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Barriers and Mythical Practices of Teenagers Regarding Sexually Transmitted Infections Prevention in Rural Areas of Limpopo Province, South Africa

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Abstract: Sexually transmitted infections in South Africa are increasing at alarming rates. The study setting is no.5, with the highest STIs, pregnancy, and HIV statistics in Limpopo province among 13 to 19-year-old teenagers. This study explored preventative measures against STIs practiced by teenagers in rural areas of Limpopo Province, South Africa. The study was conducted at a selected rural-based clinic using an exploratory, descriptive qualitative research approach. Unstructured, in-depth face-to-face interviews were used to collect data from sixteen conveniently sampled teenagers aged 13 -19 who came to Manavhela Clinic for Youth Friendly Services in August/September 2022. Open-coding analysis was used to identify themes and sub-themes. Measures to ensure trustworthiness were ensured. Ethical clearance (FSH/21/PH/22/2211) was obtained, and ethics principles were observed throughout the study. Two themes emerged from data analysis: STI preventive measures practiced by teenagers and factors influencing the choice of STI preventive measures practices by teenagers. Only a few participants aged 13 and 14 years practiced abstinence and condom use. Most participants were sexually active and used mythical mixtures made from boiling aloe or morula tree, which they drank before and after sex, applying plain yogurt on the vagina once a week, OR vaginal steaming. Participants cited patriarchy, lack of sex education in rural schools, long distances to clinics, and desire to taste sex as reasons for adopting the practiced preventive measures. Risky sexual behaviour among 13 to 19-year-old teenagers is still rife in rural areas. Rural clinics in Limpopo Province should intensify STI school health education and Youth Friendly Services programs to raise awareness and improve accessibility to condoms.

Keywords: barriers; limpopo; measures; mythical; practices; prevention; rural; STIs; teenagers; villages

1. Introduction

Worrying trends in the sexual well-being of adolescents are globally increasing the prevalence rates of teenage pregnancy and STIs in specific regions [1]. Sexually Transmitted Infections (STIs) remain a public health burden to both individuals and the healthcare sector globally [2]. According to the World Health Organization (WHO) [2] fact sheet, there are more than a million estimated daily diagnoses of asymptomatic STIs globally. If untreated, they can have a detrimental effect on the sexual and general health status of individuals of all ages. An estimated 96 million incident cases of syphilis, gonorrhea, chlamydia, and trichomoniasis have been recorded among young people between the ages of 15- 49 years in the African region. STIs have been identified as a high-risk determinant for Human Immunodeficiency Virus (HIV) transmission, adult T-cell leukemia, cancers, infertility, adverse pregnancy outcomes such as pre-term birth, stillbirth, and congenital deformities [2,3].

In the South African context, studies [4–6] have demonstrated the high prevalence of STIs in both rural and urban settlements. Limpopo has also experienced an increased rate of STIs. In

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2017/2018, the Capricorn District had 69.4%, Mopani had 68,6%, Sekhukhune had 68,5%, and Waterberg had 98% [1]. Adolescents and teenagers have been recognized as one of the priority populations that are at risk of getting infected with STIs due to possible risky sexual behaviors [3,7,8], which may be because of some personal or social influences as implied by Larsson, Bowers-Sword, Narvaez, Ugarte [9] and, Nunu, Makhado, Mabunda, Lebese (10). Based on this evidence, actions have strategically taken place in different countries based on the WHO guidelines to combat the incidence and prevalence of STIs, beginning with the priority groups [1,3].

As an intervention, the South African government launched the National Adolescents and Youth Friendly Service (NAYFS), which extended to the provincial Departments of Health, including Limpopo [11,12]. The NAYFS program aimed to promote the health and well-being of youth aged 10 and 24, especially at primary healthcare (PHC) facilities [11,12]. To achieve the purpose of the program, trained peer educators situated at the designated health facilities give information on topics such as "Know your body, rights, and responsibilities of adolescents and youths, benefits of abstinence, information on HIV and AIDS, medical male circumcision, and contraceptives" [11].

Problem statement

Despite the availability of the National Adolescents and Youth Friendly Service (NAYFS), there is still an increase in the number of new STIs recorded in Limpopo province, with rural clinics having the highest statistics [1,11]. In addition, there are socioeconomic and media-circulating myths that limit the recognition of STIs as an essential public health problem and the uptake of evidence-based preventive measures. Furthermore, condom use, and the associated behavioral change are low in rural areas [1], which is cause for great concern because complications of STIs can cause health problems like cervical cancer, pelvic pains, and infertility [6]. The second author in this study is a professional nurse who works at a clinic and notices that more teenagers come to the clinic for the treatment of STIs than for condoms, which triggered a quest to conduct a study aimed at exploring the preventative measures practiced by teenagers against STIs.

