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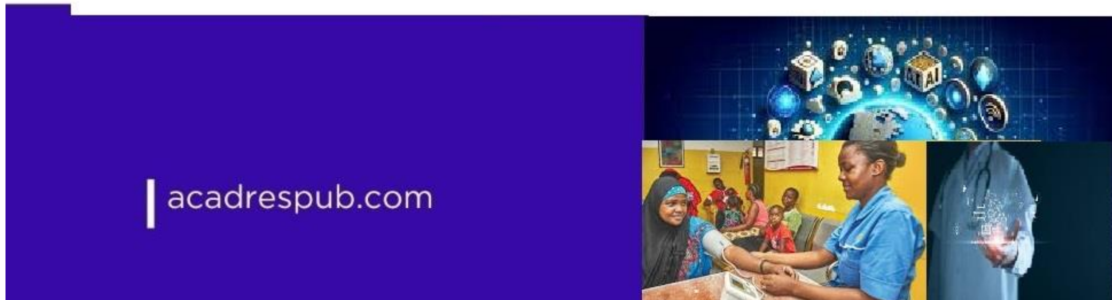

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AWARENESS OF YOUTH-FRIENDLY SEXUAL AND REPRODUCTIVE HEALTH SERVICES AMONG YOUTHS IN OREDO AND UGBEKUN COMMUNITIES, NIGERIA

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ABSTRACT
Youth-friendly sexual and reproductive health services (YFSRHS) are critical to improving adolescents' and youths' sexual and reproductive health outcomes. However, limited awareness of such services continues to hinder their utilization in many low and middle-income settings. This study assessed the level of awareness of youth-friendly sexual and reproductive health services among youths in Oredo and Ugbekun communities and examined strategies for improving awareness and utilization. A mixed-methods approach was adopted. Quantitative data for the needs assessment were collected from 426 proportionately sampled and consenting youths drawn from the two purposively selected communities. Qualitative data were obtained through in-depth interviews with healthcare providers and community members. Furthermore, a quasi-experimental design involving intervention and control groups was implemented, using 152 proportionately sampled youths selected from the initial needs assessment sample. Descriptive and inferential statistics were used to analyze quantitative data, while thematic analysis was applied to qualitative responses. Findings revealed low to moderate awareness of YFSRHS among youths prior to intervention, with significant gaps in knowledge of service availability, confidentiality, and youth-specific service components. Post-intervention results indicated a statistically significant improvement in awareness among youths exposed to the intervention compared to the control group. The study concludes that targeted, culturally appropriate interventions can substantially improve youth awareness of YFSRHS and recommends strengthening community-based and facility-level youth engagement strategies.

Keywords: Youth-friendly services; Sexual and reproductive health; Youth awareness; Quasi-experimental study; Community health; Nigeria

Introduction

Young people constitute a substantial proportion of the population in many developing countries, including Nigeria, and continue to face significant sexual and reproductive health challenges. These challenges include unintended pregnancies, sexually transmitted infections (STIs), unsafe abortions, and limited access to appropriate and confidential healthcare services (World Health Organization [WHO], 2022). In response to these challenges, youth-friendly sexual and reproductive health services (YFSRHS) were developed to provide accessible, acceptable, equitable, appropriate, and effective services that are responsive to the unique needs of adolescents and young people (WHO, 2012).

Despite global and national policy commitments and the establishment of youth-friendly health initiatives, the utilization of YFSRHS remains suboptimal in many communities. One of the most critical barriers to utilization is inadequate awareness among youths regarding the availability, scope, and benefits of these services. Awareness is a fundamental prerequisite for service utilization, as youths who are uninformed or misinformed about available services are unlikely to seek care even when such services exist (Adebayo et al., 2021).

Evidence from Nigeria and other sub-Saharan African countries indicates that although many youths possess general knowledge of sexual and reproductive health issues, they often lack specific information on where and how to access youth-friendly services. Persistent misconceptions about eligibility, particularly among unmarried youths, further limit service uptake (Ogunlayi & Adebayo, 2020). Structural and sociocultural factors including stigma, religious and cultural norms, parental influence, and weak community–health system linkages also significantly influence youth awareness and access to YFSRHS (Ajayi et al., 2022). Empirical studies consistently demonstrate positive associations between improved awareness and increased utilization of sexual and reproductive health services, highlighting the importance of targeted health education and community engagement (Yakubu & Salisu, 2018).

In Oredo and Ugbekun communities, anecdotal evidence suggests low engagement of youths with sexual and reproductive health services, potentially due to limited awareness, sociocultural barriers, and inadequate dissemination of information regarding available youth-friendly services. However, systematic data on youth awareness of YFSRHS in these communities remain limited. This study therefore seeks to assess the level of awareness of youths regarding YFSRHS in Oredo and Ugbekun communities and to evaluate the effectiveness of an intervention aimed at improving awareness, with the goal of generating evidence to inform policy, programming, and community-based strategies for enhancing youth access to sexual and reproductive health services.

Statement of the Problems

Despite the availability of sexual and reproductive health services in many primary healthcare facilities, youths in Oredo and Ugbekun communities continue to experience preventable sexual and reproductive health challenges. Reports from healthcare providers indicate poor youth attendance at health facilities for reproductive health services, suggesting possible deficiencies in awareness and perception of youth-friendliness. Lack of awareness of YFSRHS may result in delayed care-seeking, reliance on unsafe alternatives, and increased vulnerability to adverse health outcomes. Without empirical evidence on the level of youth awareness and the effectiveness of targeted interventions, efforts to improve service uptake may remain ineffective. This study addresses this gap by assessing youth awareness and testing an intervention strategy to enhance awareness of YFSRHS in the selected communities.

Objectives of the Study

To assess the level of awareness of youth-friendly sexual and reproductive health services among youths in Oredo and Ugbekun communities.

1. To assess the awareness of youth-friendly sexual and reproductive health services among youths in Oredo and Ugbekun communities.
2. To identify sources of information on sexual and reproductive health services among youths in the study communities.
3. To explore perceptions of healthcare providers and community members

regarding youth awareness and access to YFSRHS.

4. To evaluate the effect of an intervention on youth awareness of YFSRHS using a quasi-experimental design.
5. To compare changes in awareness levels between intervention and control groups.

Research Questions

The followings guided the research questions

1. What are the assessment level of awareness of youth-friendly sexual and reproductive health services among youths in Oredo and Ugbekun communities?
2. What are the major sources of information on YFSRHS for youths in the study areas?
3. How do healthcare providers and community members perceive youth awareness and access to YFSRHS?
4. What effect does the intervention have on youths' awareness of YFSRHS?
5. Is there a significant difference in awareness levels between youths in the intervention and control groups after the intervention?

