# STRATEGIES TO FACILITATE SAFE SEXUAL PRACTICES IN ADOLESCENTS THROUGH INTEGRATED HEALTH SYSTEMS IN SELECTED DISTRICTS OF ZIMBABWE


**BY**

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# Declaration

I **Wilfred Njabulo Nunu (17023786)** declare that this thesis submitted by myself titled "***Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe***," has not been submitted previously for a degree at this or any other university, that it is my work in design and execution, and that all reference material contained therein has been duly acknowledged.

**Signature:**  **Date:** 10/04/2021

# Preface

Adolescents in any nation are the future of tomorrow, and their health is of significant concern to most stakeholders. Many strategies have been put in place to improve adolescent sexual health outcomes, with notable improvements observed in the comparison of sexual behaviours that have evolved from the 1950s to the 21st century. Most Sub-Saharan African countries, including Zimbabwe, have made considerable progress even though grey areas need to be addressed to improve adolescent sexual health outcomes. This thesis is presented in article format and comprises three sections: Section A presents the thesis overview, Section B provides the manuscripts/articles with their journal guidelines for authors and Section C presents the conclusion, limitations and recommendations of the thesis.

**Section A: Thesis Overview**

**Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe: a mixed-method study protocol**

This paper presents the study protocol that details the background, problem statement, and objectives of this study. The paper further offers a detailed outline of the research methods used to gather and interrogate the data. The paper was published in BMC's Journal of Reproductive Health.

**Section B: Papers/Articles**

This section has a total of six papers as detailed below:

**Health System Strategies and Adolescent Sexual Health: a systematic review of the literature using Rodgers Concept Analysis Framework**

This paper reviewed the literature on the relationship between Health Systems Strategies and Adolescent Sexual Health issues guided by Rodger's evolutionary concept analysis framework. The paper further developed a Conceptual Framework that guided this thesis inquiry and presentation. The review paper was submitted to Elsevier's Journal of Adolescent Health and is under review.

**Indigenous Health Systems and Adolescent Sexual Health in Umguza and Mberengwa Districts of Zimbabwe: Community Key Stakeholders' Perspectives**

This paper was a qualitative inquiry that sought to explore different key community stakeholders' role in adolescent sexual health-related issues. This paper also sought to gain insights into what needed to be done to integrate Indigenous Health Systems and Modern Health Systems in the management of Adolescent Sexual Health issues and the foreseen challenges thereof. This study further solicited for ways that these anticipated challenges could be overcome. This paper utilised a qualitative cross-sectional study design, and data was collected from the respondents through interviews and ad Focus Group Discussions. This paper is going to be submitted to the BMC Journal of Public Health.

**Health Service Providers' Perspectives on the influence of Modern Health Systems on adolescents' sexual health practices in Umguza and Mberengwa districts of Zimbabwe**

This paper explored the role that is played by Modern Health Systems in the management of ASH issues. The paper further challenged the health service providers to identify specific Indigenous Health System factors to be incorporated or integrated into the modern health system to improve Adolescent Sexual Health outcomes. Respondents were also probed on the challenges they foresaw in this possible integration and how best the benefits could be harnessed to outweigh the challenges. This study was a qualitative cross-sectional study that utilised interviews to collect data from the respondents. The data were then transcribed, coded, and thematically analysed. This paper was submitted to the Elsevier's International Journal of Nursing Studies and is under review.

**Health Systems Utilisation and adolescent sexual health practices in Umguza and Mberengwa districts in Zimbabwe**

This paper sought to establish the extent of the influence of Indigenous Health Systems and MHS in moulding adolescent sexual behaviours. A quantitative cross-sectional survey was conducted on a total of 730 respondents in Mberengwa (370) and Umguza (360), who responded to a semi-structured questionnaire. Quantitative inferential statistics were employed to determine the relationship between different variables/ aspects of the Health systems and how they influenced adolescent sexual behaviours. This paper was submitted to Elsevier's Journal of Adolescent Health and is under review.

**Developing strategies for integrating Indigenous Health and Modern Health systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe**

This paper sought to develop strategies to facilitate Indigenous Health System and Modern Health System integration for improved management of Adolescent Sexual Health issues. This paper starts by merging the data from the qualitative and quantitative papers to get a broader overview and understanding of how health systems are structured and how they have impacted on Adolescent Sexual Health issues management. A Strengths, Weaknesses, Opportunities, and Threats framework is applied to the merged results to evaluate systems performance and identify potential areas for integrating the Indigenous Health System and Modern Health System. The basic Logic framework is then used to determine resources and contextual issues that need to be considered in developing a sound strategy basing on the outcome of the Strengths, Weaknesses, Opportunities, and Threats analysis. After that, the Build, Overcome, Eliminate, and Minimise model is applied in developing the strategy. The objective would be to build a strategy that overcomes, minimises and eliminates potential threats to this integration and improves Adolescent Sexual Health outcomes. This paper's primary output would be strategies that would facilitate the integration of Indigenous Health System and Modern Health System. This paper was submitted to BMC's Journal of Public Health and is under review.

**Validating developed strategies for integrating Indigenous Health and Modern Health systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe**

This paper would be a follow up to the strategy development paper. The developed strategies are subjected to validation by different stakeholders. Firstly, the developed strategies are subjected to the Delphi Technique. The Delphi technique involves forecasting and assessing if the proposed strategies would meet the future's intended objectives. Twenty experts in the field of health systems, policies, and Adolescent Sexual Health were recruited and appraised of the study and subsequently developed strategies. The team of experts critiqued and evaluated these strategies and offered feedback. The feedback is taken into consideration, and strategies are refined before being presented to key stakeholders in the communities for their input as well. All the feedback is incorporated, and refined strategies are the outputs of this paper. This paper was submitted to BMC's Journal of Public Health and is under review.

**Section C: Conclusion, Recommendation and Thesis Limitations**

This last section presents conclusions from this thesis, makes vital recommendations and presents the limitations taking into consideration all that is presented in the sections and is informed by the whole research process.

# Publications

1. **Nunu, W.N.**, Makhado, L., Mabunda, J.T. & Lebese, R.T. Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe: a mixed-method study protocol. *Reprod Health 17, 20 (2020).* https://doi.org/10.1186/s12978-020-0862-y.
2. **Nunu, W.N.**, Makhado, L., Mabunda, J.T. & Lebese, R.T. Health System Strategies and Adolescent Sexual Health: a systematic review of the literature using Rodgers Concept Analysis Framework. *Elsevier's Journal of Adolescent Health (Under Review).*
3. **Nunu, W.N.**, Makhado, L., Mabunda, J.T. & Lebese, R.T. Indigenous Health Systems and Adolescent Sexual Health in Umguza and Mberengwa Districts of Zimbabwe: Community Key stakeholders' Perspectives. *BMC's Journal of Public Health (Under Review).*
4. **Nunu, W.N.**, Makhado, L., Mabunda, J.T. & Lebese, R.T. Health Service Providers' Perspectives on the influence of Modern Health Systems on adolescents' sexual health practices in Umguza and Mberengwa districts of Zimbabwe. *Elsevier's International Journal of Nursing Studies (Under Review).*
5. **Nunu, W.N.**, Makhado, L., Mabunda, J.T. & Lebese, R.T. Health Systems Utilisation and adolescent sexual health practices in Umguza and Mberengwa districts in Zimbabwe. *Elsevier's Journal of Adolescent Health (Under Review).*
6. **Nunu, W.N.**, Makhado, L., Mabunda, J.T. & Lebese, R.T. Developing strategies for integrating Indigenous Health and Modern Health Systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe. *BMC's Journal of Public Health (Under Review)*.
7. **Nunu, W.N.**, Makhado, L., Mabunda, J.T. & Lebese, R.T. Validating developed strategies for integrating Indigenous Health and Modern Health Systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe. *BMC's Journal of Public Health (Under Review)*.

# Abstract

***Background:*** Zimbabwe has the highest teenage pregnancy rate in Sub-Saharan Africa. Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome prevalence in adolescents that are from tribes that perform cultural initiations and subscribe to certain norms are higher than the national prevalence, which is estimated at 12% (18% and 13.6% respectively) in Zimbabwe. Indigenous Health Systems and Modern Health Systems in Zimbabwe run parallel, thereby introducing challenges in managing adolescent sexual health due to conflicts.

***Aim:*** This study sought to develop strategies to facilitate the integration of Indigenous Health Systems and Modern Health System in Mberengwa and Umguza districts. The specific objectives were to: Explore Indigenous Knowledge that influences sexual experiences of adolescents; Assess the role played by different stakeholders in communities that influence adolescent development and sexual experiences; Establish the extent of influence of Indigenous Health Systems and Modern Health Systems on adolescent sexual behaviours; Develop strategies that leverage on empirical evidence to enhance Health Systems performance regarding the management of adolescent sexual issues, and to Validate the developed strategies.

***Methods:*** This research was conducted in two phases. The first phase utilised a concurrent triangulation mixed methods design with both qualitative and quantitative approaches. The findings from the qualitative and quantitative approaches were merged through a comparison of findings side by side. The second phase focused on developing and validating strategies that facilitated the integration of Indigenous Health Systems and Modern Health Systems. The Strengths, Weaknesses, Opportunities, and Threats analysis was applied to interfaced findings from phase one. The Basic Logic and the Build, Overcome, Explore, and Minimise models was used to develop strategies based on the Strengths, Weaknesses, Opportunities, and Threats findings. The developed strategies were validated by applying the Delphi technique and administration of checklist to selected key stakeholders through organised workshops.

***Results:*** Through the qualitative inquiry, key attributes, antecedents, and consequences of Health System Strategies on Adolescent Sexual Health were identified. Strategies to Improve Adolescent Sexual Health outcomes were also identified. It was also observed that different stakeholders play varied roles in the upbringing and support of adolescents. However, there are

contradicting teachings from the Indigenous Health System and Modern Health System. Findings also showed that it was possible to integrate these two systems. However, there were foreseen logistical challenges and clashes in the values and belief systems of the two systems. Umguza district had a significantly higher prevalence of pregnancies, Sexually Transmitted Infections, and a higher number of adolescents who were engaging in sexual activities. Predictors of Sexually Transmitted Infections and pregnancies were the sex of respondent, tribe, sexual encounters, age, and religion. Furthermore, a total of five strategies were proposed to facilitate this integration, and these included revival of committees that were inclusive of all stakeholders; allocating Indigenous Health System space in clinics to work in; establishing adolescent-friendly clinics; intensifying information dissemination on sexual health-related issues; and developing clear Terms of Reference and procedures to govern this integration and ensure it is a success. During strategy validation, experts suggested minor changes to one strategy, and agreed with the other four strategies. The majority of key stakeholders (97%) endorsed the proposed strategies. The strategies were, therefore, refined and presented as per the suggestions of these consulted actors.

***Conclusions:*** Adolescents are at risk of contracting Sexually Transmitted Infections and impregnating as they engage in risky sexual behaviours as evidenced by the findings. The two districts have a significantly higher prevalence of adolescents having sex than the national average. Different contextual factors influence policy changes, and the consequences are mixed, with both positive and negative outcomes. There is a window of opportunity to pursue the suggested ways of integrating Indigenous Health System and Modern Health System for improved Adolescent Sexual Health outcomes. Implementing these strategies could facilitate this integration and ensure that programs are planned and implemented in a complementary manner, thereby reducing conflicts between the two systems and ensuring collaborative efforts towards shared goals that would transform to better Sexual Health outcomes for adolescents. Therefore, these strategies must be piloted and implemented in the two districts, monitored and evaluated. If they yield positive results in as far as Adolescent Sexual health-related issues are concerned, implementation must be expanded to other districts that have a similar setup.

**Keywords:** Adolescents, Health System, Safe Sexual Practices, Strategies, Umguza, Mberengwa, Zimbabwe.

# Dedications

"*Some people come into our lives and quickly go. Some stay for a while and leave footprints on our hearts, and we are never ever the same after they leave us.*"

***Flavia Weedn***

I dedicate this work to my late brother and best friend **Fortune Nyikadzino Mukozho** (*18-08-1992 to 24-12-2018*). I value the contribution you made towards the successful completion of this work. You took the time to take over some of my chores and enabled me to free up some time to do my studies. You would always encourage me to soldier on even in difficult times. We would sit and discuss everything about life and embark on different agendas together. With your passing, my life has never been the same. Sadly, you did not live to see the day this work was completed and see me graduate. Lala ngoxolo bafoe sobuye sibonane kwelizayo (May your soul rest in eternal peace, my brother, till we meet again).