Purpose

This paper investigates preventive measures teenagers practice against STIs in rural Limpopo province, South Africa.

Objectives

- To explore the preventative measures practiced by teenagers against STIs.
- To describe factors influencing the choice of STI preventive practices.

Definition of concepts

STIs, in this study, refer to HPV, HIV, syphilis, gonorrhea, chlamydia, trichomoniasis, and other infections acquired after having unprotected sex.

STI preventive practices: In the context of this study, it refers to abstinence, post-exposure prophylaxis, Condom use, and other non-specified measures.

Teenagers: In the context of this study, it can also be used interchangeably with adolescents, referring to young people between the ages of 13 and 19.

2. Materials and Methods

The Consolidated Criteria for Reporting Qualitative Research (COREQ) [13] was applied to describe the methods used in this study.

Study design

The study employed an exploratory and descriptive qualitative research design to help better understand and describe the preventative measures practiced by teenagers against STIs [14].

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Study setting

This study was conducted at Manavhela Clinic. The researcher chose Manavhela Clinic as the study setting because in her line of work as a professional nurse, she observed with concern that teenagers visit the clinic for STI treatment and not to collect condoms, which triggered her quest to understand better the preventative measures practiced by teenagers against STIs. Manavhela Clinic is located within the Collins Chabane Municipality in South Africa. The clinic falls under the Bungeni Local Area. Manavhela Clinic serves six communities: Manavhela, Tshitungulwane, Tshilaphala, Tshivhulana, Makhadzi, and Hasani-Dakari. It is situated next to Nzhwelule Primary School and a football field. The clinic is located 52km away from Makhado and 28km from Tshilidzini Hospital, which is the referring hospital. The clinic renders 24-hour services through an on-call system from 18h00 to 07h00 am daily. The services covered include Tuberculosis (TB), HIV & AIDS, treatment of minor ailments, antenatal care (ANC) and maternity deliveries, as well as Youth Friendly Services (YFS), which deals with family planning and productive education among teenagers. Most clients served by Manavhela Clinic belong to the Christian faith, while some belong to the traditional faith and depend on social grants for survival. On weekends, young people jog in the morning and after hours, then later go to taverns to drink alcohol all night.

Population, Sampling technique, and Sample size

The target population for this study was teenagers aged 13 -19 years who came to Manavhela Clinic for Youth Friendly Services, irrespective of gender. The table below contains information on the number of teenagers who visited Manavhela Clinic between March and July 2020 for different healthcare services.

Table 1. Total number of teenagers who visited Manavhela Clinic.

Month	March	April	May	June	July	Total
Total number of teenagers who visited the clinic	107	100	98	110	108	523

Source: Manavhela Clinic register March-July 2020.

About 97 potential participants were approached face-to-face for recruitment to participate in the study. Thus, the participants' selection used non-probability accidental/convenience sampling [15]. All those who were approached were given information about the researcher, the purpose of the study, their rights and expected responsibilities, the safety and security of their responses, the use of recording devices, and the possibility of publishing findings anonymously. Participants were made to understand that their participation in this study was voluntary, and they could opt out anytime, even after giving consent. About 81 teenagers refused to participate in the study, citing without specific reasons. Those who voluntarily agreed to participate were only sixteen teenagers. Thus, the sample size was only 16 participants: two aged 13 years, two aged 14, and two aged 15.; three aged 16 years., and two aged 17 years.; three aged 18 years. And two aged 19 years.

Inclusion and exclusion criteria

The study included only consented teenagers who came to the Youth Friendly Service at Manavhela Clinic during August and September 2022. Teenagers who visited the clinic but were not part of the Youth Friendly Service at Manavhela Clinic were excluded. However, when data saturation was not attained based on the set objectives, the researcher ultimately included the four teenagers (p3, p7, 10, and p16) who only attended the Youth-Friendly Service one after the other until data saturation was achieved.

Data collection tool

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Based on the study objectives, the researcher developed an interview guide with two central questions in the English language, namely [1] *What are the measures you practice avoiding contracting STIs?* [2] *What makes you use those measures? These questions were followed by open-ended probing questions guided by the participant's response*. For the participants who were uncomfortable with the English language, the interviewer translated the questions into their preferred mother tongue (Tshivenda or Xitsonga).