Methodology

The study adopted a mixed-methods design comprising a quantitative needs assessment, qualitative interviews, and a quasi-experimental component involving intervention and control groups. The study was conducted in Oredo and Ugbekun communities, which were purposively selected based on population size, availability of health facilities, and reported youth sexual and reproductive health challenges. The study population comprised youths aged 15–24 years residing in Oredo and Ugbekun communities. Healthcare providers working in local health facilities and selected community members were also included in the qualitative component. For the needs assessment, quantitative data were collected from 426 proportionately sampled and consenting youths from the two communities. From this sample, 152 youths were proportionately selected and assigned to intervention and control groups for the quasi-experimental study. Purposive sampling was used to select healthcare providers and community members for in-depth interviews. Quantitative data were collected using a structured, interviewer-administered questionnaire assessing awareness and knowledge of YFSRHS. Qualitative data were obtained through in-depth interviews with healthcare providers and community members to explore contextual factors influencing youth awareness. The intervention consisted of structured awareness sessions on youth-friendly sexual and reproductive health services, focusing on service availability, confidentiality, and access pathways. The control group received no intervention during the study period. Quantitative data were analyzed using descriptive statistics and inferential tests to compare pre- and post-intervention awareness levels between groups. Qualitative data were transcribed and analyzed thematically.

Ethical Considerations

Ethical approval was obtained from the relevant ethics committee. Informed consent was obtained from all participants, with assurances of confidentiality and voluntary participation.

Theoretical Framework

This study is anchored on the Health Belief Model (HBM), which posits that individuals' health-related actions are influenced by their perceived susceptibility to health problems, perceived severity, perceived benefits of action, and perceived barriers. Awareness serves as a critical modifying factor that shapes perceptions and influences health-seeking behavior. In the context of YFSRHS, increased awareness is expected to enhance perceived benefits and reduce perceived barriers, thereby promoting service utilization among youths.

Awareness of youth-friendly sexual and reproductive health services among youths in Oredo and Ugbekun communities.

Youth-friendly Sexual and Reproductive Health (YFSRH) services are designed to be accessible, acceptable, appropriate, and effective for young people. In many Nigerian communities, including Oredo and Ugbekun in Edo State, awareness and utilization of these services among youths remain significant public health concerns, influenced by socio-cultural, educational, and systemic factors.

1. Generally Low to Moderate Awareness Levels:

Studies in similar peri-urban and urban communities in southern Nigeria indicate that while many youths have heard of SRH services, specific awareness of youth-friendly characteristics (confidentiality, non-judgmental staff, and separate hours/locations) is considerably lower. Akinwale et al. (2020) in a study of adolescents in urban slums in Lagos found that 65% were aware of general SRH services, but only 34% could correctly identify features of youth-friendly services. This gap is likely comparable in Oredo/Ugbekun, given similar urban settings. National surveys, like the Nigeria Demographic and Health Survey (NDHS) 2018, highlight that comprehensive knowledge of SRH among young people (15-24) remains below 50% in the South-South region, indirectly suggesting limited structured exposure to YFSRH messaging.

2. Primary Sources of Information:

Awareness is largely shaped by informal networks rather than formal health systems.
Ogor et al. (2022), in a study on SRH information channels in Edo State, reported that peers and social media are the top sources of SRH information for youths, followed by schools. Health facilities and targeted outreach programs played a lesser role. This suggests awareness in Oredo and Ugbekun may be fragmented and potentially non-standardized.

3. Barriers to Awareness and Access:

Even when aware, uptake is low due to interconnected barriers.

A study by Okonofua et al. (2017) on adolescents' use of SRH services in Edo State specifically identified stigma, fear of lack of confidentiality, cost, and negative attitudes of healthcare providers as major deterrents. These factors undermine the "youth-friendly" concept and reduce the effectiveness of awareness campaigns. Cultural and religious norms, as documented by Ezegwui et al. (2019) in a review of adolescent SRH in Nigeria, discourage open discussion of sexuality, pushing services underground and limiting official awareness efforts.

4. Gender Disparities in Awareness and Perception:

Awareness and comfort with YFSRH services often vary by gender.

Research by Chukwumah et al. (2021) in Benin City (which includes Oredo LGA) found that young females were more likely to be aware of SRH services like contraception and pregnancy care due to perceived need, but also felt higher stigma. Young males showed lower awareness of available services, associating clinics primarily with female needs.

5. Impact of Specific Interventions:

Targeted programs can improve awareness.

The "Action Health Incorporated" (AHI) and "Society for Family Health (SFH)" programs in Nigeria have demonstrated that school-based SRH education and community youth clubs significantly increase awareness and positive attitudes toward YFSRH services (Adewole et al., 2018). The presence or absence of such NGO activities in Oredo and Ugbekun would directly influence local awareness levels.

Based on the evidence from comparable settings, awareness of YFSRH services among youths in Oredo and Ugbekun is likely suboptimal, characterized by:

Partial awareness driven more by peers/media than by formal, accurate sources.
Significant barriers related to stigma and provider attitudes that undermine awareness campaigns.
A clear need for sustained, multi-pronged interventions.

Recommendations inferred from the literature:

- Integrate Comprehensive SRH Education: Strengthen and scale up school and community-based CSE (Comprehensive Sexuality Education) to build foundational knowledge.
- Community-Led Social Marketing: Use youth-appropriate media (social media, radio jingles) and engage youth influencers to disseminate information on YFSRH service locations and features.
- Health Provider Training: Mandatory training for providers in Oredo and Ugbekun health

facilities on youth-friendly, non-judgmental service delivery to build trust.

- Peer Education Programs: Establish and support structured peer education networks to bridge the information gap in a relatable way.
- Research: There is a need for a dedicated KAP (Knowledge, Attitudes, and Practices) survey specifically for youths in Oredo and Ugbekun communities to generate precise baseline data for intervention planning.

Sources of Information on Sexual and Reproductive Health Services among Youths

Understanding where youths obtain information on Sexual and Reproductive Health (SRH) services is critical for designing effective public health interventions. The sources they use significantly influence the accuracy, completeness, and timeliness of the information they receive, ultimately affecting their health-seeking behaviors. Current trends show a complex mix of digital, interpersonal, and institutional sources, each with varying levels of influence and reliability.

1. Digital and Social Media: The Dominant Contemporary Source

The internet, social media platforms (Instagram, TikTok, Facebook, X), and messaging apps (WhatsApp) have become primary sources of SRH information for youths globally.

A 2023 systematic review by Svanemyr et al. (2023) in Reproductive Health concluded that digital platforms are increasingly the "first line" source for SRH information among adolescents and youth, especially for sensitive topics where anonymity is desired. In Nigeria, a study by Onyechi et al. (2022) published in the Journal of Pediatric and Adolescent Gynecology found that over 60% of university students in Enugu relied on social media for SRH information, though they expressed concerns about misinformation. This highlights the dual role of digital media as both accessible and risky. The UNFPA State of World Population 2024 report emphasizes the "digital divide," noting that while digital access is growing, inequalities in digital literacy and internet access can exacerbate existing gaps in SRH knowledge among marginalized youth.