"*What you help a child to love can be more important than what you help him to learn"*

***African Proverb***

I also dedicate this work to my Mother, **Elizabeth Sidudla Nunu (nee Mpofu).** It has not been an easy road. With the limited resources, we had as a low-income family, this is a significant stride in our lives. It started through your inspired teachings; mum, you had your way of stimulating an interest in a person like being schooled. As a primary school student, you ensured that I grasp the critical concepts needed to make sense of different issues and pass; the skill I treasured and valued throughout the various learning stages. Together with my sister, you taught us to read in a relaxed environment where we were not aware we were undergoing some intense schooling. I remember every day as a rural family through you; we would borrow different novels from my primary school (both English and Ndebele) that we would take turns reading aloud with my sister as you listened and corrected us. It was a form of entertainment as we would get absorbed in the stories in the novels and visualise everything as we read. To you, it was a form of teaching which was exciting and stimulated interest and voluntary participation. Your teaching method created an eagerness to learn, love school, and seek to understand anything presented to me and improve my analytic skills. I was motivated and looked forward to our reading sessions; above it all, I had the incentive to read and discuss what we would have read in those novels and air our views and debate openly about it. This created independent

thinking on my part as you would always ask me to justify my opinions and, we would argue as I try to you.

"*Behind every successful man, there is a strong, wise, and hardworking woman.*"

***Groucho Marx***

My wife **Buhlebenkosi Nunu (nee Ncube)**, you have been my cheerleader through thick and thin and the person who would read everything I write. One thing that made me a better person in my writing was your constant questioning and brutal critique of anything and everything I wrote. It was stressful because sometimes, I would be prompted to question my line of thinking and go back and forth with issues I would have presented. The support you gave me throughout the research project was significant and well appreciated. I can safely say we did it STUMBO.

*"Our dead are never dead to us until we have forgotten them".*

***George Eliot***

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- ✓ Lastly, those that are not mentioned or those that I have omitted may I take this opportunity to recognise all that played a role in the successful completion of this research.

# List of Acronyms and abbreviations

| | |
|---|---|
| AIDS | Acquired Immunodeficiency Syndrome |
| ART | Anti-Retroviral Therapy |
| ARV | Antiretroviral |
| ASH | Adolescent Sexual Health |
| ASRH | Adolescent Sexual Reproductive Health |
| BCC | Behaviour Change Communication |
| BLM | Basic Logic Model |
| BOEM | Build, Overcome, Eliminate and Minimise |
| CF | Conceptual Framework |
| CI | Confidence Interval |
| COVID-19 | Coronavirus Disease 2019 |
| EHPs | Environmental Health Practitioners |
| FGDs | Focus Group Discussions |
| HIV | Human Immunodeficiency Virus |
| HS | Health System |
| HSB | Health Services Board |
| HSP | Health Service Provider |
| HSPs | Health Systems and Policies |
| HSS | Health System Strategy |
| IHS | Indigenous Health System |
| IK | Indigenous Knowledge |
| IKS | Indigenous Knowledge Systems |

| | |
|---|---|
| IMCI | Integrated Management of Childhood Illnesses |
| LMCIs | Low and Middle Income Countries |
| MHS | Modern Health Systems |
| MLR | Multiple Logistic Regression |
| MOHCC | Ministry of Health and Child Care |
| MRCZ | Medical Research Council of Zimbabwe |
| NGOs | Non-Governmental Organisations |
| NHS | National Health System |
| NUST | National University of Science and Technology |
| PHC | Primary Health Care |
| RP | Reproductive Health |
| SH | Sexual Health |
| SLR | Stepwise Logistic Regression |
| STIs | Sexually Transmitted Infections |
| SWOT | Strengths, Weaknesses, Opportunities and Threats |
| TB | Tuberculosis |
| ZIMPHIA | Zimbabwe Population-Based HIV Impact Assessment |
| ZINATHA | Zimbabwe National Traditional Healers Association |
| ZNSA | Zimbabwe National Statistics Agency |

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# Conceptual and Operational definition of terms

- **Strategies** - A strategy is defined as a plan implemented to attain set goals or objectives (Freedman, 2013). In this study, a strategy would be defined as developed guidelines that are implementable and could result in improved Adolescent Sexual Health outcomes.

- **Adolescents**- An adolescent is defined as a young person who is in the process of developing from a youngster into an adult (Hegamin-Younger & Merrick, 2017). The World Health Organization defines an adolescent as a young individual between the ages of 10 to 19 years (Bassani, 2012). Therefore in this study, an adolescent would be defined as a young person who is in the age group of 10 to 19 years.

- **Health System**- A Health System is defined as the organisation of people, institutions, and resources that deliver health care services in a specific area and context (Greer, Wismar, & Figueras, 2016). In this research, a Health System would be defined about the two types of systems (Indigenous Health System and Modern Health System): The Indigenous Health System would refer to the traditional health system that is community-based and leverages on cultural norms and practices to manage Adolescent Sexual Health related issues. The MHS would refer to the conventional HS that is offered through Primary Health Care and manned by trained Health Service Providers in the selected districts that are under study.

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# Section A: **Thesis Overview**

# Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe: a mixed-method study protocol

**Published as:**

Nunu, W.N., Makhado, L., Mabunda, J.T. & Lebese, R.T. Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe: a mixed-method study protocol. Reprod Health 17, 20 (2020). https://doi.org/10.1186/s12978-020-0862-y.

See **Appendix 15** for Author Guidelines.

**0.0 Abstract**

**Background:** Zimbabwe has the highest teenage pregnancy rate in Sub-Saharan Africa. Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome prevalence in adolescents from tribes that perform cultural initiations and subscribe to certain norms is higher than the national prevalence (18% and 13.6% respectively), which is estimated at 12% in Zimbabwe. Indigenous Health Systems and Modern Health Systems in Zimbabwe run parallel, thereby introducing challenges in managing adolescent sexual health due to conflicts. This study sought to develop strategies to facilitate the integration of Indigenous Health Systems and Modern Health System in Mberengwa and Umguza districts.

***Methods:*** This research was conducted in two phases. The first phase would utilise a concurrent triangulation mixed methods design with both qualitative and quantitative approaches. The findings from the qualitative and quantitative approaches would be merged through a comparison of findings side by side. The second phase would focus on developing and validating strategies that would facilitate the integration of Indigenous Health Systems and Modern Health System. The Strength, Weakness, Opportunity, and Threat analysis would be applied to phase one's interfaced findings. The Basic Logic and the Build, Overcome, Explore, and Minimise models would then develop strategies based on the Strength, Weakness, Opportunity, and Threat findings. The developed strategies would be validated by applying the Delphi Technique and administration of checklist to selected key stakeholders through organised workshops.

***Discussion:*** There have been no known studies found in the literature that explored the possibility and developed strategies for integrating Indigenous Health Systems and Modern Health Systems to promote safe sexual practices in adolescents. Most programmes on sexual health have ignored the role of Indigenous Health Systems and Modern Health Systems in influencing safe sexual practices leading to them failing to attain desired goals. A lot of emphases have been targeted at minimising the spread of Sexually Transmitted Infections by advocating for utilisation Modern Health Systems rather than focussing on integrating systems meant to manage Adolescent Sexual Health related issues. The study protocol was approved by the University of Venda Ethics Committee Registration (**SHS/19/PH/17/2608**) and the Medical Research Council of Zimbabwe (**MRCZ/A/2611**).

**Keywords:** Adolescents, Health System, Safe Sexual Practices, Strategies, Umguza, Mberengwa, Zimbabwe.

### 0.1 Plain English Summary

In Zimbabwe, there is the existence and recognition of two health systems: the modernised health systems that are mannered by trained health service providers and the Indigenous one that is mannered by traditional healers' leverages on culture and customs. It has been noted that adolescents from communities that observe cultural practices and norms have a higher prevalence of Sexually Transmitted Infections and pregnancy. The two mentioned health systems work in parallel and do not complement each other. Therefore, this study sought to develop strategies that would facilitate the integration of these two health systems to improve Adolescent Sexual Health outcomes. The study was conducted in two phases, that is, and the first phase would involve the collection and analysis of data from key stakeholders in adolescent sexual health. The second phase would leverage the findings from phase one to develop strategies that would facilitate the integration of the two systems to complement each other. Furthermore, in this phase, the developed strategies would be validated through stakeholder engagement. Therefore, this study provides a window of opportunity for improvement of adolescent sexual health outcomes through complementary integrated systems.

## 1.0 Background

Health Systems (HSs) play significant roles in shaping people's perspectives regarding different issues in life [1]. These are influenced by various societies' characteristics that present with different contextual factors regarding Adolescent Sexual Health (ASH) [2, 3]. HSs arrangement is contextual and specific to a particular culture and society, which influences its performance regarding ASH issues [4, 5]. Human beings gather knowledge for two specific purposes in life, namely, meaning and survival [6]. Humans can, therefore, process and analyse the experiences and arrive at a decision whether or not to adopt or adapt specific strategies that would enable them to survive [1, 7]. It should be noted that adolescents are still at developmental stages; most of their decisions are influenced by the environment that surrounds them [8, 9]. They learn and shape their preferences using some experiences from their surrounding environment, which shapes their attitudes and behaviours towards their sexuality [8].

Some practices create rifts between adolescents and their parents, leading to no-dialogue on sexual issues as some methods predispose some populations to Sexually Transmitted Infections (STIs) [10, 11]. This communication breakdown creates a challenge as adolescents are not given enough information about sexual health, thereby predisposing them to risky sexual practices [10, 12]. A study conducted by Mavundla in 2009 on Xhosa men in South Africa revealed that being circumcised was regarded as a rite of passage from childhood to manhood [13]. Circumcision is, therefore, often confused by adolescents where they exhibit careless behaviour after as they deem themselves, adults. Adolescents end up being encouraged to make bad choices, risky sexual behaviours and often infection with STIs [13].

The National Adolescent fertility study (2015) reported that 58.4% of adolescent pregnancies in Zimbabwe were associated with cultural practices such as forced / early teenage marriage, traditional cleansing, wife pledging, and Human Immunodeficiency Virus (HIV) cleansing [14]. Such practices (from Indigenous Health Systems (IHS)) are imposed on adolescents and have harmful effects on their sexual health. In Mberengwa and Umguza Districts, teenage pregnancy rates were pegged at 17.7% and 23.6%, respectively, against the National average of 12% in 2012 [15]. These two districts still practice cultural initiations on adolescents and have a high prevalence of STIs as compared to the national average [14, 16]. Adolescent HIV and AIDS prevalence in indigenous and cultural populations are higher than the widespread national prevalence (18% and 13.6%, respectively) [17, 18].

In Zimbabwe, there has been a joined-up effort in trying to improve ASH [16]. There are programs such as condom distribution in schools, access to free family planning services, and awareness campaigns conducted by health service providers [14, 19, 20]. Though these services are available, barriers such as religion, culture, and adolescent unfriendly health institutions have reduced access to these services by adolescents [21]. In Zimbabwe, it has been noted that adolescents in districts that rely mainly on IHS and practice cultural initiations have a higher prevalence of STIs and teenage pregnancy [14]. Since Zimbabwean independence in 1980, the two health systems (IHS and MHS) have been recognised by the government. However, collaborations remain incredibly minimal, with the two HSs running parallel [17, 18]. This situation has created tensions and conflicts as, in most cases, Traditional Health Practitioners (THPs) and Health care workers do not work together to benefit adolescents. In many instances where indigenous people's traditions and beliefs are questioned, they tend to shun away from MHSs. The majority of Zimbabweans rely on IHS for their health care.