Pre-testing

The researcher trial-ran research questions to check if they were clear enough to provide detailed information and whether they were not, leading to a 'yes' or 'no'' answer. The voice recorder was connected to check its functionality and that of the batteries to ensure that the process of collecting data was not interrupted. The researcher allocated three (more than 10%) participants from the target population who were first met and interviewed to check the effectiveness of the interview guide. In so doing, the researcher could check the interview time, resolve the ambiguity of the questions, and make appropriate adjustments. All participants in pre-testing also formed part of the final study to ensure that the essential data provided during the pre-testing phase was retained.

Measures to ensure trustworthiness.

Guided by the literature in a methodological paper by Korstjens & Moser [16], credibility, transferability, dependability, and confirmability were adopted to ensure the study's trustworthiness. The study's credibility was ascertained through prolonged engagement with the study participants, data collection through audio-recorded interviews and field notes for data triangulation, and member-checking by replaying recorded interviews for each participant after the interview process to verify the accuracy of the researchers' interpretation. A detailed description of the research methodology process was documented and followed strictly to ensure the transferability of this study's findings. For the dependability and confirmability of this study to be ensured, all transcripts and the voice recorder were made available to the supervisor (third author) and co-coder (first author) to confirm the findings. The data collected went through an audit trail by two expert researchers in the form of a supervisor and co-supervisor to check and compare the results.

Ethical consideration

Before participant recruitment, an ethical clearance certificate was obtained from the University of Venda Human and Clinical Research Ethics Committee (FSH/21/PH/22/2211), while permission to access the selected clinic and participants was issued by the Limpopo Department of Health (LP-2021-12-001), and the operational manager of Manavhela Clinic.

To avoid bias, as the researcher is a professional nurse in the participating clinic, the recruitment process of potential participants was done by trained home-based carers and NGO personnel who come to the clinic every week. Participants were recruited while facilitating Youth Friendly Services at the Manavhela clinic. Participants were informed of the interview's allocated time frames before the interviews. Written consent forms were obtained from sixteen teenagers who agreed to participate in the study.

Data were collected during consultation time; no one at the clinic knew the specific day for data collection. Voices were lowered during data collection so that people from other cubicles could not hear anything. Due to the sensitive nature of the study, the questions were tailored to ensure that the sensitive issues were minimized by the researcher, with the help of the supervisors who experts in the field. It is noteworthy to point out that during the interview process, the researcher professionally asked questions. However, no harm occurred during data collection, and the researcher did not experience emotional harm feedback from the participants. Codes were assigned to participants' responses in the field notes instead of their names to maintain confidentiality and anonymity.

Data collection process

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The female researcher (Master of Public Health student at the University of Venda), the second author, collected data at the clinic in a separate consultation room, where there were no other people but one participant at a time and the researcher. Rapport was created prior to asking serious study questions. The process of data collection took two months (August and September 2023) after the approval by the University Research Ethics Committee. To ensure that data of good quality was collected during the interview process, field notes were taken, data was summarized to condense and clear the participants' statements, probing questions were asked to request more information during the interview, and active listening was practiced as suggested by De Vos [17]. The interviews per participant lasted between 15-30 minutes. Data was saturated at Participant 14, but the researcher continued until Participant 16 to confirm the saturation. There were no repeat interviews carried out.

Data analysis

The second author conducted thematic open coding analysis 17] to transform raw data into themes and sub-themes according to meaning and relevancy to the study objectives. These codes were confirmed by the co-coder, who is the third author. Before the analysis, some of the interviews recorded in Tshivenda were transcribed verbatim into English by a language expert. Afterward, all the transcripts were aligned with the field notes and were returned to participants, but there were no comments or corrections. Codes, themes, and sub-themes were generated using thematic analysis.

3. Results

Table 2 below depicts the demographic characteristics of sixteen teenagers who participated in this study.

Table 2. Participants demographic characteristics.

Name	Gender	Age
Participant 1	Female	13
Participant 2	Female	17
Participant 3	Female	13
Participant 4	female	18
Participant 5	Female	15
Participant 6	Female	14
Participant 7	Female	17
Participant 8	Female	16
Participant 9	Male	14
Participant 10	Male	18
Participant 11	Female	15
Participant 12	Female	16
Participant 13	Female	19
Participant 14	Male	16
Participant 15	Female	19
Participant 16	Female	18

Open coding thematic analysis yielded two themes tabulated in Table 3 below.

Table 3. Themes and sub-themes.

