislation mandating CSE programs that are medically accurate and age-appropriate, satisfying the needs of adolescents, educators, and parents (NCSDDC, n.d.).

Overall, with the appropriate funding, involvement, and policies, CSE programs can play a crucial role in improving the reproductive health of rural adolescents.

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Limitations

One limitation of this literature review is that it only utilized 10 articles. Perhaps with more articles included, there would be more evidence, beyond what was provided above, about the effectiveness of the CSE programs. Another limitation was the population of articles. Because this review used information on the national and global scale, the findings cannot be generalized to all rural adolescents, as they are not a monolith. Another limitation stems from the reliability of cross-sectional data. Using cross-sectional data limits the ability to draw long term conclusions because data is collected at a specific time of a participant's life.

Conclusion

In conclusion, this literature review examined how the implementation of comprehensive sexual education (CSE) programs, and their barriers, shape the sexual health of adolescents in rural areas. Despite evidence showcasing reduction of STI rates due to the success of CSE programs, many rural areas still lack effective programs. This could be due to stigma in certain geographical locations, or the lack of resources and information. By promoting a more open conversation around sexual health and advocating for mandated CSE curriculum, all adolescents, regardless of their geographical location, can receive the education necessary to make informed decisions about their health.

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