Zimbabwe lacks a comprehensive HS that integrates the IHS and MHS to cultivate complementary efforts. The two systems operate in a parallel manner, which creates conflicts if one system oversteps the other. It has been noted that adolescents in districts that rely mainly on IHS and practice cultural initiations have a higher prevalence of STIs and teenage pregnancy. The 2010-2015 Adolescent Sexual and Reproductive Health strategy was centred on behaviour change communication, life skills and livelihoods, youth-friendly service delivery, policy and advocacy, and coordination [20]. The 2016-2020 strategy leveraged on the experiences of the 2010-2015 plan and tries to increase safe sexual practices, increase uptake of Sexual and Reproductive Health (SRH) services and strengthen the measures to ensure a safe environment to adolescents [20]. However, these strategies do not consider the different cultural and health systems dimensions that could potentially influence adolescents' sexual health outcomes. Most programs that have been implemented sought to provide adolescents with SRH packages that would delay engagement in sexual activities, offer contraceptives and disseminate information [20, 22, 23]. There was no study that we came across that tried to integrate the two recognised health systems (IHS and MHS) in Zimbabwe as they also play a significant role in shaping up adolescent SRH decisions or experiences. A gap exists as the two HSs do not work together and complement each other to foster safe sexual practices in adolescents. There is a need to develop a strategy that would integrate the two health systems to improve adolescents' reproductive health outcomes in the two selected districts with high

teenage pregnancy and a high STIs prevalence. The strategy would be meant to foster a joined-up effort so that the systems work to complement each other rather than against each other.

There is also a scarcity of policies that have advocated for the integration and collaboration of IHS and MHS in Zimbabwe. The majority of Zimbabweans rely on IHS for their health care as it is affordable and accessible to many, especially in resource-constrained rural areas such as in Umguza and Mberengwa Districts [24]. Even though these systems are dealing with the same client (adolescents), there are minimal efforts that have been channelled towards ensuring that activities of these systems relating to ASH are integrated and delivered in an integrated manner [17, 18]. Combining these two systems could provide the effectiveness and efficiency of the two systems in improving ASH. There is, therefore, a need to develop a strategy that would integrate the two health systems to enhance ASH outcomes in the two selected districts with high teenage pregnancy and a high prevalence of STIs. Therefore, this study seeks to develop strategies that will facilitate the integration of IHS and MHS in Mberengwa and Umguza districts in Zimbabwe to foster safe sexual practices in adolescents.

## 2.0 Methods / Design

### 2.1 Research Approach

A research approach is a plan that guides the research process step by step. In a nutshell, it outlines the critical steps that would be involved in the whole research and how they will be integrated [25]. The research approach is informed by the research problem, objectives, methods, and how the results would be integrated [25]. The study was conducted in two phases. The first phase gathered empirical data from respondents. The data was analysed and then informed the second phase that involved developing and validating strategies that would facilitate the integration of IHS and MHSs. The research approach is summarised in **Fig 1**.

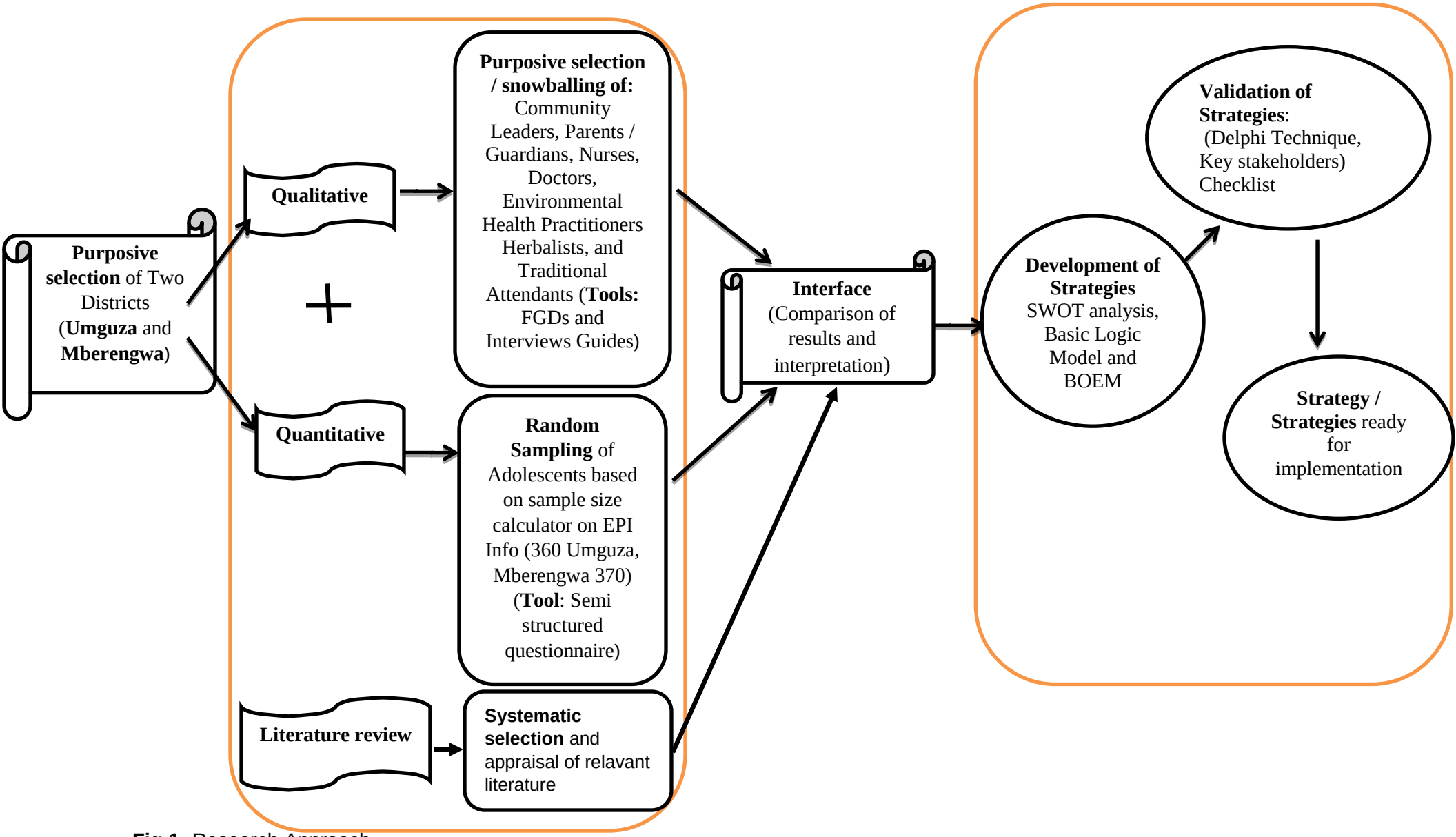


**Fig 1:** Research Approach

## 2.2 Phase 1

### 2.2.1 Step 1: Systematic Literature Review

#### 2.2.1.1 Review Title

Health System Strategies and Adolescent Sexual Health. A systematic review of the literature using the Rodgers Concept Analysis Framework. The review process is summarised in **Table 1**.

#### 2.2.1.2 Background of the review

Health Systems Strategies (HSSs) play a significant role in ensuring access to Sexual Health (SH) services by adolescents and, in turn, impact on their SH outcomes [26]. Health Systems (HSs) have been defined as the organisation of people, institutions, and resources to ensure delivery of SH services to adolescents [27-29]. It is of importance to note that this age group is not independent in making their decisions; therefore, they would rely on their environments to inform their decisions [29]. Several strategies have been implemented worldwide to improve Adolescent Sexual Health (ASH) outcomes [30-32]. Strategies in this study will be defined as a plan implemented within a HS to impact the SH outcomes of adolescents [33]. Despite implementing some strategies, adolescents remain highly vulnerable, with a high prevalence of Sexually Transmitted Infections (STIs), high incidence of teenage pregnancy, resulting in high numbers of adolescents dropping out of schools [2, 29]. Dropping out of formal schools subjects adolescents to poverty, particularly in Low and Middle-Income Countries (LMCIs), where employment opportunities are hard to come by, and there is stiff competition for the few available opportunities [34]. Concepts are not well understood when it comes to the implementation of ASH programs leading to low demand and misinterpretation of such programs that are meant to improve their SH outcomes [26, 32].

#### 2.2.1.3 Review Question

What is the relationship between Health Systems Strategies and Adolescent Sexual Health is as presented in literature over time?

#### 2.2.1.4 Specific Objectives

- Review literature on the relationship between Health Systems Strategies and Adolescent Sexual Health issues guided by Rodger's evolutionary concept analysis framework.
- Develop a Conceptual Framework that would guide a study that seeks to "*Develop strategies to facilitate safe sexual practices in adolescents through Integrated Health Systems in selected Districts in Zimbabwe*."

### 2.2.1.5 Methodology

#### 2.2.1.5.1 Inclusion criteria

In this systematic review, studies that presented Health System Strategies that targeted Adolescent Sexual Health were considered. This review focused on studies and reports that were published in English up to July 2020 in peer-reviewed journals the world over. The review would target original quantitative and qualitative research and reports obtained from Google Scholar, PUBMED, EBSCO, and Science Direct.

#### 2.2.1.5.2 Exclusion criteria

This systematic review excluded all studies that focused on the relationship between Health System Strategies and their impact on other age groups (other than adolescents).

#### 2.2.1.5.3 Search Strategy

The keywords: Adolescents, Health Systems, Sexual Health, and Strategies were used to search for relevant literature from Google Scholar, PUBMED, EBSCO, Cochran Library and Science Direct.

#### 2.2.1.5.4 Methods of Review

Titles and abstracts were reviewed independently by at least two reviewers to identify articles and reports that would be relevant to this systematic review. Disagreements were resolved through dialogue between the reviewers. At least two reviewers reviewed the full texts of these articles and reports that meet the inclusion criteria, with differences being ironed out through dialogue.

#### 2.2.1.5.5 Data Extraction and Synthesis

A data collection form was developed guided by Rodger's Evolutionary Conceptual Analysis Framework to facilitate uniform data collection by all reviewers on attributes, antecedents, and consequences of Health System Strategies on Adolescent Sexual Health from the articles and reports that met the inclusion criteria. Collected data were then compared, and any deviations were addressed through dialogue between the student and the promoters (who also reviewed the paper) to reach a consensus. Findings from the articles and reports were then coded and thematically analysed to identify and explain antecedents, attributes, and consequences of HSSs on ASH.

#### 2.2.1.5.6 Quality Assessment

A quality evaluation tool was also used to assess the selected studies' quality in line with Rodgers' Evolutionary Concept Analysis Framework [35]. Articles and reports were further assessed for clarity in presenting attributes, antecedents, and consequences of HSSs on ASH [36].

Furthermore, the AMSTAR tool for assessing the methodological quality of systematic reviews was used to evaluate the quality of the methods used in this systematic review [37].

### 2.2.2 Step 2 and 3: Concurrent Mixed Method

#### 2.2.2.1 Study design

A concurrent triangulation mixed-method design was then conducted. This design utilised both qualitative and quantitative approaches to collect and analyse data from respondents. This study design sought to gather complementary and yet different data on the topic obtained from various participants, which informed the strategy development and validation process [38-42]. There was a need to gather data so that the findings were comprehensive, which offered a strong basis for the development and validation of strategies. This design was appropriate as the qualitative and quantitative data complemented each other in explaining different data in line with ASH. The results from the two methods (quantitative and qualitative) were interfaced, compared, and interpreted. The merging of data helped ensure that the developed strategies were contextualised to solving problems that would have been explored in terms of the magnitude of influence. The objectives of this phase are summarised in **Table 1**.

**Table 1:** Outline of Concurrent Triangulation Mixed Method Research Process

| | Method | Objectives | Participants | Data Collection Method | Data Analysis |
|---|---|---|---|---|---|
| **Phase 1 (Concurrent Triangulation Mixed Method)** | *a) Systematic Literature review* | 1. Review literature on the relationship between Health Systems Strategies and Adolescent Sexual Health issues guided by Rodger's evolutionary concept analysis framework.<br>2. Develop a Conceptual Framework that would guide a study that seeks to "Develop strategies to facilitate safe sexual practices in adolescents through Integrated Health Systems in Umguza and Mberengwa Districts in Zimbabwe". | Quantitative and qualitative studies and reports that are published in English up to July 2020 in peer-reviewed journals and are obtainable from Google Scholar, PUBMED, EBSCO, Cochran Library and Science Direct**.** | Developed Data collection form guided by Rodger's Evolutionary Conceptual Analysis Framework | Thematic Analysis |
| | *b) Qualitative study* | 3. Explore Indigenous Knowledge that influences sexual experiences;<br><br>4. Assess the role played by different stakeholders in communities that influence adolescent development and sexual experiences | Community Leaders/herbalists / Traditional Attendants, Health Service Providers (Doctors, Nurses and Environmental Health Practitioners involved in adolescent sexual health issues), Adolescents parents / legal guardians, | Interviews<br><br>Focus Group Discussions | Thematic Analysis in MAXQDA |
| | *c) Quantitative study* | 5. Establish the extent of influence of IHSs and MHS on adolescent sexual behaviours | Adolescents | A questionnaire with both open ended and closed questions | Cross Tabulations and Multiple Logistic Regressions in STATA Version 13 SE |

### 2.2.2.2 Study Setting

The research was conducted in two Districts, Mberengwa and Umguza. These districts were purposively selected as they are part of the few known communities that are highly cultural and have defined initiation schools for adolescents, and most people still rely on IHS. The districts also have a higher prevalence of STIs and high teenage pregnancy. Other areas are modernised, and members' healthcare-seeking behaviour in those districts has shown that they favour MHS compared to IHS [4, 43].