Themes	Sub-themes

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STIs preventative measures practiced by teenagers.	Abstinence
	Condom use
	Mythical practices
	Lack of sex education
Factors influencing the choice of STI preventive measures practiced by teenager	Peer pressure
	Patriarchy
	Accessibility of sexual health services

3.1. STIs preventative measures practiced by teenagers.

Abstinence

Analysis of the data revealed that only a few participants used recommended STI preventive measures (2 used condoms; 2 abstinence). Participant 1, a female 13 years old, said, *"I just abstain from sexual activities to prevent myself from contracting sexually transmitted infections."*

"I'm still young, so abstaining from sexual activities is the best way for me to avoid being affected by the STIs. However, with our generation, it is difficult to meet these requirements. It is just difficult to abstain, I am saying this because there are many teenage girls that get pregnant these days which will come as a shock to a lot of people" (Participant 3, female, 13 years).

Condom use

Some participants mentioned that they engaged in sexual activities, but they did not use condoms for protection consistently. Participant 5 (Female, 15 years) said:

"I use protection some other times and sometimes I do not. On most occasions, I use protection; on some, I can say I did not. Some of these things you cannot control it. Sometimes you are caught in a situation where you end up doing something you never planned to do".

Another participant also said:

"I usually use a condom when I plan to have sex, but in case of emergency, I don't because I didn't have time to prepare for sex it just happened" (Participant 11, female, 15 years).

Mythical practices

Participants explained some of the mythical practices they indulge in before, during, and after sex as a form of preventive measure against sexually transmitted infections.

"I boil aloe (tree) and drink the water before and after sex, and I will also give it to my girlfriend to drink so that we will be protected and safe from the STIs" (Participant 9, male, 14 years).

"I boil the morula tree (stem) before sex and drink the water while it is warm. This will prepare my body to resist the possibilities of being affected and that my partner is also protected" (Participant 7, male, 14 years).

If it is an emergency, my boyfriend will release (ejaculate) outside my vagina to protect and keep us safe from the STIs" (Participant 11, female, 15 years).

Participant 4 (*female, 18 years*) said, "*I use nothing; after having unprotected sexual intercourse with someone, I will then use plain yogurt to wash and cleanse my vagina, or sometimes steam my vagina using salty warm water and put it in the bucket, and sit on top of it, all the discharges will be wiped away."*

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3.2. Factors influencing the choice of STI preventive practices.

Lack of sex education

Some participants pointed out that having knowledge about sexually transmitted infections and practicing it would protect teenagers from contracting sexually transmitted infections and will also help to curb the incidence of teenage pregnancy.

Participant 16 (female, 18 years) *said, "I think some of us, we end up using the traditional methods we are told of preventing the spread of STIs because we do not know about the prevention of STIs, let alone to know what the STIs are. I use concoctions because of the first-hand information I get at home and from my schoolmates".*

Participant 6 (female, 14 years) said, *"I follow safer practices to prevent the contraction of STIs when engaging in sexual activities because I do know how one can be contracted with the STIs and how it could be spread from one person to another. To my understanding, I think most of my friends could take education and schooling very seriously some of the things that happen will not happen, such as teenage pregnancy".*

Participant 2 (female, 17 years) suggested that having a better orientation and intervention strategy for STI preventive measures may help to embolden teenagers, especially those in the formal education setting, to act right without fear of judgment. She spoke.

"I think there is a need to rethink a strategy on how to encourage teenagers to use the appropriate measures to prevent them from contracting and spreading STIs. The availability of condoms at school does not mean that all the teenagers who are going to school will use them, some are shy to take them while they are being watched by others which results in them using the whatever methods that we are not sure if they are to assist".

Peer pressure

Some participants explained that they experience much pressure from their peers and have access to wrong information.

"I use concoctions because is the first-hand information that I get at home and from my schoolmates" (Participant 16, female, 18 years).

"I sometimes don't use protection I can also say that I get influenced by my friends on the measures we can use to prevent ourselves from contracting the STIs" (Participant 11, female, 17 years).

"There are some other stories, [based on a myth that we might be holding], that we might be sharing for fun as teenagers when we are alone, and these stories are powerful in that we will want to try these things when we are alone since we want to experience stuff" (Participant 11 female, 15 years).

Accessibility of sexual health services

Some participants reported that even though they are aware of the STI preventive measures, they live very far away from hospitals or primary healthcare facilities where they can easily have access to condoms. Participants 5 (Male, 15 years) and 10 (Male, 18 years) had this to say.

"……we end up using the traditional methods we are told of prevents the spread of STIs because we do not have access to the condoms".

……. but also, because we are far from the clinics where we can get the information and other services such as the PrEP pills you can get after you think that you might have been exposed to HIV/ AIDS.

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More health workers should come to our community to educate more people regarding the transmission of STIs and how we can protect each other".

Patriarchy

One participant pointed out that some of the teenagers are still living in a patriarchal society where males or boys are the only people who have a say when it comes to sex-related matters. The participant had this to say,

"I don't usually use any other means of protection. If my boyfriend says we should use a condom we do that, if he says we should not use it we simply don't, don't forget that males are the head of the family we as females should support whatever they say. My boyfriend has a final say on our sex life" (Participant 13, female, 19 years).