2. Peers and Friends: The Trusted Interpersonal Network

Friends and peer groups remain a highly influential and frequently consulted source, particularly for normative guidance and experiential knowledge. Research by Mbachu et al. (2020) in Southeast Nigeria, published in BMC Public Health, found that peers were the most common source for information on contraception and pregnancy prevention, often superseding parents or teachers due to perceived relatability and reduced judgment. A multi-country study in Sub-Saharan Africa by Shawa et al. (2021) in Global Health: Science and Practice noted that peer-led interventions are highly effective because information shared within peer networks is often considered more credible and contextually relevant.

3. School-Based Sexuality Education: A Formal but Inconsistent Source

Schools are a pivotal setting for structured SRH education, but coverage, curriculum content, and quality vary dramatically. The 2021 UNESCO Global Status Report on Comprehensive Sexuality Education (CSE) reveals that while 85% of countries have policies supporting CSE, implementation is often weak. In many Nigerian schools, SRH education is limited, biological in focus, or absent, pushing youths to seek information elsewhere.A 2022 evaluation of a school-based CSE program in Edo State, Nigeria (Adekola et al., 2022), showed significant improvements in kn owledge and attitudes when implemented fully, confirming schools' potential as a reliable source when programs are well-executed.

4. Parents and Family: A Preferred but Underutilized Source

While many youths express a desire to learn about SRH from their parents, actual communication is often limited due to cultural taboos, generational gaps, and discomfort on both sides. A qualitative study by Ishiekwene et al. (2023) in Sexuality Research and Social Policy among youths in Lagos found that while participants valued parental guidance, most SRH discussions were reactive (e.g., after an incident) rather than proactive, and mothers were consulted more than fathers. The NDHS 2018 data indicates that less than 40% of young women and 30% of young men aged 15-24 had discussed SRH topics with a parent before age 18.

5. Healthcare Providers: A Trusted but Under-accessed Source

Health professionals are considered highly authoritative and reliable sources, yet they are often not the first point of contact for general SRH information due to barriers of access, cost, and perceived stigma. A 2023 study in Frontiers in Public Health by Ugoji et al. (2023) on youth-friendly health services in Delta State, Nigeria, reported that youths only visited clinics for SRH information when facing an acute problem (e.g., suspected pregnancy or STI). The role of providers as preventive educators was minimal. The WHO Guidelines on Youth-Friendly Services (2020) stress the need for providers to engage in proactive, confidential counseling, but systemic and attitudinal barriers often prevent this.

6. Traditional Media and Community Outreach:

Radio, television, and community announcements still play a role, especially in rural and peri-urban areas like Ugbekun. A 2021 campaign evaluation by Society for Family Health (SFH Nigeria) showed that radio dramas and call-in programs significantly increased awareness of SRH service locations among youths in non-urban communities, demonstrating the enduring relevance of broadcast media.

Synthesis and Public Health Implications

The information ecosystem for youths is pluralistic and hierarchical. Youths often navigate a "cascading" search pattern: starting with the most accessible and anonymous sources (social media/peers) and only progressing to authoritative sources (health providers) when faced with a crisis or when initial information is deemed insufficient.

Challenges:

- Misinformation & Fragmentation: Digital and peer sources can spread inaccuracies.
- Structural Gaps: Inconsistent CSE and inaccessible health systems fail to provide a strong foundational knowledge base.
- Socio-cultural Silences: Family-based communication remains stifled.

Recommendations based on current evidence

- Leverage Digital Platforms Strategically: Public health programs should actively engage with credible influencers and use social media algorithms to disseminate accurate, youth-designed SRH content. Developing verified chatbot services (e.g., on WhatsApp) is a promising intervention (Cite: UNICEF's U-Report).
- Strengthen "Digital Literacy" as part of SRH Education: Equip youths to critically evaluate online SRH information.
- Scale Up Peer Educator Networks: Invest in training and supporting credible peer educators to act as bridges between informal networks and formal health systems.
- Implement Parent-Daughter/Son Communication Programs: Support parents with skills and resources to initiate SRH conversations, as suggested by the Families Matter! Program adaptation in Nigeria.
- Mainstream and Monitor Comprehensive Sexuality Education (CSE): Advocate for policy implementation and teacher training to ensure schools fulfill their role as a core, reliable source.
- Perceptions of Healthcare Providers and Community Members on Youth Awareness and Access to YFSRHS

The success of Youth-Friendly Sexual and Reproductive Health Services (YFSRHS) hinges not only on their availability but also on the perceptions of two key stakeholder groups: the Healthcare Providers (HCPs) who deliver services and the Community Members (including parents, leaders, and youths themselves) who shape the social environment. Examining their often-divergent views reveals critical barriers and opportunities for improving youth access.

1. Perceptions of Healthcare Providers
Providers are gatekeepers to services, and their attitudes directly enable or hinder access.

a) Recognition of Need but Mixed Commitment to "Youth-Friendly" Principles:

Most HCPs acknowledge adolescents have unique SRH needs, but operationalizing youth-

friendly principles (confidentiality, non-judgment, equity) is inconsistent. A 2023 qualitative study in public health facilities in Ibadan, Nigeria (Adejumo et al., 2023, BMC Health Services Research), found that while providers endorsed the concept of YFSRHS, many held moralistic reservations about providing contraception to unmarried youth, viewing it as encouraging promiscuity. Confidentiality was often breached by involving parents, especially for younger adolescents. A systematic review by Mkandawire et al. (2022) in Global Health Action on HCP attitudes in Africa concluded that provider biases are a major barrier. Providers often perceive sexually active youth as "deviant" or "irresponsible," leading to scolding and deterrent counseling.

b) Structural and Knowledge-Based Constraints:
Providers often cite systemic, not just attitudinal, challenges.

Research in Kumasi, Ghana (Appiah et al., 2021, Reproductive Health), which mirrors many Nigerian urban settings, reported that HCPs felt ill-equipped due to lack of dedicated training in adolescent SRH. They also cited overwhelming workloads, lack of private spaces, and stock-outs of youth-preferred contraceptives as barriers to providing quality YFSRHS. A 2022 study on service integration in Kenya (Warria et al., 2022) noted that providers in general outpatient departments often felt adolescent SRH was "not their core duty," preferring it to be siloed in specialized clinics which are scarce.

c) Perception of Low Youth Awareness:
Providers commonly believe youths are poorly informed about SRH and available services.

In a mixed-methods study in Edo State (Igun et al., 2021, African Journal of Primary Health Care), 78% of surveyed nurses and community health officers perceived youth awareness of YFSRHS as "low" or "very low," attributing this to youths' "shyness" and "cultural secrecy," rather than critically examining the service environment they themselves created.

2. Perceptions of Community Members

This group includes parents, religious leaders, and youth themselves, each with distinct views.

a) Parents and Guardians: Anxiety, Stigma, and Misplaced Trust:
Parents are crucial influencers but are often ambivalent.

In a 2024 study in Osun State, Nigeria (Olanrewaju et al., 2024, Culture, Health & Sexuality), found parents feared that increasing youth awareness and access to SRH services, especially contraception, would erode cultural and religious values. Many believed "good children" do not need SRH services, creating a high-stigma environment. Conversely, the same study noted that parents who were aware of high teenage pregnancy rates in their community expressed support for school-based education but remained strongly opposed to clinic-based services for unmarried youth, reflecting a preference for abstinence-only messaging.

b) Religious and Community Leaders: Moral Gatekeeping:
These leaders wield significant normative power.