#### 2.2.2.1.1 Mberengwa District

Mberengwa district lies in the Midlands province in Zimbabwe. Gwanda bounds it to the west, Zvishavane to the north, Neshuro to the south, and Chikombedzi to the east. This district is found in Zimbabwe in the Midlands province and has 37 wards, 32 health facilities, 104 primary schools, and 38 secondary schools (see **Fig 2**) [24]. Of these 32 health facilities, three are first level referral centres. These comprise of district and rural hospitals that deal with cases that cannot be taken care of at the PHC level. The majority of people in this district rely on IHS. These systems run parallel to the modernised National Health Systems (NHS). The community is dominated by the Varemba tribe that is highly cultural [24]. Languages spoken in this district are Karanga and Ndebele, and these languages are dialects of Shona and Ndebele Languages, respectively. The total population was estimated at 200 581 in the 2012 census. Of this population, 67 195 were aged between 5-14 years, 100 892 aged between 15 and 24 years. Drawing from the population trends, the adolescents could easily make up 50% and above of the total population. In this district, several cultural activities occur, including traditional initiation of adolescents, which takes place in September in designated initiation schools. These initiation schools are run by traditional leaders and attendants who are deemed experienced. The district has an STI prevalence of 19% in the age groups of 10-24 [14] where adolescents fall, and the general HIV prevalence in the whole population is pegged at 16% [44]. According to the National adolescent fertility Study, Midlands Province has a teenage pregnancy prevalence rate of 17.7%. This rate is too high as some countries in developed countries have prevalence rates as low as 8 per 1000 (which could translate to around 2% or less of their teenage populations) [45].

#### 2.2.2.2.2 Umguza District

Umguza district lies in Matabeleland North province and comprises 18 wards, has 11 health facilities, seven primary schools, and five secondary schools (as shown in **Fig 2**). All seven health facilities are PHC facilities. The district had an estimated population of 80971 during the

2012 census. Of this population, 21133 people were aged between 5-14 years, 47206 being aged between 15 and 24. Tribes found in this district are Xhosa and Ndebele, both of which are classified as dialects of Ndebele. This district is highly traditional, with an HIV prevalence of 18.9% in the general population compared to the national average of 12% [46]. Teenage pregnancy in Matabeleland North Province (the province in which the district is housed) stands at 23.6% against the targeted 12% in 2020 [46]. The community is highly reliant on the traditional health system as it is mostly rural with high unemployment levels [14]. Initiation schools for adolescents are held during winter, that is, June and July every year. In these schools, male circumcision and labia elongation activities are conducted on male and female adolescents, respectively.

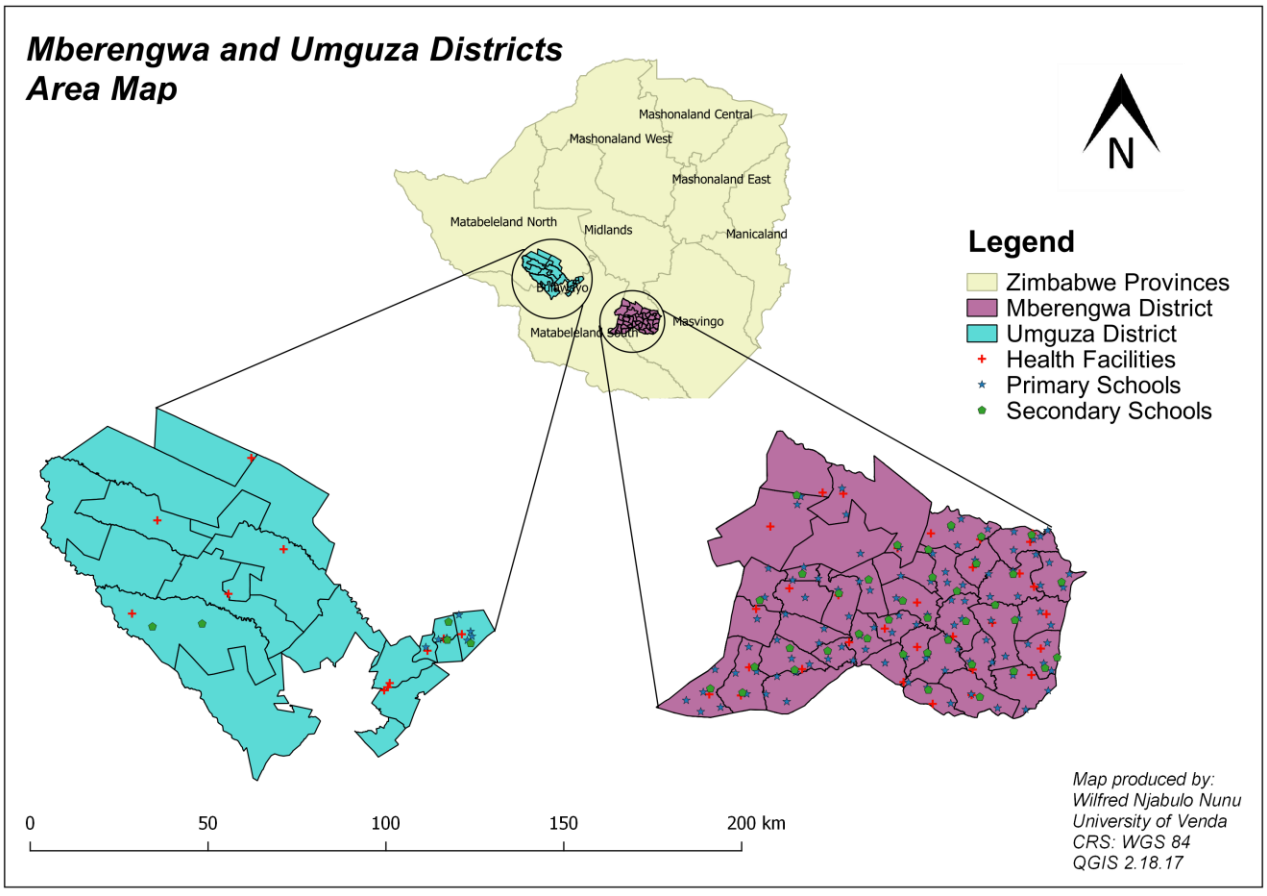


**Fig 2:** Mberengwa and Umguza Districts, Zimbabwe

### 2.2.3 Step 2: Qualitative Approach

A qualitative study was conducted on crucial informants (Community Leaders / Herbalists, Traditional attendants, Health Service providers, and adolescent parents/guardians). Data was collected from targeted participants to build themes on IHS and how it influences adolescent sexual experiences, and how IHSs relates to MHSs. The qualitative study design enabled an understanding of IHSs and how these impact adolescent sexual experiences. This research design also helped identify potential strategies that could facilitate the integration of IHSs and MHSs to improve adolescent sexual health outcomes.

#### 2.2.3.1 Study Population

These were community leaders, herbalists, and traditional attendants, health service providers (Nurses, Doctors, and Environmental Health Practitioners dealing with adolescent sexual health issues), and parents and legal guardians of adolescents.

##### 2.2.3.1.1 Inclusion Criteria

All community leaders and herbalists were eligible to be part of the study. Parents who had adolescents also participated in this study. Health caregivers in health facilities that were involved in adolescent sexual health issues in any way were also eligible to be part of the study.

#### 2.2.3.2 Sampling

These two districts (Umguza and Mberengwa) were purposively selected as these had high cases of teenage pregnancy and STIs, as explained in section 2.2.2.2 above. The sampling process for the targeted populations is summarised in **Table 2**.

**Table 2:** Summarised sampling process for the qualitative approach

| Study Population | Sampling Procedure | Sample Size | Instrument and Data Collection Procedure | Data Analysis Plan |
|---|---|---|---|---|
| **1. Community Leaders (sixteen Chiefs in Mberengwa and five chiefs in Umguza)** | Purposive | Twenty-one | Unstructured Interviews, recording of interviews using a tape recorder | Coding and Thematic analysis on MAXQDA version 14 |
| **2. Herbalists and traditional attendants** | Snowballing | Unknown; therefore, the sample size was determined by data saturation. | Unstructured Interviews, recording of interviews using a tape recorder | Coding and Thematic analysis on MAXQDA version 14 |
| **3. Parents and guardians** | Purposive | Five Focus groups with ten participants. The groups would comprise of five females and five male participants. | Focus Group Discussion Guide, recording the conversations using a tape recorder | Coding and Thematic analysis on MAXQDA version 14 |
| **4. Health Service Providers** | Purposive | Mberengwa has thirty-two Health facilities; therefore, one doctor (if available), one nurse, and one environmental Health Practitioner involved in adolescent sexual health issues would be selected at least one in each category per facility, the sample size would depend on data saturation.<br>In Umguza there are five health facilities<br>Sample of five doctors (if available), five nurses and five EHPs | Unstructured Interviews, recording of interviews using a tape recorder | Coding and Thematic analysis on MAXQDA version 14 |

#### 2.2.3.2.1 Sample Size and Sampling of Respondents

The two districts have a total of twenty-one chiefs (sixteen in Mberengwa and five in Umguza). All these community leaders were targeted for interviews. The number of herbalists and traditional attendants targeted for participating in the study was determined by data saturation. Most herbalists and traditional attendants were not registered with the government; therefore, snowballing was used to ensure that there are not missed out. At least three health service providers in Umguza and Mberengwa health facilities were recruited to participate in the study. Health service providers' (Doctors, Nurses, and Environmental Health Practitioners) representatives were purposively selected, only those that deal with adolescent sexual health issues in their respective health facilities. The researcher strived to make sure that doctors (if available as some health facilities do not have doctors), Nurses, and Environmental Health practitioners (these are often involved in information dissemination and conducting awareness campaigns on public health issues including adolescent sexual-related) were represented in each facility through purposive sampling. Lastly, parents and guardians of adolescents were also chosen purposively and comprised of those that would have adolescents in the age group of 10-19 years. These would participate in FGDs, which would have five groups of ten participants each. These groups would be heterogeneous, comprising of five male and five female participants.

#### 2.2.3.3 Instruments

The FGD guide was used to collect data from parents/guardians of adolescents. Unstructured interview guides were administered to community Leaders, Traditional Attendants, Herbalists, and Health Service providers. These guides were developed in either English and then translated to Ndebele and Shona, the main three main languages used in Zimbabwe. These guides were semi-structured with a series of questions that guided the inquiry in line with objectives. Probes were asked to seek clarification on issues that would be arising during the interviews. The instruments are attached as **Appendix 11.**

#### 2.2.3.4 Pre-test

A pre-test of the tools was conducted in one ward in the Mangwe district, which is also rural, to avoid contamination of sampling pools [47]. Three participants from health facilities and three community or traditional attendants were interviewed in Mangwe District. Furthermore, one FGDs was conducted with parents and legal guardians of adolescents in the same district. The responses were transcribed and analysed, and necessary adjustments made to the interview and FGD guides. The data obtained from the pre-test was not included in this thesis.