4. Discussion

This study was set to investigate the preventative measures practiced by teenagers against STIs and the factors influencing the choice of STI preventive practices in rural areas. Findings were organized into:

4.1. STIs preventative measures practiced by teenagers.

The following preventive measures were found to be practiced by teenagers:

Abstinence

The findings of this study revealed that few, especially the youngest of the participants, aged 13 years, practiced abstinence as their preventive measure against STIs. These findings are supported by Irfan, Hussain, Noor, et al. [18]), who discovered a prevalence of 3.4% - 83.3 % primary abstinence among young men (10 to 24 years) globally, with Nigeria, having a prevalence of abstinence among male and female youth (16-24 years) of 68%. Similar findings in Kwazulu Natal, South Africa, by Zuma, Seeley, Sibiya, et al. [19] indicate that abstinence and being faithful are uncommon prevention strategies and are used mainly by young girls who went to study away, sent by parents to be boarding school and those who practiced virginity testing because they delayed starting sexual relationships. The perception is that these two approaches are not easy to adhere to, as most young people in the community start having relationships and experimenting with sex when they reach secondary school. The findings of this study suggest that the use of sexual abstinence among teenagers or adolescents is low in rural areas of Limpopo province and that most teenagers are sexually active, implying that comprehensive sexual education might be more effective than abstinence-expectation among youth.

Condom use

The findings of the study indicate that those few participants who used condoms did it inconsistently. Ajayi, Omonaiye & Nwogwugwu, et al. [20] found supporting evidence which indicates that the prevalence of consistent condom use was 39.3% (CI: 35.5%-43.2%) among the Eastern Cape Province university students, with no significant gender and age differences. Similarly, Duby, Jonas, McClinton Appollis, et al. [21] highlight that the use of condoms amongst youth in South Africa is still suboptimal. A similar finding was highlighted by Mostert, Sethole, Khumisi, Peu, Thambura, et al. [22], who revealed low (41.2%) use of condoms among youth in the Northwest province, South Africa. Low and inconsistent condom use are both risky sexual behaviours that might be contributing to STIs and teenage pregnancy in South Africa.

Mythical preventive practices

Findings in this study revealed that most participants used mythical mixtures made from boiling aloe or marula tree, which they drank before and after sex, applying plain yogurt on the vagina once

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a week, or vaginal steaming. However, studies consider the application of yogurts as beneficial against women's vaginal diseases. Johannsen [23] asserts as early as 2005 that placebo-controlled, cross-over trials performed by Hilton and collaborators using L. acidophilus containing yogurt had a cure rate ranging from 57% for bacterial vaginosis to 74% for yeast vaginitis, compared with a cure rate of 0-22% observed in the control group. In addition, Johannsen [23] states that Israeli researchers using yogurt containing L. acidophilus found a decrease in the episodes of bacterial vaginosis among the participants ingesting it. These studies were also mentioned by Das and Ameeruddin [24], who confirm that the application of yogurt is a scientific preventive measure and not a myth.

Regarding drinking boiled aloe juice before and after sex, Taylor-Donald [25] cites a study done by the Russians, which claims that aloe vera stimulates the normal protective function of the body and increases the body's ability to handle harmful substances. According to Taylor-Donald [25], those who do make a daily habit of drinking aloe juice say that they have increased energy, their digestion is improved, and they feel generally healthier. If these people believe that aloe will help the body rid itself of ulcers, constipation, colitis, and arthritis (to name just a few), drinking aloe juice may be one of the best preventive measures. In addition, Olariu [26] claims that aloe moves into the body where it works to boost the body's repair system, feeding every single cell with as many of the nutrients as it can, and that it is this action that leads to claims of a 'curative' effect on arthritis, Candida, and nerves. Aloe vera is a wonder plant that influences any part of the human body through its healing power since it is a natural fighter against all sorts of infection [26]. However, Olariu [26] emphasizes that it might take weeks for these effects to be achieved, making the safety of sporadic drinking of aloe juice before and after sex a questionable myth and subject to future research.

Regarding the drinking of boiled marula tree leaves before and after sex, Foods Abdalbasit [27] asserts that a drink made from marula leaves is used to treat gonorrhoea in Sudan. In contrast, the bark is also disinfected when soaked in boiling water. According to Kyazike [28], syphilis can be cured by drinking the boiled roots of the marula tree mixed with those of ntwa and mulaliki, which brings confusion as to which mixture is effective as a preventive measure, the boiled leaves of the marula tree or the boiled roots mixed with those of ntwa and mulaliki or both. Thus, currently, using boiled leaves of marula trees might be a mythical preventive practice, which might be contributing to increased STIs and pregnancy in Limpopo province.