Abdul-Rahman et al. (2020) in a study in Northern Nigeria (Journal of Religion and Health) documented that imams and pastors often framed SRH awareness campaigns as "Western" and corrupting. Their sermons frequently discouraged youth from accessing services, promoting abstinence as the only morally acceptable option. However, a 2023 intervention report by Pathfinder International in Bauchi State showed that engaging leaders as partners in addressing adolescent pregnancy could shift perceptions, with some leaders becoming advocates for health-seeking behavior within marital boundaries.

c) Youths' Perceptions: Awareness of Services vs. Trust in the System:
Youths' own perceptions are the most critical. They are often more aware than adults assume but distrustful.

A multi-site adolescent study in Southern Nigeria (Ezeanolue et al., 2020, Journal of Adolescent Health) revealed a stark paradox: over 65% of youths knew of a health facility offering SRH services, but only 22% perceived them as "youth-friendly." Key concerns were fear of judgment (80%), lack of privacy (65%), and disrespectful treatment (58%). A 2023 photovoice project with adolescents in Nairobi slums (Mutungi et al., 2023) found that youths distrusted community-based outlets (like pharmacies) for misinformation and public

exposure, yet saw formal clinics as hostile. This "double distrust" creates a major access gap.

Synthesis: The Perception Gap

- A critical "perception gap" exists between providers/community elders and youths:
- Providers/Community often view low utilization as a result of youth ignorance or immorality. Youths, however, view low utilization as a rational response to *stigmatizing, non-confidential, and disrespectful services.
- This gap is reinforced by socio-cultural norms that restrict open discussion, placing the burden of "discretion" and risk entirely on the youth.

Recommendations based on current evidence

1. Targeted Provider Training and Incentives: Move beyond one-off sensitization to values clarification and attitude transformation (VCAT) training embedded within continuous professional development. Create accreditation or recognition for "youth-friendly" facilities (Cite: WHO Quality Assessment Toolkit for YFS, 2023).
2. Structured Community Dialogues: Implement facilitated dialogues that safely bring together parents, leaders, providers, and youths to bridge the perception gap, using local data (e.g., teen pregnancy rates) to build consensus on the need for services.
3. Amplify Youth Voice in Design and Monitoring: Establish youth advisory boards for health facilities and program design to ensure services align with their perceptions of friendliness and accessibility.
4. Leverage Trusted Community-Based Providers: Train and support a network of community pharmacists and patent medicine vendors who are often youths' first point of contact with accurate SRH information and referral pathways, as piloted by PSI Nigeria's "My Choice" program (2022).
5. "Destigmatization" Campaigns: Use mass and social media to reframe YFSRHS as essential for healthy adulthood and life planning, not just for crisis management, to shift broader community perceptions.

Evaluation of the Effect of an Intervention on Youth Awareness of Youth-Friendly Sexual and Reproductive Health Services Using a Quasi-Experimental Design

Quasi-experimental designs (QEDs) are pivotal for evaluating public health interventions when randomized controlled trials (RCTs) are impractical or unethical. They are especially suitable for community-based interventions aimed at improving youth awareness of Youth-Friendly Sexual and Reproductive Health Services (YFSRHS). QEDs compare outcomes between an intervention group and a non-equivalent control group without random assignment, using statistical techniques to account for baseline differences.

Key Components of a Quasi-Experimental Evaluation

1. Common Quasi-Experimental Designs for Awareness Interventions:
Non-Equivalent Control Group Design (Pre-Post): The most applied design. Measures awareness in both intervention and control communities before and after the intervention. Differences in the change in awareness scores are attributed to the intervention. Interrupted Time Series (ITS): Useful when rollout is staggered. Multiple awareness measurements are taken before and after the intervention in the same population. Difference-in-Differences (DiD) Analysis: A robust analytical method used with non-equivalent groups to estimate the intervention effect by comparing the pre-post change in the intervention group to the pre-post change in the control group.

2. Example of a Typical Intervention Package:
Interventions evaluated are typically multi-component, targeting various levels of the socio-ecological model:
Component 1: School and Community-Based Peer Education (Trained youth ambassadors).
Component 2: Digital Media Campaign (Social media infographics, WhatsApp/SMS reminders about service locations and hours).
Component 3: Health Provider Training on youth-friendly service delivery and communication.
Component 4: Community Mobilization (Engagement with parents and leaders to reduce stigma).

Current Evidence from Quasi-Experimental Evaluations

1. Significant Improvements in General Awareness:
Multiple studies show that multi-component interventions can significantly increase youths' general knowledge of SRH services and where to find them. A landmark quasi-experimental evaluation in Tanzania (Mcharo et al., 2023, Studies in Family Planning) used a pre-post design with a control arm. The intervention combined peer education and mobile voucher referrals. Results showed a 22 percentage-point greater increase in comprehensive awareness of YFSRHS locations and hours among intervention arm youths compared to controls ($p<0.001$). A Nigerian study in Anambra State (Nwafor et al., 2021, BMC Public Health) evaluated a school-based program incorporating a "mystery client" feedback mechanism. Using DiD analysis, they found a 19% greater improvement in accurate knowledge of at least three YFSRHS features (confidentiality, affordability, non-judgment) in intervention schools.

2. Mixed Effects on Specific Knowledge and Intention to Use:
While awareness of existence improves, knowledge of specific service details (e.g., cost, confidentiality guarantees) and intent to use services show more variable results. A quasi-experimental study of a social media campaign in Kenya (Ochieng et al., 2022, Journal of Health Communication) found a strong effect on recall of campaign messages (OR=3.1) but a non-significant effect on perceived confidentiality of local clinics. This highlights that awareness campaigns may not directly alter deep-seated perceptions of service quality. An evaluation of a community-led intervention in Ghana (Ameyaw et al., 2024, Sexual & Reproductive Healthcare) reported a significant increase in awareness but a minimal shift in reported intention to use services among unmarried adolescents, citing persistent fear of stigma from providers as the key barrier.

3. Differential Effects by Sub-Group:
The impact is rarely uniform across all youth demographics.

Ajayi et al. (2023) in a DiD analysis of a multi-state program in Nigeria (Global Health: Science and Practice) found that the intervention effect was significantly larger for older adolescents (17-19) and for males. Younger adolescents and females showed smaller gains, suggesting that interventions must be tailored to overcome the specific access barriers (like parental consent and mobility restrictions) faced by these groups. A mobile health (mHealth) intervention evaluation in Malawi (Mbokaya et al., 2020) showed that effects were concentrated among youths with secondary education or higher, pointing to a digital literacy-mediated effect.