#### 2.2.3.5 Data Collection

In-depth unstructured interviews were conducted on key informants (community leaders, herbalists, and traditional attendants and health service providers). These interviews were conducted in private places during convenient times for both the interviewer and interviewees. These interviews sought to understand the roles that community leaders and traditional healers played on adolescent sexual issues. The discussions also probed and identified IKS in the community and how it influences adolescent sexual practices. The interviews also examined and identified possible ways of integrating IHS and MHS. FGDs would be held with legal guardians and parents of adolescents. Prior appointments were made to ensure targeted participants participate in FGDs. The FGDs were done to build up from the interviews with key informants to understand and triangulate some of the identified IHSs. Therefore, a more detailed outlook was obtained and more insight was gained through the generation of diverse information that could have been missed in the process of interviewing key informants. The unstructured interviews were conducted either in English, Ndebele, or Shona languages using a language editor to translate the questions depending on what the respondents proposed. The type of language chosen from these three depended on what the respondents themselves felt comfortable in using. The interviews were recorded using a digital tape recorder. The Voice recorder used was a 4GB Sony digital recorder, Model Number: RC520, which was acquired in Australia.

#### 2.2.3.6 Qualitative Data Analysis

Data collected from key informant interviews and FGDs was transcribed and thematically coded and analysed on MAXQDA using Braun & Clarke six-step method as presented by Maguire & Delahunt in 2017 [48]. These steps involved: becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining themes, and writing up. Transcription was done verbatim, and Codes were developed with the help of an independent coder [48]. Emerging themes were identified and presented as findings, and these were interfaced with results from the quantitative study design that would be running concurrently.

#### 2.2.3.7 Trustworthiness

These are very important in qualitative research to ensure the robustness of the data collected and interpreted. Observation of these characteristics in data collected ensures that objectivity is achieved and all underlying researcher values that could impact the results would be reported to consider when one is reading the research. Below are the considerations that were made.

#### 2.2.3.7.1 Credibility

Credibility is concerned with the extent to which the research methods prompt confidence in the truth of the data and its interpretation [49]. The reliability of the data ensures that the results of the research are believable. This aspect was guaranteed by using different techniques in data collection (triangulation), that is, FGDs, interviews administered to different categories of participants such as health service providers, traditional leaders/ healers, and traditional attendants, herbalist and parents/guardians. This scenario ensured the richness of information that was gathered. These were (FGDs and unstructured interviews) employed to gauge the accuracy of findings with attention given to verbatim quotes and outliers.

#### 2.2.3.7.2 Dependability

Dependability refers to a process of evaluating the quality of integrated processes of data collection, analysis and theory generation [50, 51]. To ensure that the study was robust in terms of recruitment of participants, collection and analysis of the data, the proposal was subjected to different academic boards that are: The Departmental Committee and School of Health Higher Degrees Committee at the University of Venda, The Research Board at the National University of Science and Technology as well as the Medical Research Council of Zimbabwe. Data collection was also done over six months (January to July 2020) to ensure data stability over time and conditions. Data collection at different intervals minimised information bias while assessing if participants will give similar information to the same questions at different periods.

#### 2.2.3.7.3 Conformability

Conformability refers to the degree to which the results could be confirmed by others [51]. The researcher maintained a high level of objectivity in collecting and interpreting these results of the qualitative inquiry. The researcher also reflected on his interests that could potentially influence judgment, and these taken into consideration during data collection and analysis. This study (including the protocol paper) are/were subjected to external peer reviews through submission to peer-reviewed journals. Submitting some will enable reviewers to scrutinise the methods and data analysis techniques used to interrogate the data. The protocol paper was published in Springer's Journal of Reproductive Health. Comments received from reviewers assisted in refining the methods of collecting and analysing data.

#### 2.2.3.7.4 Transferability

Transferability is defined as the extent to which a study's findings can be applied to other situations [51, 52]. Transferability often demonstrates the possibility of the study's findings being applied to a broader population or a different setting. Authors have argued that even though a

case is unique, it refers to a broader community [51, 53]. Sufficient detail about methods, data collection, and analysis tools ensures readers are well informed. The detailed methods section would enable readers to assess the research objectively and transfer it to different settings.

### 2.2.4 Step 3: Quantitative Approach

A quantitative survey that establishes associations between IHSs, MHS, and subsequent adolescent sexual experiences was also conducted on recruited adolescents.

#### 2.2.4.1 Study Population

Under this method, the targeted population was adolescents aged 10 to 19 years in Umguza and Mberengwa districts in Zimbabwe.

#### 2.2.4.2 Sampling

##### 2.2.4.2.1 Sample size

The population of adolescents was estimated at 68339 for Umguza and 168087 for Mberengwa, respectively. Adjusting the population using the growth rate of 1.56% per annum, as reported by the Zimbabwe demographic profile, estimates 73840 adolescents for Umguza and 181618 for Mberengwa respectively by the end of the year in 2017. The sample size was calculated using EPI INFO at a margin of error of 5%, the confidence level of 95%, and a response distribution of 50% gave sample sizes of 360 in Umguza and 370 in Mberengwa, respectively. This sample size calculator is a prepared calculator that considers the level of confidence, the margin of error, and response distribution. It involves the researcher inputting the population and adjusting those three variables mentioned above to get a sample size in line with the research setting. An estimated minimum required sample size to make meaningful inferences is then subsequently obtained.

##### 2.2.4.2.2 Sampling of participants

Participants were recruited using stratified systematic random sampling. All the wards in the two districts were represented to ensure the proportionate representation of males and females in the sample and ensure that all age groups participate in the study. Mberengwa had 37 wards; therefore, 10 participants were drawn from each ward, while in Umguza (eighteen wards), twenty respondents were drawn from each ward. The study aimed to achieve a 50:50 representation of males and females in all samples. Participants were identified from community registers kept by Headman in their areas of jurisdictions (at ward level). The records accessed had demographic characteristics such as the date of births and sex of all members of specific

families. Such records guided the researcher in fishing out adolescents aged 10 to 19 years. These registers were, therefore, used as a sampling frame that guided the sampling process.

#### 2.2.4.1.3 Inclusion criteria

All adolescents aged between 10 years and 19 years during the time data was collected were deemed eligible to participate in the study.

### 2.2.4.3 Instrument

A semi-structured questionnaire was used to collect data from the respondents. This tool was adapted from John Cleland's Questionnaire for interview surveys on the sexual and reproductive health of young people on the WHO website [54]. The questionnaire for adolescents was structured and comprised of six sections. The sections explored the following; Demographics; Practices; Reasons for engaging in sexual activities and extent of supervision; Role of identified IKSs and their relationship with sexual experiences; Role of health systems in shaping up their sexual experiences; Views of potential integration of IHS and MHSs. A language translator was engaged in translating the tool into isiNdebele, and Shona versions for easy understanding as all languages in Zimbabwe are either dialect of Shona or isiNdebele. The questionnaire had both open-ended and closed questions. The three language versions of the questionnaires are attached as **Appendix 13**.

### 2.2.4.4 Pre-test

Pretesting of the questionnaire was done on ten (10) randomly selected adolescents in Mangwe District. After the pre-test, participants were asked about the whole process of data collection and the nature of the questions asked. Their input led to the fine-tuning of the Instrument. The findings from these respondents are not be included in this thesis.

### 2.2.4.5 Validity

Validity is defined as the extent to which a concept is accurately measured in quantitative studies [49]. There is a need to consider content validity, which ensures that the designed data collection tools adequately cover all the content concerning the variables that are being probed. Content validity of the semi-structured questionnaire was ascertained through pre-testing, standardisation, and refinement. Face validity is also critical, where experts are asked their opinion about whether the proposed semi-structured questionnaire measures the concepts it is intended to. The proposal went through various committees with experts, and their feedback was taken into consideration in fine-tuning the data collection tool.

### 2.2.4.6 Reliability

Reliability is the consistency of the measurement or the degree to which an instrument measures the same way each time it is used under the same condition with the same participants [49]. The data collection tool was pre-tested before data collection and consistency checked using tests retest method to see whether there were any deviations from data collected from the same participants in several times. Data was collected in a way that enhances precision and consistency, which improved reliability. Data was captured and cleaned in excel and checked for consistency and completeness before being imported to relevant software for analysis. Data collectors were also be trained to minimise inconsistencies in capturing data.

### 2.2.4.7 Data Collection

A researcher administered questionnaire with both open and closed questions would be used to collect data from adolescents. The researcher surveyed with the assistance of two trained data collectors to increase the response rate and explain questions that might not be understood by the adolescents to capture as much accurate information as possible. The questionnaire captured data on participants' demographics, knowledge of adolescents towards STIs, sexual practices, and test the role of identified IHS and MHS in influencing adolescents' sexual experiences. Sampled adolescents were followed up, and the questionnaire was administered. It should be noted that data collection was done during the term (January 2020 to July 2020) when most adolescents were going to school though later on, there was an introduction of lockdowns due to the COVID 19 Pandemic. They were followed up to their respective schools, and the Ministry of education runs these. Prior arrangements were made with the School Heads regarding venues for data collection, and each questionnaire would take approximately 10-15 minutes to administer.

### 2.2.4.8 Quantitative Data Analysis

Multiple logistic regressions and Cross tabulations between identified IKS with identified sexual experiences or practices were done to establish the extent of influence of IHS and MHS on ASH. Demographic information such as age, economic status, religion, culture was presented quantitatively, and multiple logistic regressions were performed to assess these variables' relationship with adolescent sexual experiences. The analysis was done using STATA Version 13 SE.

### 2.2.5 Managing data from withdrawn respondents

Data collected from respondents who later on decided to withdraw from the study or were discontinued by the researcher for specific reasons were included in this study for analysis. This

decision is supported by various literature sources that suggest that as long as the analysis of such data falls within the scope of the investigation approved by a specific ethics board, it is deemed appropriate to analyse such data [55, 56].

### 2.2.6 Data Collection in the wake of COVID 19 pandemic

It should also be noted that there was no physical contact during data collection; social distancing (1-2 metre distance as recommended by WHO) was maintained during data collection for data that was collected after the first COVID Case was recorded in Zimbabwe March 2020 and recommendations made by the Ministry of Health and Child Care (MOHCC) and the World Health Organization (WHO). Both respondents and data collectors wore masks during data collection, and high levels of hygiene practised and observed all times during (including sanitising) the data collection process to minimise chances of spreading COVID 19. The researcher was also on the lookout of new developments in managing this new disease as new evidence or strategies were constantly being availed.

### 2.2.7 Interface

Findings from the Qualitative and Quantitative approaches were merged and compared side by side. Merging the data enabled triangulation and comprehensive analysis and capturing results that reflect an overview of the state of matters by comparing findings from different stakeholders that took part in the study.

## 2.3 Phase 2

This phase involved developing and validating strategies that would facilitate the integration of IHS and MHS based on Phase 1. The development of the strategies involved the application of SWOT analysis, Basic Logic Model, and BOEM. Validation would include applying the Delphi Technique and the use of an adapted checklist that would be administered to key stakeholders to get their opinion on developed strategies. The development and validation approaches are summarised in **Table 3**.

**Table 3:** Development and Validation of Strategies

| | Method | Objectives | Participants | Data Collection Method | Data Analysis |
|---|---|---|---|---|---|
| **Phase 2** | *a) Development of strategies* | Develop strategies that leverage on empirical evidence to enhance HSs performance regarding the management of adolescent sexual issues | Merging and Analysis of Data from phase 1 | SWOT Matrix<br>Basic Logic Model<br>BOEM | SWOT analysis to determine the possible areas to facilitate the integration |
| | *b) Validation of developed strategies* | Validate the developed strategies | Experts<br>Key Stakeholders | Delphi Technique<br>Checklist | Expert feedback<br>Quantitative and qualitative analysis of data from the checklist |

### 2.3.1 Strategy Development

#### 2.3.1.1 SWOT Analysis

SWOT analysis has been defined as a structured process that aims to identify and analyse strengths, weaknesses, opportunities, and threats of different strategies and different plans that aim to achieve set objectives [57]. It is a conceptual framework that is aimed at identifying and appraising strengths, weaknesses, opportunities, and threats of phenomena of interest [58]. The SWOT analysis conceptual framework was applied to the findings from the triangulation mixed-method study conducted in phase 1. Conducting the SWOT analysis enabled for the identification and analysis of internal factors (human resources, competence, financial costs, and services) and external factors (political, economic, socio-cultural, technological, legal and environmental) that would be helpful or harmful in the facilitation of the integration of IHS into MHS were identified to be overcome or manipulated. This analysis formed the basis of strategy idea brainstorming and appraisal using the Basic Logic Model.