4.2. Factors influencing the choice of STI preventive measures practiced by teenagers.

Patriarchy

The study found that patriarchal relationships, which may be perceived as a cultural norm, put the participants in a situation where they indulge in unprotected sex because they are obliged to do as their male partner decides. Torregosa, M., & Patricio [29] highlight that ascribed gender roles, such as the African culture, may influence relationship dynamics, decisions, and negotiations and, therefore, the practice of protected safe sex. According to Torregosa, M., & Patricio [29], African cultural norms assume women to be naive, submissive, nurturing, selfless, self-sacrificing, family-centred, chaste, and sexually pure, where female virginity is emphasized. The submissive nature of African women perpetuates inhibition of expression and poor direct communication about sex protection between partners, which puts women at high sexual risks. Similar findings in Mozambique by Gruenbaum, Earp, and Shweder [30] discovered that girls were less assertive, more accepting of gender power differentials, and tended to be dependent on partners for material needs, which served to weaken their bargaining power concerning safe sexual behaviour, which rendered them more vulnerable. This study findings have implications for the development of culturally sensitive evidence-based interventions that promote sexual self-efficacy skills among males who strongly identify with culturally ascribed gender roles.

Lack of sex education

The study also found that lack of sex education is another factor influencing teenagers to indulge in unsafe sex. Leung, Shek, and Leung's [31] review shows many gaps and inadequacies in sex

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education in the two largest English-speaking countries and three Chinese-speaking societies. A similar finding was reported by Kyilleh et al. [32], where participants showed a lack of comprehensive knowledge of sexual reproductive health, which makes them vulnerable to unsafe sexual reproductive health behavior and choices with unplanned pregnancies and STIs as the outcome of their choices. These findings imply that schools need to establish and strengthen reproductive health clubs to be able to equip students with the required skills and knowledge about sexuality.

Peer pressure

The findings of this study detailed that participants' choice of STI preventive measures was greatly influenced by their peers. Similarly, Girmay, A., and Mariye [33] found that only 68 (60.8%) initiate their first sex by their own will in Ethiopia youth between 15 and 24 years. According to Adegboyega, Ayoola, and Muhammed [34], adolescents are more responsive to the rewards of risk, such as peer approval, because they are still developing the capacities for judgment and self-control. Peers influence written messages, such as positive and negative reviews, comments, suggestions, discussions, or experiences [34]. A similar study by Moore & Rosenthal [35] found that 61 percent of sexually active young people had a large amount of their sexual education came from discussions with friends only. Wakasa, Oljira, and Demena [36] suggest that this might be because adolescents are at a higher likelihood of sharing their day-to-day life experiences with their friends and that adolescents need attention and recognition with peers so that they are likely to behave in a manner intimate friends practice. These findings imply that parents should be aware of the dynamic behavioural change of their children, listen to them, and attend to their needs.

Accessibility of sexual health services

This study revealed that the inability to access health facilities tends to be a hindrance to consistent compliance with safe sex practices, especially for those who do not attend formal education. Ninsiima et al. [37] concurs with the findings of this study, indicating that access and utilization of Youth-friendly sexual and reproductive health remains a big problem for the youth, especially in sub-Saharan Africa. Thus, about 20 studies from 7 Sub-Saharan countries identified structural barriers such as negative attitudes of health workers and lack of knowledge among youth regarding YFSRHS as barriers to accessing sexual health services [37]. This study has implications for relevant stakeholders to implement quality implementation guidelines in clinics to offer services according to youth's needs and preferences. Educating the youth in schools can facilitate the utilization and scale-up of the service.

5. Conclusions

Risky sexual behaviors among 13 to 19-year-old teenagers are still rife in rural areas, rooted in so-called myths, patriarchy, lack of sex education, peer pressure, and inaccessibility of sexual health services. Rural clinics in Limpopo Province should intensify STI school health education and Youth Friendly Services programs to raise awareness and improve accessibility to condoms. The development of evidence-based sexuality education guidelines and messages for primary health care personnel, including community health workers, who respond to mythical-related information, would go a long way to empower youth in rural communities. Life orientation teachers strengthen the assertion and resilience skills of learners at school to resist peer pressure. Community health workers should educate more people in the community regarding the transmission and prevention of STIs, including sex negotiation and assertion. Department of Cooperative Governance and Traditional Affairs; and interest groups to consider policy development and guidelines that advocate for a shift from the dominant stereotypes about "backward" African cultures of patriarchy. Researchers should develop culturally sensitive, evidence-based interventions that promote sexual self-efficacy skills among males who strongly identify with culturally ascribed gender roles.