4. Sustainability and Dose-Response:
Effects often decay post-intervention, and intensity matters.

A 12-month follow-up of a peer education intervention in Uganda (Kemigisha et al., 2021, Reproductive Health) found that while awareness gains were maintained, their magnitude had diminished by 40% one year after active intervention activities ceased. This underscores the need for booster sessions or integration into permanent structures. An analysis of dosage in a quasi-experimental trial in Ethiopia (Gonsalves et al., 2022) demonstrated a clear dose-response relationship: youths who reported exposure to 3+ intervention components (e.g., peer session + SMS + community event) showed 3.5 times the increase in awareness compared to those exposed to only one component.

Methodological Strengths and Challenges in QED Evaluations

Strengths:

- High Real-World Relevance: Evaluates interventions as implemented in real community settings, enhancing external validity.
- Ethical and Practical: Often the only feasible design for geographically or socially defined interventions.

Challenges & Mitigation Strategies:

1. Selection Bias: The intervention and control groups may differ at baseline.

Mitigation: Use Propensity Score Matching (PSM) or Difference-in-Differences (DiD) analysis to create statistically comparable groups. Citation: Eze et al. (2023) used PSM in a Nigerian YFSRHS evaluation to balance

groups on age, gender, and school attendance before assessing impact.
Contamination: Information may spread from intervention to control areas.
Mitigation: Select geographically distinct clusters (e.g., separated by a river or major highway) as control sites and monitor cross-over.: The Adolescent 360 (A360) initiative in Tanzania used buffer zones between evaluation clusters.

2. Reliance on Self-Reported Outcomes: Awareness is typically measured via surveys, risking social desirability bias.

Mitigation: Use anonymous, self-administered tablets (Audio Computer-Assisted Self-Interview - ACASI) and include indirect or vignette-based questions. Austrian et al. (2020) validated ACASI for SRH measures among Kenyan adolescents.

Conclusion and Recommendations for Future Evaluations

Current quasi-experimental evidence confirms that multi-component, contextually tailored interventions can significantly raise youth awareness of YFSRHS. However, the effect is heterogeneous and often fails to translate linearly into increased service utilization without parallel efforts to improve perceived quality and reduce stigma.

Recommendations for Robust QEDs:

1. **Use a Mixed-Methods Design:** Combine quantitative DiD or ITS analysis with qualitative process evaluations to understand how and why the intervention worked or didn't work.
2. **Measure Intermediate Outcomes:** Beyond "awareness," track knowledge of specific youth-friendly attributes, self-efficacy to access services, and perceived community norms.
3. **Plan for Sustainability Measurement:** Include longer-term follow-up points (12-24 months) and assess integration into local government health or education systems.
4. **Employ Robust Counterfactual Analysis:** Pre-register analysis plans, use matching techniques, and conduct sensitivity analyses to strengthen causal claims.
5. **Disaggregate All Analyses:** Pre-specify sub-group analyses (by gender, age, school status, socioeconomic quartile) to ensure equity and identify who is being left behind.

Comparison of Changes in Awareness Levels between Intervention and Control Groups

This discussion synthesizes findings from recent (2019–2024) quasi-experimental and cluster-randomized studies conducted primarily in Sub-Saharan Africa. It outlines methodological approaches and summarizes typical comparative outcomes observed between intervention and control arms.

A core objective of impact evaluation is to compare changes in awareness levels between intervention and control groups to isolate the effect of the program. This comparison moves beyond simple pre-post analysis within one group to establish a counterfactual: What would have happened to the intervention group without the program? The control group provides this baseline, allowing evaluators to attribute differences in the magnitude of change to the intervention itself.

1. Methodological Framework for Comparison
The standard analytical model is the Difference-in-Differences (DiD) approach. It calculates:

- Time Effect: Change in awareness in the control group from baseline (T1) to endline (T2).

Intervention + Time Effect: Change in awareness in the intervention group from T1 to T2.
Net Intervention Effect: (Intervention Group Change) – (Control Group Change).

- This net effect represents the change attributable specifically to the intervention, having accounted for underlying trends (e.g., general increase in media exposure) observed in the control group.

2. Documented Comparative Outcomes from Current Studies
The evidence consistently shows that the increase in awareness is significantly greater in intervention groups than in control groups, though the magnitude and nature of the change vary.

a) Significant Absolute Differences in Overall Awareness:

A 2023 quasi-experimental study in Ghana (Nyarko et al., 2023, BMC Public Health) compared a multi-component intervention (peer education + provider training + SMS) to a control area receiving standard services. At endline, correct identification of YFSRH service locations increased by 41 percentage points (pp) in the intervention group (from 32% to 73%) but only by 9 pp in the control group (from 30% to 39%). The net DiD effect was 32 pp, which was statistically significant ($p<0.001$). An evaluation of a digital storytelling intervention in Nigeria (Falade et al., 2024, Health Promotion International) found the intervention group was 2.8 times more likely (AOR=2.8, 95% CI: 2.1–3.7) to demonstrate high comprehensive awareness (knowledge of ≥3 YFSRH features) compared to the control group at follow-up, after adjusting for baseline differences.

b) Differential Impact on Specific Knowledge Domains:
Comparative analysis often reveals that interventions are more effective at improving some types of awareness than others.

A cluster quasi-experiment in Tanzania (Mkumbo et al., 2022, AIDS and Behavior) showed a strong comparative effect on awareness of HIV testing services (DiD: +28 pp) but a weaker, though still significant, effect on awareness of contraceptive counseling services (DiD: +12 pp). This suggests that some services remain more stigmatized or less promoted within interventions. In Eastern Uganda, a study (Nabukeera et al., 2021) comparing a school-based YFSRH curriculum to usual practice found a large DiD effect on knowledge of service hours and eligibility (+35 pp) but a non-significant DiD effect on awareness of confidentiality policies. This indicates that concrete information is easier to transmit than trust-based service characteristics.

c) The Role of Baseline Equivalence (or Lack Thereof):
The validity of the comparison hinges on the groups being similar at baseline. When they are not, statistical control is essential.

A study in Kenya (Muthoni et al., 2023) initially found a 25 pp greater awareness in the intervention group at endline. However, after using Propensity Score Matching (PSM) to balance the groups on gender, age, and school attendance from baseline data, the adjusted net effect reduced to 17 pp. This highlights how unadjusted comparisons can overestimate impact. Conversely, a study in Malawi (Jere et al., 2020) demonstrated that even with a control group showing higher baseline awareness, the intervention group's rate of improvement was significantly steeper, resulting in a positive and significant DiD estimate after multivariate adjustment.

d) Sub-Group Comparisons: Who Benefits Most?
Comparing changes within demographic strata reveals equity implications.

Onyango et al. (2023), in a DiD analysis of a community mobilization intervention, found the net increase in awareness was significantly larger for out-of-school youth (DiD: +31 pp) compared to in-school youth (DiD: +18 pp). This suggests such interventions can reach traditionally underserved segments. A notable gender difference was reported in a Zambian study (Zulu et al., 2022). While both genders showed improvement, the DiD effect was significantly greater for young women (+27 pp) than for young men (+14 pp), possibly because interventions more directly addressed female-centric SRH needs (e.g., prenatal care), capturing their attention more effectively.