#### 2.3.1.2 Basic Logic Model

The Basic Logic Model follows a sequence of critical stages deemed necessary when developing a plan or strategy [59]. There was a need to leverage the SWOT analysis findings and outcomes to brainstorm on possible strategies that could facilitate the integration of IHS and MHS. These were then appraised to estimate the resources needed for their implementation to ascertain feasibility. There was also a need to ensure the identification of activities that had to be done to facilitate the implementation of the proposed strategies, and this enabled the determination of whether or not there were sufficient resources to implement the proposed policies. The strategy proposals were also appraised based on the expected outputs, the short and long-term outcomes, and the perceived impacts. After this stage, only ideas or strategy proposals that would have been deemed feasible were then subjected to the next stage, the build, overcome, explore, and minimise (BOEM) model.

#### 2.3.1.3 BOEM Model

This model leverages on building a strategy that overcomes threats and weaknesses of the current systems while exploring opportunities that would best support the achievement of objectives. Strategies were crafted to minimise the chances of them failing to attain the desired goals. The strategy development process is summarised in **Fig 3**.

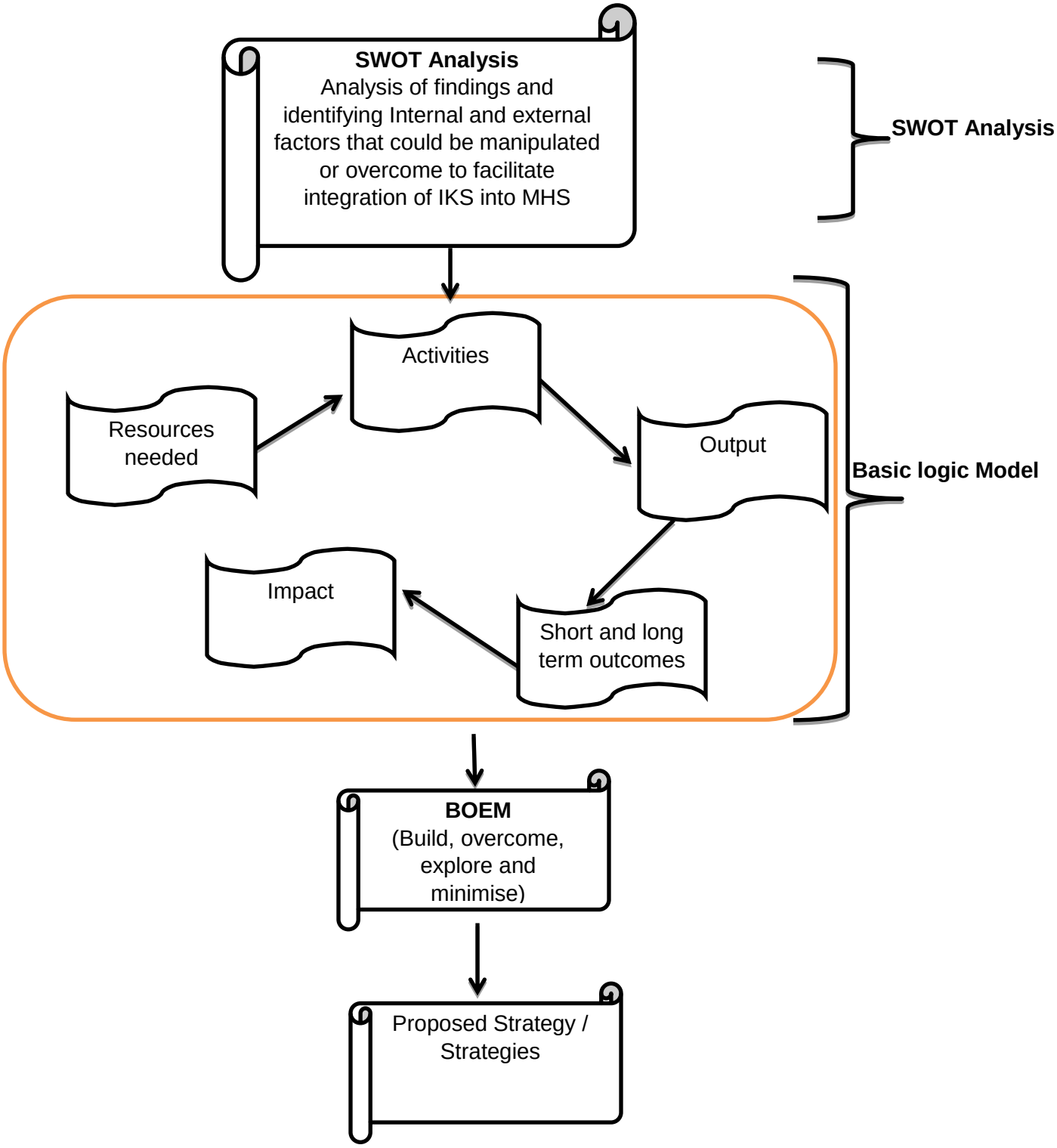


**Fig 3:** Strategy development flow chart

### 2.3.2 Validation of strategies

Validation of strategies aims at determining feasibility, applicability, acceptability, and sustainability of these strategies in attaining desired goals [59]. Key stakeholders must evaluate the developed strategies to ensure that they do not undermine or violate different health system users' values. Strategy evaluation followed two key stages. The first stage involved the use of the Delphi technique. In contrast, the second stage involved administering a checklist to specific vital stakeholders in the communities in Umguza and Mberengwa districts.

#### 2.3.2.1 Delphi Technique

The Delphi technique is a systematic, interactive method used in forecasting into the future regarding proposed methods, strategies and the likely impact they could have if implemented [60]. The technique's objective is to seek expert opinion on the developed strategies or implementation plans and forecast their likely impact in attaining set goals and objectives and their appropriateness [61]. This method was suitable for guiding strategy development in this research. About twenty experts specialising in IHS, HSP, and adolescent sexual health were targeted for recruitment. The experts had extensive knowledge on the subject of interest, as proven by their academic and scholarly background, and they were purposively selected. These experts were briefed of the findings from the triangulation mixed-method study, the SWOT analysis, the Basic Logic Model, and the BOEM model and subsequently developed strategies. They were then tasked to critique the developed strategies basing on the context and whether they can facilitate the integration of IHS and MHS for better adolescent sexual health outcomes. The experts' feedback was used to fine-tune the strategies in preparation for validation by critical stakeholders.

#### 2.3.2.2 Key Stakeholder Consultation

These included MOHCC representatives, Ministry of Education representatives, health service providers, community leaders, herbalists, adolescents, and their parents. A total of 100 key stakeholders was calculated using a sample size calculator on EPI INFO. This sample size was calculated using a 95% level of confidence, with 10% and an expected value of an attribute of 50%. This process gave a sample size of 96, which was then rounded off to 100. The researcher ensured that 50 of the participants would be from the Umguza district and the other 50 from Mberengwa district. All key stakeholders were recruited using stratified random selection to ensure that the key stakeholders' targeted categories are all represented. A checklist with 14 questions was used to gather data on key stakeholders' opinions on the feasibility, accessibility, and sustainability of the proposed strategies (**Appendix 14**). Their

responses were analysed and then used to fine-tune the accepted strategies in preparation for implementation. The validation process is summarised in **Fig 4**.

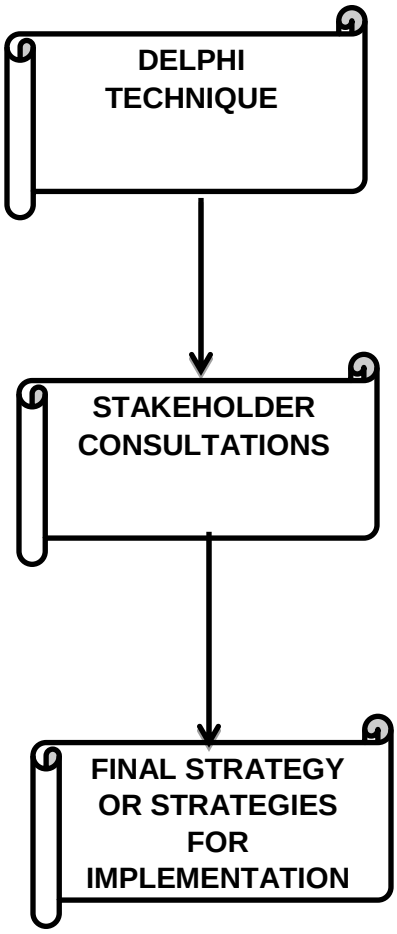


**Fig 4:** Strategy validation process flow chart

## 3.0 Discussion

There have been no known studies found in the literature that explores the possibility and developed strategies for integrating IHSs and MHSs to promote safe sexual practices in adolescents. Furthermore, no publications were found that examined the role of IHS and MHS in shaping adolescent sexual experiences. Most programmes on sexual health have ignored the role of IHSs and MHSs in influencing safe sexual practices leading to them failing to attain desired goals. Emphases have been targeted at minimising the spread of Sexually Transmitted Infections (STIs) by advocating for utilising MHSs rather than focusing on integrating systems meant to manage Adolescent Sexual Health (ASH) related issues. This study might provide a window of opportunity in identifying IK, exploring IHS and MHS packages, and how they influence sexuality in adolescents. If strategies are implemented, they could improve ASH outcomes. This study is expected to generate at least seven publications.

## 4.0 Ethical considerations

Ethics refers to moral principles that govern a person's behaviour or conduct an activity [62]. The concept of ethics is centred on guiding the researcher so that a safe environment is ensured to the participants [63]. It also provides that the rights and privacy of participants are not violated [63]. Therefore, the researcher is expected to research in a dignified manner and in a way that fosters accountability and responsibility. Therefore, it is imperative that the research is conducted competently, honestly, and results communicated accurately at the same time considering potential consequences that might arise from the analysis. The following major ethical principles were observed in this research:

### 4.1 Permission to Conduct the Study

Ethical clearance was sought from the University of Venda's ethics clearance committee (**SHS/19/PH/17/2608)**. Permission to conduct the study was also sought from the Ministry of Health and Child Care. Since this study dealt with humans, ethical clearance was also sought from the Medical Research Council of Zimbabwe (MCRZ) **(MRCZ/A/2611)**. Permission was also sought from the participating Health Facilities were Health Care workers were interviewed. Permission to conduct the study in the specific districts was sought from traditional leaders (Traditional chiefs and headmen). The clearance and permission letters are appended as **Appendices 1-4**.

### 4.2 Right to Informed Consent

This process aims at providing participants with information about the title, purpose, objectives, potential risks, and benefits of the study [64, 65]. The provision of sufficient information ensures that participants are appraised about the purpose of the research. They are also brought to speed about the role they are expected to play and the nature of the information they are expected to give; this enables them to decide whether or not to partake in the study [64]. In this study, an information leaflet was designed to summarise what the whole research was all about and how the data collected was going to be handled, including privacy and anonymity. The participants read through before deciding on whether or not to be part of the study. Since data was also collected from adolescents (some of whom were under the age of 18), written consent was sought from their parents / legal guardians, and participating adolescents assented to participate in the study. The information sheet, consent, and assent forms are appended to this thesis as **Appendices 5-9.**

### 4.3 Right to Anonymity, Privacy, and Confidentiality

This principle ensures that participants are kept anonymous and their privacy protected [63]. This study recorded interviews; however, participants were kept anonymous. Their transcripts and questionnaires were be assigned numbers, and these numbers would not be traceable to participants. The collected data from questionnaires and generated transcripts would be destroyed after five years.

### 4.4 Principle of beneficence

This principle elaborates that participants should not be harmed by participating in the study [63, 64]. There is a need for physical, emotional, spiritual, economic, social, or legal considerations during the study. It is, therefore, the researcher's responsibility to protect the participants from harm. In this research, the researcher ensured that participants understood the information provided on the information sheet before giving consent. Participants were allowed to identify consequences that would arise through participation in this research so that they could be mitigated or avoided. Interviews were conducted in a non-threatening environment that did not cause harm to the participants. There are also arguments that though some emotional distress may be aroused when sensitive issues are discussed. However, some authors argue that there are usually no indications that this distress may be any greater than in everyday life or require follow-up counselling [66]. Trained Health service providers were available in case respondents showed any signs of distress.