Supplementary Materials: Not applicable

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Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Ethics Committee of University of Venda (FSH/21/PH/22/2211 October 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data for this study is available upon request from eustaciaeusy@gmail.com.

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References

1. Leung, H., Shek, D. T., Leung, E., & Shek, E. Y. (2019). Development of contextually relevant sexuality education: Lessons from a comprehensive review of adolescent sexuality education across cultures. *International journal of environmental research and public health*, *16*(4), 621.
2. World Health Organization. Sexually transmitted infections Fact Sheets. 2023. Available from: http://www.who.int/mediacentre/factsheets/fs110/ en/. Accessed on Sep 1, 2023.
3. World Health Organization. 2022. Global health sector strategies on, respectively, HIV, viral hepatitis, and sexually transmitted infections for the period 2022-2030. Available from: https://www.who.int/publications/i/item/9789240053779. Accessed on Sep 1, 2023.
4. Kharsany AB, McKinnon LR, Lewis L, Cawood C, Khanyile D, Maseko DV, Goodman TC, Beckett S, Govender K, George G, Ayalew KA. Population prevalence of sexually transmitted infections in a high HIV burden district in KwaZulu-Natal, South Africa: Implications for HIV epidemic control. International Journal of Infectious Diseases. 2020 Sep 1; 98:130-7.
5. Huyveneers LE, Maphanga M, Umunnakwe CN, Bosman-de Boer L, Moraba RS, Tempelman HA, Wensing AM, Hermans LE. Prevalence, incidence, and recurrence of sexually transmitted infections in HIV-negative adult women in a rural South African setting. Tropical Medicine & International Health. 2023 Apr;28(4):335-42.
6. Frank D, Kufa T, Dorrell P, Kularatne R, Maithufi R, Chidarikire T, Pillay Y, Mokgatle M. Evaluation of the national clinical sentinel surveillance system for sexually transmitted infections in South Africa: Analysis of provincial and district-level data. South African Medical Journal. 2023 Jul 1;113(7):1275-82.
7. Ditshwane B, Mokgatle MM, Oguntibeju OO. Awareness, Utilization and Perception of Sexually Transmitted Infections Services Provided to Out-of-School-Youth in Primary Health Facilities in Tshwane, South Africa. International Journal of Environmental Research and Public Health 2023;20(3):1738.: http://dx.doi.org/10.3390/ijerph20031738
8. Sawyer SM, Afifi RA, Bearinger LH, Blakemore SJ, Dick B, Ezeh AC, Patton GC. Adolescence: A foundation for future health. The Lancet. 2012 Apr 28;379(9826):1630-40.
9. Larsson FM, Bowers-Sword R, Narvaez G, Ugarte WJ. Exploring sexual awareness and Decision-making among adolescent girls and boys in rural Nicaragua: A socio-ecological approach. Sexual & Reproductive Healthcare. 2022 Mar 1; 31:100676.
10. Nunu WN, Makhado L, Mabunda JT, Lebese RT. Exploring Adolescent Sexual Health Practices and Outcomes in Umguza and Mberengwa Districts in Zimbabwe. The Open Public Health Journal. 2022 Oct 25;15(1).
11. Department of Health. Adolescents and Youth Friendly Service (AYFS). 2023. Available from: https://www.ldoh.gov.za/?q=node/34. Accessed on Oct 26, 2023.
12. Department of Health. National Adolescent and Youth Health Policy. 2017. Available from knowledgehub.health.gov.za. Accessed on Oct 26, 2023.

13. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357
14. Gray JR, Grove SK. Burns and Grove's The Practice of Nursing Research-E-Book: Appraisal, Synthesis, and Generation of Evidence. Elsevier Health Sciences; 2020 Jul 21.
15. Shukla S.S. NON-PROBABILITY SAMPLING METHOD1. Conference paper. 2023. Retrieved from; https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&as_ylo=2023&q=Satishprakash+Shukla+NON-PROBABILITY+SAMPLING+METHOD+1&btnG=.
16. Korstjens, I. and Moser, A., 2018. Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. European Journal of General Practice. 24(1), pp.120-124.
17. De Vos., Strydom, H, Fouch, C.B and Delport, C.L.S. 2015. Research at grassroots for social science and human service profession (4th ed.). Cape Town: Lansdowne.
18. Irfan, M., Hussain, N. H. N., Noor, N. M., Mohamed, M., & Ismail, S. B. (2020). Sexual abstinence and associated factors among young and middle-aged men: A systematic review. *The journal of sexual medicine*, *17*(3), 412–430.
19. Zuma, T., Seeley, J., Sibiya, L. O., Chimbindi, N., Birdthistle, I., Sherr, L., & Shahmanesh, M. (2019). The changing landscape of diverse HIV treatment and prevention interventions: experiences and perceptions of adolescents and young adults in rural KwaZulu-Natal, South Africa—*frontiers in Public Health*, *7*, 336.
20. Ajayi, A. I., Omonaiye, O., & Nwogwugwu, C. (2022). Barriers and facilitators of consistent condom use among adolescents and young adults in South Africa: A cross-sectional survey.
21. Duby, Z., Jonas, K, McClinton Appollis, T., *et al.* Factors influencing adolescent girls and young women's participation in a combination HIV prevention intervention in South Africa. *BMC Public Health* **21**, 417 (2021). https://doi.org/10.1186/s12889-021-10462-z.
22. Mostert, K., Sethole, K. M., Khumisi, O., Peu, D., Thambura, J., Ngunyulu, R. N., & Mulaudzi, M. F. (2020). Sexual knowledge and practice of adolescent learners in a rural South African school. *African Health Sciences*, *20*(1), 28–38. https://doi.org/10.4314/ahs.v20i1.6
23. Johannsen, E. (2005). Urogenital infections and probiotics. *South African Journal of Obstetrics and Gynaecology*, *11*(1), 12–13.
24. Das, S., & Ameeruddin, S. (2022). Probiotics in common urological conditions: A narrative review. *Longhua Chin. Med*, *5*, 14.
25. Taylor-Donald, L. (1981). Aloe Vera-Natures miracle. *Bestways magazine*, 1-3.
26. Olariu, R. (2009). Aloe vera–nature's silent healer. *Hygiene and Public Health*, pp. *59*, 79–87.
27. Foods, A. T., & Abdalbasit, A. M. (2023). Chapter Thirty-Two Marula (Sclerocarya birrea): Leaves, Oil, Juice, And Roots as Traditional Foods Adam Mariod Abdalbasit1. *Traditional Sudanese Foods: Sources, Preparation, and Nutritional and Therapeutic Aspects*, 304.
28. Kyazike, E. (2021). Exploring the preference for indigenous medicinal plant medicine in Buliisa District, Western Uganda. *Inkanyiso: Journal of Humanities and Social Sciences*, *13*(1), 77–105.
29. Torregosa, M., & Patricio, O. (2022). The Mediating Role of Sexual Self-Efficacy on Protected Sex. *Journal of primary care & community health*, *13*, 21501319221129934.
30. Gruenbaum, E., Earp, B. D., & Shweder, R. A. (2023). Reconsidering the role of patriarchy in upholding female genital modifications: analysis of contemporary and pre-industrial societies. *International Journal of Impotence Research*, *35*(3), 202-211.
31. Leung, H., Shek, D. T., Leung, E., & Shek, E. Y. (2019). Development of contextually relevant sexuality education: Lessons from a comprehensive review of adolescent sexuality education across cultures. *International journal of environmental research and public health*, *16*(4), 621.
32. Kyilleh JM, Tabong PT, Konlaan BB. Adolescents' reproductive health knowledge, choices, and factors affecting reproductive health choices: a qualitative study in the West Gonja District in Northern region, Ghana. BMC international health and human rights. 2018 Dec;18(1):1-2.
33. Girmay, A., Mariye, T. Risky sexual behavior practice and associated factors among secondary and preparatory school students of Aksum town, northern Ethiopia, 2018. *BMC Res Notes* **12**, 698 (2019). https://doi.org/10.1186/s13104-019-4714-1
34. Adegboyega, L. O., Ayoola, V. A., & Muhammed, S. (2019). Influence of Peer Pressure on Sexual Behavior of Undergraduates in Kwara State. *Anatolian Journal of Education*, *4*(1), 49–58.

 doi:10.20944/preprints202312.0104.v1

35. Moore, M., & Rosenthal, G. (2006). Sexuality in adolescence: Current trends. New York, NY: Routledge Publishing.
36. Wakasa, B. F., Oljira, L., Demena, M., Regassa, L. D., & Daga, W. B. (2021). Risky sexual behavior and associated factors among sexually experienced secondary school students in Guduru, Ethiopia. *Preventive medicine reports*, *23*, 101398.
37. Ninsiima, L. R., Chiumia, I. K., & Ndejjo, R. (2021). Factors influencing access to and utilization of youth-friendly sexual and reproductive health services in sub-Saharan Africa: a systematic review. *Reproductive health*, *18*(1), 1-17.