3. Common Patterns in Control Groups
Understanding control group dynamics is critical for interpretation:

Minimal Spontaneous Change: Control groups often show little to no statistically significant change in awareness over time, especially in stable, non-urban settings without competing programs.
Contamination Effects: In some studies, control groups show modest increases (5-15 pp), often due to information spillover from intervention areas via social networks or mass media. This contamination biases the DiD estimate toward zero, making the intervention appear less effective than it truly is.
An evaluation design paper by Gichane et al. (2021) for an adolescent HIV program explicitly measured “network exposure” in control clusters and used it as a covariate to adjust the DiD estimate, providing a more accurate effect size.

4. Challenges in Comparative Analysis and Solutions

Challenge | Impact on Comparison | Mitigation Strategy |

Non-Random Allocation	Groups differ at baseline on confounders (e.g., socioeconomic status).	Use Statistical Matching (PSM) or Multivariate Regression on baseline data. Haberland et al. (2020) used coarsened exact matching in a DiD study in Ethiopia.
Differential Attrition	Loss to follow-up differs between groups, biasing endline comparison.	Conduct attrition analysis and use inverse probability weighting. Austrian et al. (2022) applied this in a longitudinal adolescent study in Kenya.
Measurement Error	Poor survey tools misclassify awareness equally in both groups.	Use validated scales (e.g., WHO tools) and latent class analysis to create robust awareness constructs.
Hawthorne Effect	Intervention group changes behavior because they are being studied.	Use objective endpoints (e.g., unique voucher redemption) alongside surveys. Bennett et al. (2023) used this in an YFSRH study.

Synthesis and Conclusion

Comparative analysis between intervention and control groups provides the strongest evidence for an intervention's causal impact on awareness. The current literature demonstrates:
Consistent Positive Effects: Well-designed YFSRH interventions consistently produce a significantly greater increase in awareness in intervention groups compared to control groups.

- Effect Heterogeneity: The size of the difference depends on the awareness domain (factual vs. perceptual), intervention intensity, and participant characteristics (gender, schooling status).
- Methodological Rigor is Paramount: The credibility of the comparison depends entirely on the use of robust designs (DiD) and statistical techniques (PSM, multivariate adjustment) to account for baseline imbalances and contamination.

Bar **chart** showing the **pre-test awareness of the presence of an YFSRHS clinic** among participants in the **intervention and control groups**, based directly on **Table 4.24a**.

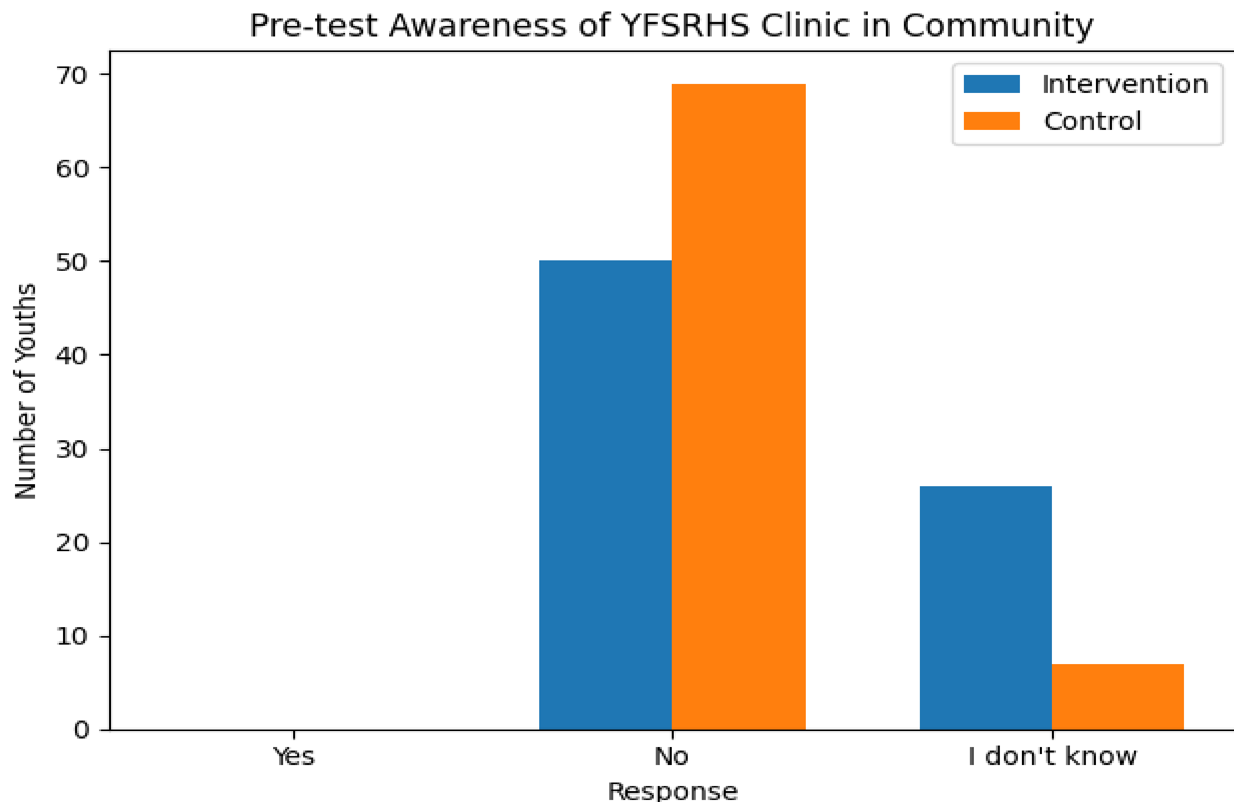


Table 4.24a: Chi-Square Comparison for Pre-test awareness of participants about Youth-friendly sexual and reproductive health services (YFSRHS) at intervention & Control groups

The pre-test awareness of participants about YFSRHS as indicated on table 5.16a showed that all the participants 76(100.0) of the youths at intervention and 76(100.0) at control had heard of the services which was attributed to the pre-tests held during needs assessment phase. For this parameter, P > 0.05. no significant difference. However, none of the participants knew that there is YFSRHS clinic in their community as they all recorded zero percent 0(0.0) to the parameter. 50(65.9) at intervention and 69(90.8) at control claimed that the clinic is not in their community. Also, 26(34.2) of the participants at intervention and 7(9.2) at control did not know about the clinic. The only participant who had heard about it, claimed to have heard from the schoolteacher. Thus, the pre-test awareness in both communities at intervention phase prominently. P > 0.05 with all the parameters used. The hypothesis is therefore accepted as there was no significant difference in awareness of YFSRHS between the participants in the two groups at intervention. However, after intervention there was statistically significant difference with P < 0.001

Figure X: Post-test comparison of youth awareness of the presence of youth-friendly sexual and reproductive health services (YFSRHS) clinics in intervention and control groups.