### 4.5 Principle of justice

This principle centres on the right to fair selection and treatment and their right to privacy [67]. The selection of the population to be studied and the specific participants to be considered should be fair. The participants were selected for reasons directly related to the problem being investigated and not because they were easily accessible, or because the researcher liked them to receive specific benefits as a result of a study. The questionnaires and interview guides were translated into local languages that participants understood so as for them to participate fully in the study.

## 5.0 Declarations

### 5.1 Ethical Approval and consent to participate

Ethical clearance was sought from the University of Venda's Ethics Clearance Committee (Ethics Number: **SHS/19/PH/17/2608**) and the Medical Research Council of Zimbabwe (Ethics Clearance number: **MRCZ/A/2611**). Permission to conduct the study was also sought from the Ministry of Health and Child Care and the Ministry of Education if respondents are to be followed up at schools. Permission was also be sought from the participating Health Facilities, where Health Care workers would be interviewed. Permission to conduct the study in the specific districts was sought from traditional leaders (Traditional chiefs and headmen). Written consent was sought from all participants. Since data would also be collected from adolescents (some of who would be under the age of 18), written "consent" would be sought from their parents / legal guardians and adolescents themselves would "assent" to be part of the study. Information sheets and assent forms would be provided for participants to read and sign if they agree to be part of the study.

### 5.2 Consent for publication

Not Applicable

### 5.3 Availability of data and material

Not Applicable

### 5.4 Competing Interests

The authors declare that they have no competing interests.

### 5.5 Funding

The research would be funded by the National University of Science and Technology under the Staff Development Programme. The funder pays for tuition fees related to these PhD studies. The funder would also provider resources to cover data collection, analysis and remuneration of two data collectors who will assist the principal investigator WNN. Researchers will write and submit six-monthly reports to appraise the funder of progress. The funder's role is to provide resources to carry out the proposed project successfully.

### 5.6 Authors' Contributions

WNN is a PhD in Public Health student at the University of Venda. The author conceptualised the protocol as partial fulfilment of the requirements of the PhD requirements. LM is the Promoter of these PhD studies, while JTM and RTL are Co-Promoters. The three have contributed through guiding the PhD student in the conceptualisation and preparation of the protocol manuscript. All authors read and approved the final manuscript.

### 5.7 Acknowledgements

Not Applicable

### 5.8 Authors' Information

WNN is a PhD in Public Health student at the University of Venda in South Africa and is also a Lecturer in the Department of Environmental Science at National University of Science and Technology in Bulawayo in Zimbabwe. LM is an Associate Professor and JTM is a Senior lecturer in the Department of Public Health under the School of Health Sciences at the University of Venda in Thohoyandou in South Africa. RTL is a Research Professor at the School of Health Sciences at the University of Venda in Thohoyandou in South Africa.

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# Section B: **Papers/Articles**

# Health System Strategies and Adolescent Sexual Health: a systematic review of the literature using Rodgers Concept Analysis Framework

Submitted to Journal as:

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See **Appendix 16** for Author Guidelines.

**0.0 Abstract**

***Purpose:*** This study aims to review the literature on the relationship between Health Systems Strategies and Adolescent Sexual Health issues guided by Rodger's evolutionary concept analysis framework. The study further develops a Conceptual Framework that would guide a study that seeks to "*Develop strategies to facilitate safe sexual practices in adolescents through Integrated Health Systems in selected Districts in Zimbabwe*."

***Methods:*** The words Adolescents, Health Systems, Sexual Health, and Strategies were used to search for published literature (in English) on Google Scholar, PUBMED, EBSCO, Cochran Library, and Science Direct. A total of 1804 articles and 235 articles were accessed. After screening for duplicates,142 Articles and 11 reports were screened for relevance, and 42 articles and 03 reports were found suitable and relevant and thus were reviewed. Thematic analysis to identify attributes, antecedents, and consequences of Health Systems Strategies on Adolescent Sexual Health was done. These findings were then used to inform the development of the Conceptual Framework.

***Results:*** Key attributes, antecedents and consequences of Health System Strategies on Adolescent Sexual Health were identified. Strategies to Improve Adolescent Sexual Health outcomes were also identified.

***Conclusions:*** Different contextual factors influence policy changes and the consequences are mixed, with both positive and negative outcomes.

**Keywords:** Adolescents; Antecedents; Attributes; Consequences; Health Systems; Sexual Health; Strategies.

### 0.1 Implications and Contribution

Health Systems Strategies have been vital in determining Adolescent Sexual Health outcomes. Adolescents are very vulnerable and need to be protected at all costs. There is a need to have comprehensive Health Systems Strategies that would positively impact Adolescent Sexual Health through proposed comprehensive and integrated systems.

## 1.0 Background

Ensuring safe sexual practices in adolescents is one of the critical challenges that have been faced even up to the 21st century [1, 2]. There have been several factors that have led to negative Sexual Health (SH) outcomes in adolescents. Different authors have noted these as unfriendly sexual health care services for adolescents, inadequate health care financing, to mention a few [2, 3]. Adolescents are considered to be the future of tomorrow; however, statistics show that there are at high risk of dying earlier before they realise their full potential because of Sexually Transmitted Infections (STIs) such as Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) [4, 5]. An adolescent in this study would be defined as a young person who is in the age group of 10 to 19 years and is in the process of transitioning into adulthood [6, 7]. Adolescent utilisation of SH care services in low and middle-income countries remains low despite many strategies that have been implemented to create demand for these services [1, 8]. Most countries find it very challenging to provide comprehensive and integrated HSs to cater to adolescents' SH issues [9, 10]. The demand and utilisation of modern health care services by adolescents remain low despite this considerable investment in these services [1, 8].

Health Systems (HSs) play a significant role in ensuring access to SH services by adolescents and, in turn, impact their SH outcomes [8]. HSs have been defined as the organisation of people, institutions, and resources to ensure the delivery of SH services to adolescents [6, 11, 12]. It is of importance to note that this age group is not independent in making their decisions; therefore, they would rely on their environments to inform their choices [12].

Several strategies have been implemented worldwide to improve Adolescent Sexual Health (ASH) outcomes [1, 13, 14]. Strategies in this study will be defined as a plan implemented within a HS to impact the SH outcomes of adolescents [15]. Despite implementing some strategies, adolescents remain highly vulnerable, with a high prevalence of Sexually Transmitted Infections (STIs), high incidence of teenage pregnancy, resulting in high numbers of adolescents dropping out of schools [3, 12, 16]. Dropping out of formal schools subjects adolescents to poverty, particularly in Low and Middle-Income Countries (LMCIs), where employment opportunities are hard to come by, and there is stiff competition for the few available opportunities [2]. Concepts are not well understood when it comes to the implementation of ASH programs leading to low demand for such programs that are meant to improve their SH outcomes [1, 8]. Therefore, this study aimed to review the literature on the relationship between HSSs and ASH issues guided

by Rodger's evolutionary concept analysis framework. The study further sought to leverage the findings of this literature review to develop a Conceptual framework (CF) that would guide research on "***Development of strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe"*** [17].

## 2.0 Methods

### 2.1 Rodgers Concept analysis framework

Rodgers' evolutionary concept analysis framework would guide this study. Rodgers argued that; for one to understand the nature of concepts clearly, there is a need to understand the contextual forces that influence a specific idea at a particular time and point [18, 19]. It should be noted that these concepts are dynamic and evolve with time [18]. Rodgers's CF leverages on three key elements: a) Antecedents- these are classified as events or incidents that must occur before the occurrence of the concept; b) Attributes – that are described as characteristics of that specific concept in terms of addressing its intended issue; c) Consequences under this framework are defined as the outcomes of the particular concepts as identified from literature [20, 21].

### 2.2 Collection and analysis of data

#### 2.2.1 Inclusion Criteria

In this systematic review, we considered studies that presented Health System Strategies that targeted Adolescent Sexual Health. We targeted studies and reports published in English up to December 2020 in peer-reviewed journals the world over. We focussed on original quantitative and qualitative research and reports obtained from Google Scholar, PUBMED, EBSCO, Cochran Library, and Science Direct. The selected articles and reports had to pass the quality assessment criteria described in 2.2.6.

#### 2.2.2 Exclusion Criteria

Studies that focussed on the relationship between Health System Strategies and their impact on other age groups (other than adolescents) were excluded from this study.

#### 2.2.3 Search Strategy

The keywords *Adolescents, Health Systems, Sexual Health, and Strategies* were used to search for literature from Google Scholar, PUBMED, EBSCO, Cochrane Library, and Science Direct. The obtained literature was screened for content and relevance, as discussed in the sections that follow.

### 2.2.4 Methods of review

Titles and abstracts were reviewed independently by the primary researcher and submitted to the promoters for further scrutiny and guidance to identify articles and reports that were relevant and had to be included in this study. Disagreements were resolved through dialogue between the student and all the three promoters and reaching a consensus-based on facts exchanged. Therefore, the first author reviewed the full texts of these articles and reports that met the inclusion criteria, and the outcome of the review discussed with the co-authors.

### 2.2.5 Data Extraction and synthesis

A data collection form was developed guided by Rodgers Evolutionary Conceptual Analysis Framework to facilitate uniform data collection on attributes, antecedents, and consequences of Health System Strategies on Adolescent Sexual Health from the articles and reports that met the inclusion criteria. The first author reviewed all articles and reports and extracted data submitted to the co-authors for scrutiny and further guidance. Discrepancies observed on collected data were resolved through dialogue and reaching a consensus. Findings from the articles and reports were coded and thematically analysed to identify and explain antecedents, attributes, and consequences of HSSs on ASH.

### 2.2.6 Quality Assessment

A quality evaluation tool was adapted and used to assess the selected studies' potential to answer the research questions in line with Rodgers' Evolutionary Concept Analysis Framework [22]. This tool enables one to determine whether original studies adhered to 14 quality criteria for quantitative studies and 10-point quality criteria for qualitative studies [22]. Articles and reports were assessed for clarity in presenting attributes, antecedents, and consequences of HSSs on ASH. Furthermore, the AMSTAR tool for evaluating the methodological quality of systematic reviews was used to assess the quality of the systematic review methods. The AMSTAR tool was developed to assess the methodological quality and rigour of different authors' systematic reviews [23]. A PRISMA checklist was also completed to ensure that the study fulfilled the expectations of review articles. The outcome of the checklist is presented in **Table 1**.

### 2.2.7 Timeline

A literature search and quality appraisal, data extraction, synthesis, and writing up were done concurrently between January 2019 up to December 2020.

### 2.2.8 Development of a conceptual framework

Findings from this study informed the development of a conceptual framework that explained the relationship between the identified antecedents and attributes that influence adolescents' sexual outcomes (consequences). The theoretical framework would be presented diagrammatically to understand how these factors are interrelated as they relate to adolescent sexual health.

## 3.0 Results

There were 1804 articles and 35 reports that were obtained through an electronic search of databases. After screening for duplicates, 996 articles and 23 reports had their titles and abstracts reviewed by all four authors. Of these reviewed articles and reports, 854 articles and 12 reports were excluded as their content was irrelevant to this study. This sampling procedure meant that 142 articles and 11 reports were reviewed to determine whether they met the inclusion criteria. After reviewing the articles and reports, the three authors resolved that 42 articles and 3 reports met the inclusion criteria, and there were then analysed. These results are summarised in the PRISMA flow diagram in **Fig 1**.