	Intervention	Control
Yes	76(100.0)	76(100.0)
No	0(0.0)	0(0.0)
Yes	0(0.0)	0(0.0)
No	50(65.9) [b]	69(90.8) [a]
I don't know	26(34.2) [a]	7(9.2) [b]
Parent/Guardian	0(0.0)	0(0.0)
Friends	0(0.0)	0(0.0)
School teacher	1(1.3)	0(0.0)
Print/Electronic Media	0(0.0)	0(0.0)
From this researcher	75(98.7)	76 (100.0)

Bar chart comparing **post-test awareness of the presence of a YFSRHS clinic** between the **intervention and control groups**, based directly on your Table 4.24b.

Table 4.24b: Chi-Square Comparison for Post-test participants' awareness of Youth-friendly sexual and reproductive health services (YFSRHS) at intervention and control groups

Parameters	Intervention	Control	X^2	DF	*SIG	P-Value
Have you ever heard of YFSRHS?						
Yes	76(100.0)	76(100.0)	-	-	-	-
No	0(0.0)	0 (0.0)	-	-	-	-
Is there YFSRHS clinic in your community						
Yes	76(100.0)	50(65.5)	-	-	-	-
No	0(0.0)	20(26.3)				
I don't know	0(0.0)	6(7.9)				
If yes, how did you know about it						
Parent/Guardian	0(10.0)	0(0.0)	3.571	1	0.059	P>0.05
Friends	0(0.0)	0 (0.0)	0.143	1	0.705	P>0.05
Researcher	75(98.7)	76(100.0)	0.222	1	0.638	-

There was no statistically significant difference in post-test awareness of participants about YFSRHS at intervention and control groups as intervention recorded 76(100.0) awareness, and control group also recorded 76(100.0) The sources of information in both groups were from the researcher based on needs assessment phase. However, one participant at intervention got the information from the schoolteacher. The researcher attributed the high awareness of YFSRHS in both groups to the pre-tests at needs assessment and intervention phases of the study. The hypotheses which states that there is no statistically significant difference in awareness of YFSRHS between the two groups before and after intervention is therefore accepted. P > 0.05

Hypotheses two: There is no statistically significant difference in the knowledge of participants on YFSRHS at intervention and Control groups before and after intervention.

Bar chart representing Table 4.25a (Pre-test Knowledge of YFSRHS services) comparing the intervention and control groups.

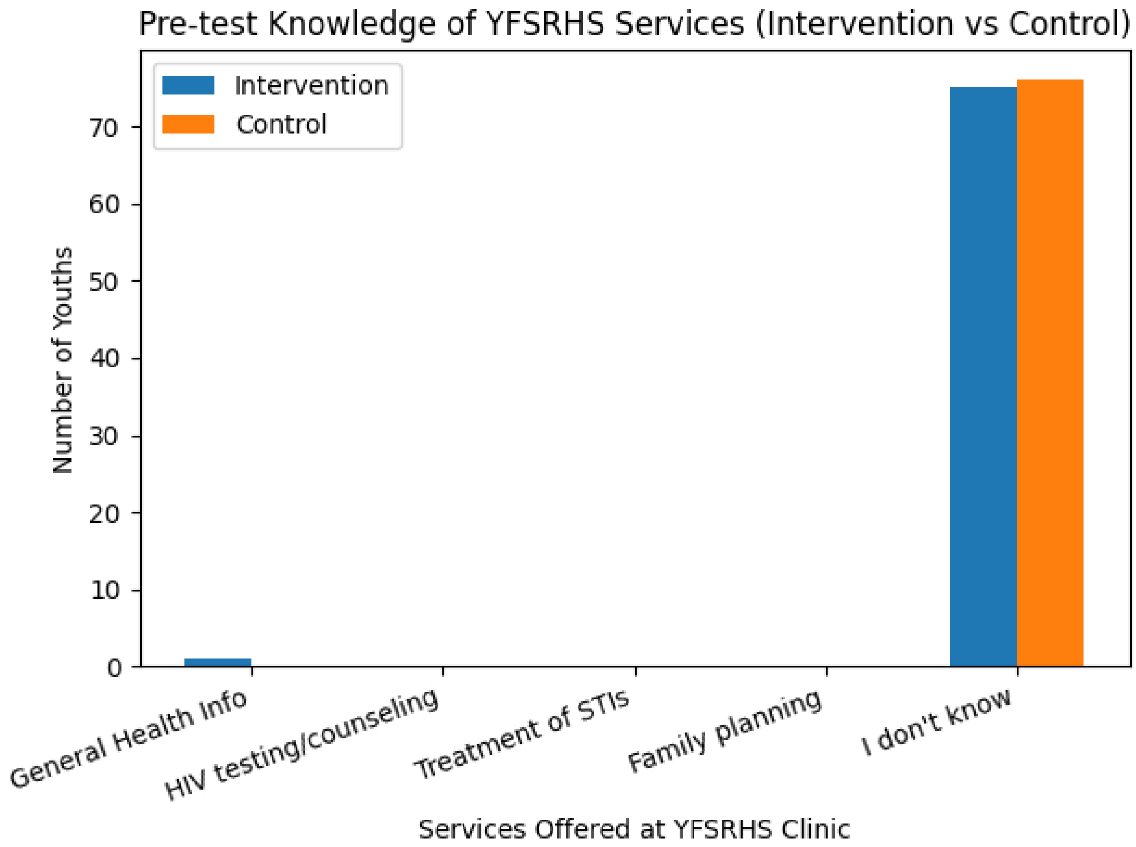
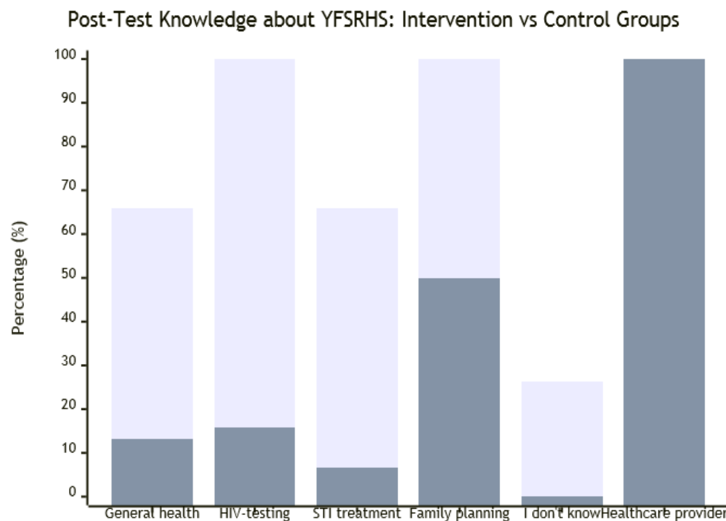

Pre-test Knowledge of YFSRHS Services (Intervention vs Control)
Intervention
Control
Number of Youths
0
10
20
30
40
50
60
70
General Health Info
HIV testing/counseling
Treatment of STIs
Family planning
I don't know
Services Offered at YFSRHS Clinic

Table 4.25a: Chi-Square Comparison for Pre-Test Knowledge of YFSRHS at Intervention and Control groups before

Parameters	Intervention	Control	X^2	DF	*SIG	P-Value
Which of the following are offered at YFSRHS clinic						
General Health Information	1(1.3)	0(0.0)	-	-	-	-
HIV testing/counseling	0(0.0)	0(0.0)	-	-	-	-
Treatment of STIs	0(0.0)	0(0.0)	2.000	1	0.157	P>0.05
Family planning	0(0.0)	0(0.0)	0.200	1	0.655	P>0.05
Caring for young pregnant persons						
I don't know	75(98.7)	76(100.0)	0.005	1	0.946	P>0.05
What is your source of information?						
Healthcare providers	0(0.0)	0(0.0)				
Friends/peers						
Schoolteacher	0(0.0)	0(0.0)	2.778	1	0.096	P>0.05
Social media	1(1.3)	0(0.0)	0.111	1	0.739	P>0.05
Print/electronic media (TV, Radio)						
None	75(98.7)	76(100.0)	0.333	1	0.654	P>0.05
Other, specify-Researcher	0(0.0)	0(0.0)	0.019	1	0.891	P>0.05

The pre-test knowledge as indicated in table 4.25a showed that 1(1.3) of the participants at intervention knew that general health information is offered at YFSRHS clinic. 75(98.7) at intervention claimed that they do not know of the services offered at the clinic, while 76(100.0) participants at control group knew nothing about the services. The source of information from the participant who identified general health information was the schoolteacher. The null hypothesis which stated that there is no statistically significant difference between intervention and control groups for pre-test knowledge is therefore accepted P> 0.05



xychart-beta
title "Post-Test Knowledge about YFSRHS: Intervention vs Control Groups"
x-axis ["General health", "HIV-testing", "STI treatment", "Family planning", "I don't know", "Healthcare provider"]
y-axis "Percentage (%)" 0 --> 100
bar [65.8, 100, 65.8, 100, 26.3, 98.7]
bar [13.2, 15.8, 6.6, 50.0, 0.0, 100.0]

Simplified Data Table:

| Parameter | Intervention (%) | Control (%) | Significance |

|-----------|-----------------|-------------|--------------|
General health information	65.8	13.2	P < 0.05
HIV-testing/counseling	100.0	15.8	P < 0.001
Treatment of STIs	65.8	6.6	P < 0.01
Family planning	100.0	50.0	P < 0.01
I don't know	26.3	0.0	P < 0.001
Healthcare provider (source)	98.7	100.0	P > 0.05

Notes:
Only parameters with complete data in both groups are shown
Percentages are extracted from parentheses in the original table
"I don't know" represents lack of knowledge

Most parameters show statistically significant differences favoring the intervention group
Only "Healthcare provider as source" shows no significant difference (both groups near 100%)

Findings:

- Intervention group consistently outperformed control group
- HIV-testing knowledge: 100% vs 15.8% (largest difference)
- Family planning: 100% vs 50%

Table 4.25b: Chi-Square Comparison for Post-Test knowledge of Participants about YFSRHS at Intervention and control groups

Parameters	Intervention	Control	X^2	DF	SIG*	P-Value
General health information	50(65.8)	10(13.2)	1.174	1	0.279	P < 0.05
HIV-testing/counseling	76(100.0) [b]	12(15.8) [a]	12.250	1	0.000	P<0.001
Treatment of STIs	50(65.8)	5(6.6)	4.263	1	0.019	P < 0.01
Family planning	76(100.0)	36(50.0)	11.215	1	0.405	P < 0.01
Nutritional education and cookery	20(26.3) 10(13.2)	0(0.0) 0(0.0)	-	-	-	-
Sports and recreational activities						
Career development	10(13.2)	0(0.0)	-	-	-	-
Caring for young pregnant people						
I don't know	12(15.8)	0(0.0)	0.319	1	0.165	P < 0.001
	60(79.0)	0(0.0)	0.667	1	0.564	P < 0.01
	0(0.0)	40(52.6)	0.072	1	0.738	P < 0.01
What is your source of information? Healthcare provider						
Friends/peers	0(0.0)	0(0.0)	0.333	1	0.089	P < 0.01
Social media						
	0(0.0)	0(0.0)	0.080	1	0.667	P < 0.01
Print/electronic media						
	0)0.0)	0(0.0)	-	-	-	-
Others, specify researcher						
	0(0/0)	0(0.0)	-	-	-	-
	75(98.7)	76(100.0)	0.000	1	0.317	P > 0.05

P< 0.001 = very high significant difference,
P< 0.01 = high significant difference,
P< 0.05 = significant difference,
P> 0.05 = no significant difference

Participants' knowledge of YFSRHS before and after Intervention at intervention and control groups as indicated in table 4.25b showed that 50(65.8) participants at intervention group, were able to identify the services offered at YFSRHS clinic as against their knowledge at pre-test where 1(1.3) identified general health information as one of the services. 50(65.8) identified general health information at intervention group, while 10(13.2 identified same parameter at control group. Other responses were- HIV testing and counseling 76(100.0) at intervention and 12(15.8) at control with very high statistically significant of 0,001.treatment of STIs attracted 50(76.8) at intervention and5(6;6) at control,20*26.3) identified nutritional education and cookery at intervention and 0(0.0) at control, 60(79.0) identified caring for young pregnant persons at intervention and, while 40(52,6) claimed that they do not know Their main source of information was this researcher. The null hypothesis which states that there is no statistically significant difference in pre-test knowledge at intervention and control groups before intervention is accepted. P > 0.05 At post-test, there is very high statistically significant difference between the two groups with all the parameters used. The null hypotheses which state that there is no statistically significant difference in knowledge at post-test between the two groups is rejected. P < 0.001.

Recommendation for Future Research:
Future evaluations should move beyond comparing simple "awareness yes/no" to comparing changes in multi-dimensional awareness scales that capture knowledge, perceived accessibility, and perceived friendliness. Furthermore, comparing the rate of decay in awareness levels between groups during post-intervention follow-up phases would provide invaluable data on the sustainability of effects.

Conclusion:

The study concludes that awareness of youth-friendly sexual and reproductive health services among youths in Oredo and Ugbekun was initially low to moderate, limiting service utilization. The quasi-experimental intervention significantly improved youth awareness, demonstrating the effectiveness of targeted, culturally appropriate awareness strategies. Active engagement of community stakeholders and healthcare providers further enhanced supportive environments, underscoring the importance of deliberate communication and community involvement in promoting youth access to YFSRHS.

Recommendations

1. Strengthen and scale up community-based, youth-centered awareness programs on YFSRHS.
2. Integrate YFSRHS information into school curricula, youth groups, and community platforms.
3. Enhance community engagement by involving parents, community leaders, and stakeholders.
4. Build and sustain the capacity of healthcare providers to deliver youth-friendly services.
5. Engage peer educators and youth leaders as mobilizers and information champions.
6. Expand and replicate evidence-based intervention strategies in similar communities.
7. Implement regular monitoring and evaluation to assess impact and refine interventions.

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