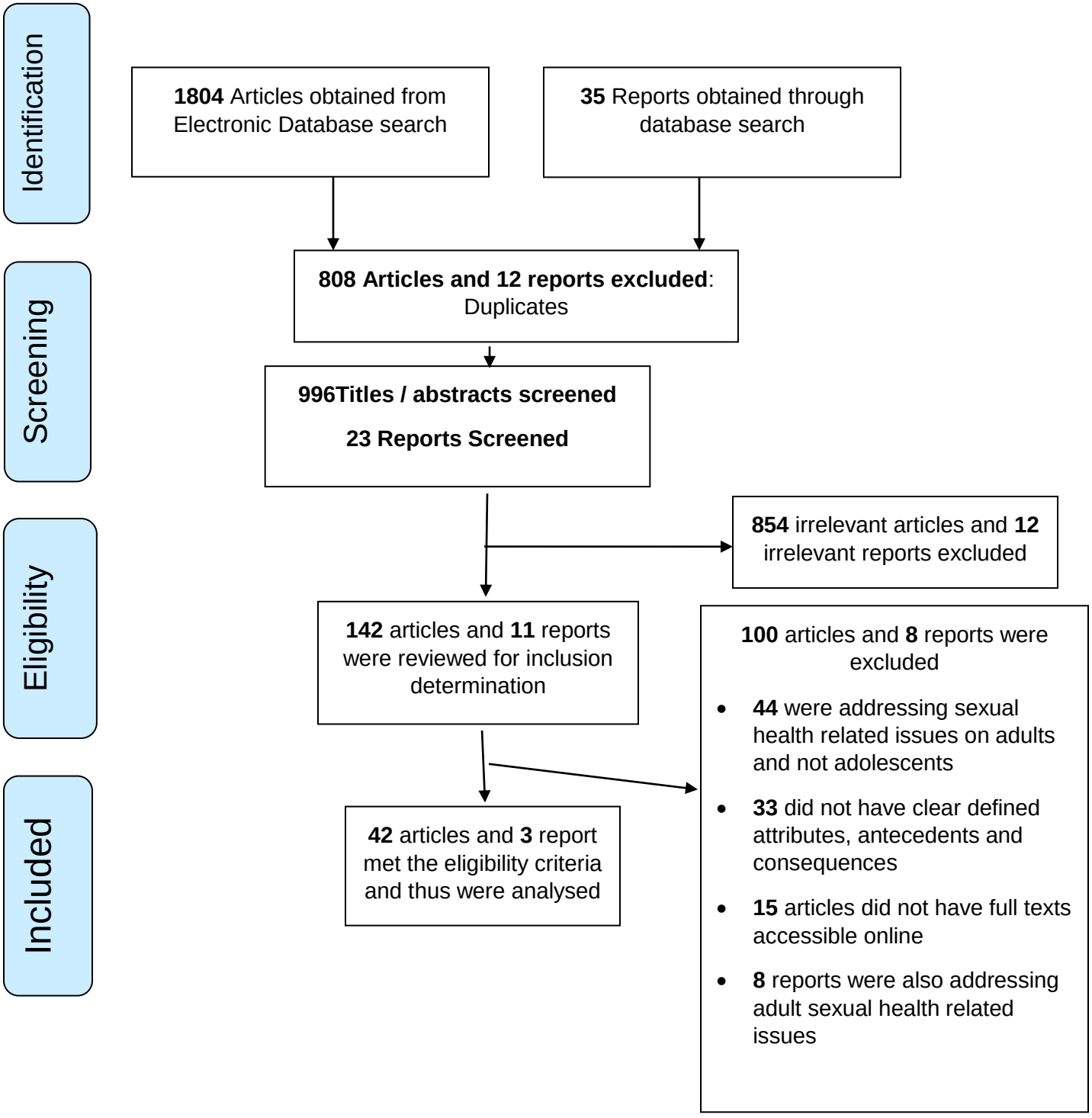


**Fig 1:** PRISMA Flow Diagram

### 3.1 Outcome of Quality Assessment Tools

All selected articles were subjected to the 14-point quality assessment tool and met the minimum standards required. The AMSTAR tool results on Methodological Quality pointed out that the methods used were of sufficient quality to address this systematic review's research questions. These findings are presented in **Table 1**.

**Table 1:** AMSTAR tool results on Methodological Quality

| AMSTAR criteria / Question | Response | Justification |
|---|---|---|
| **1. Was an 'a priori' design provided?** The research question and inclusion criteria should be established before the conduct of the review. | Yes | A review protocol was developed before conducting the literature review |
| **2. Was there a duplicate study selection and data extraction?** There should be at least two independent data extractors and a consensus procedure for disagreements should be in place. | Yes | Three reviewers reviewed the articles and reports, and a clear procedure describe to iron out disagreements and reach consensus |
| **3. Was a comprehensive literature search performed?** At least two electronic sources should be searched. The report must include years and databases used (e.g. Central, EMBASE, and MEDLINE). Keywords and or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found. | Yes | The review focussed on original quantitative and qualitative research and reports obtained from Google Scholar, PUBMED, EBSCO, Cochran library and Science Direct. |
| **4. Was the status of publication (i.e. grey literature) used as an inclusion criterion?** The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc. | Yes | The inclusion and exclusion criteria are fully described and also summarised in the PRISMA flow diagram presented in this review as **Fig 1.** |
| **5. Was a list of studies (included and excluded) provided?** A list of included and excluded studies should be provided. | No | The list was not provided but can be supplied upon request |
| **6. Were the characteristics of the included studies provided?** | Yes | These were summarised as Tables 1-3 that |

| | | |
|---|---|---|
| In an aggregated form, such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analysed e.g. age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported. | | summarised contributions of literature according to three Rodgers characteristics that are, attributes, antecedents and consequences. |
| **7. Was the scientific quality of the included studies assessed and documented?**<br>'A priori' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo-controlled studies, or allocation concealment as inclusion criteria); for other types of studies, alternative items will be relevant. | Yes | These were assessed using the 14 point quality assessment tool and Rodgers Evolutionary Conceptual Framework. |
| **8. Was the scientific quality of the included studies used appropriately in formulating conclusions?**<br>The results of the methodological rigour and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations. | Yes | Studies that were included were guided and met Rodgers Evolutionary conceptual analysis framework requirements |
| **9. Were the methods used to combine the findings of studies appropriate?**<br>For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e. Chi-squared test for homogeneity, I2). If heterogeneity exists a random-effects model should be used and or the clinical appropriateness of combining should be taken into consideration (i.e. is it sensible to combine?). | N/A | The review had a guiding conceptual framework; therefore, the combination of articles was guided by this framework |
| **10. Was the likelihood of publication bias assessed?**<br>An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and or statistical tests (e.g., Egger regression test). | N/A | The review was guided by Rodgers' Evolutionary Concept Analysis framework. However, limitations of this systematic review are presented. |
| **11. Was the conflict of interest stated?**<br>Potential sources of support should be clearly acknowledged in both the systematic review and the included studies. | Yes | All authors declared that they did not have any conflict of interest. |

### 3.2 Definition of Sexual Health

The definition of sexual health has evolved over the years, leveraging on the 1975 World Health Organization that defined sexual health as *"Integration of the somatic, emotional, intellectual and social aspects of sexual being in ways that are positively enriching and that enhance personality, communication, and love"* [16, 24, 25]. The change in these definitions has been influenced by political, social, historical events, and human rights considerations [3, 24]. After the sexual revolution in the 1960s, there has been an on-going struggle over reproductive rights, rights for same-sex relationships, and abortion rights for adolescents [24]. These struggles are influenced by different contextual factors, with some countries reject implementing or aligning some of the proposed sexual rights [26, 27]. These have influenced how health systems are structured in different countries with different contextual features resulting in varying adolescent sexual health outcomes.

### 3.3 Attributes, Antecedents and Consequences of HSSs influencing ASH

#### 3.3.1 Antecedents

Antecedents that influence ASH that were reported in the literature were: adolescent sexual rights, lack of understanding of what sexual health is, need for integrated ASH systems, available resources, and type of society. Literature sources reporting these attributes are summarised in **Table 2.**

**Table 2:** Summary of Antecedents of HSSs influencing ASH

| **Key Antecedent Factors** | **Supporting Literature** |
|---|---|
| Adolescent sexual rights | [2, 16, 28-31] |
| Lack of understanding of what sexual health is | [16, 24, 30, 32, 33] |
| Need for Integrated ASH Systems | [7, 13, 30, 34] |
| Available Resources | [32, 33] |
| Type of society | [16, 32, 35-38] |

##### 3.3.1.1 Adolescent Sexual Rights

One of the antecedent themes that arose from literature was the need to protect adolescents as a human right necessity/requirement [2, 29]. Authors argue that adolescent sexual rights, such as the right to access sexual health information, are more often violated [2, 29]. There are arguments that sexual education is restricted in schools or religious setups, thereby denying

adolescents key information that would inform their decisions regarding sexual health [16]. Therefore, most strategies have been targeted at improving adolescent access to information, and various health systems have used different strategies to disseminate as much information as possible on sexual health [30]. Some of these strategies have leveraged on available technologies (social media, utilisation of sports, to name a few) to ensure that information is disseminated to adolescents [31]. Authors further argue that the current health systems are rigid and violate adolescents' rights [28]. Flicker and Guta (2007) say that there is a need that adolescents be allowed to make their own decision in being part of researches that are meant to gather data that is aimed at improving their sexual health outcomes [28]. They argue that involving parents in consenting to adolescents participating in sexual research silences them, which negatively impacts the process of collecting data that answers questions regarding the adolescents' expectations [28].

#### 3.3.1.2 Lack of understanding of what sexual health is.

Sexual health definitions have evolved over the years and have been contextualised to suit certain specific environmental contexts [16, 24]. Different settings have created varied definitions that are sometimes contradictory and create confusion with different countries contextualising the meanings to suit their contexts [24]. The universal understanding of what sexual health entails is therefore influenced by cultural, social, political, and environmental contexts and might differ from country to country or continent to continent [16, 24]. Therefore, HSs have been designed in a way that lacks comprehensiveness as there are varied expectations that commonly undermine international expectations and recommendations regarding the management of ASH issues [16, 24]. Some authors argue that most health service providers do not speak about sexual health issues as often as they are expected to address sexual health concerns of adolescents [32] proactively. Lack of such interaction has created huge gaps in knowledge in adolescents [32, 33]. It is also presented that most studies evaluating the impact of different HSSs on promoting sexual health in young people often lack methodological rigour leading to uncomprehensive conclusions and recommendations that do not adequately inform policymakers on the direction that they should take with their strategies if they are to promote safe sexual practices in young people [30].

#### 3.3.1.3 Need for integrated ASH systems

Adolescents need to be exposed to programmes that enhance their negotiating skills for safe sexual behaviours [34]. The approaches or strategies used should be comprehensive in providing them with skills that enhance their ability to make beneficial relationships (with their

parents, guardians, and adults in general) that are supportive and offer them guidance towards economically sound career prospects [7, 34]. ASH strategies should, therefore, go beyond sexual issues to provide an integrated platform to ensure wholesome development in these adolescents [7]. Therefore, strategies targeting these groups should be driven by the need to facilitate growth and enhance skills well beyond sexual health issues and offer equal opportunities for both girls and boys [34]. There is a gap that ASH programs are not integrated into main HS structures, thereby leading to less time and resources being dedicated to this cause [13, 30].

#### 3.3.1.4 Available Resources

HSSs are crafted based on available resources to fund and sustain specific sexual health programs [32]. Health service providers in resource-poor settings avoid *"opening a can of worms,"*, asking questions or following up on adolescent sexual health issues that would require more resources and time than the HS can offer at that specific time and point [32]. Lack of resources leads to non-prioritisation of adolescent sexual health issues and avoidance of asking or following up on matters that might have a bearing on ASH issues [32, 33].

#### 3.3.1.5 Type of society

HSSs are influenced by different ethnic values [32, 35]. Most people identify with different cultural norms that could be for or against certain HSSs [35]. Strategies that clash with specific societal beliefs are bound not to work. Adolescents from poor settings such as those from rural areas are more at risk of suffering adverse sexual health outcomes than those in urban areas that have easy access to information and health facilities [36, 37]. Adolescents utilising Indigenous Health Systems (IHSs) often have poor health outcomes as compared to utilising Modernised Health Systems (MHSs) [38]. Crafting and implementing HSSs to address ASH issues are, therefore, leveraged on specific societal characteristics to generate demand for ASH services [16, 35].

### 3.3.2 Attributes

Sexual health attributes obtained from literature were: contextual, dynamic, activism, and advocacy, and inefficient. Literature sources reporting these attributes are summarised in **Table 3** below.

**Table 3:** Summary of key Attributes of HSSs with ASH

| Key Attribute Factors | Supporting Literature |
|---|---|
| Contextual | [7, 16, 24, 35, 39-44] |
| Dynamic | [16, 24, 25, 37, 39-43, 45] |
| Activism and advocacy | [31, 46-50] |
| Inefficient | [16, 24, 32, 33, 35-37] |

#### 3.3.2.1 Contextual

There is no consensus on how sexual health is defined, interpreted, and infused into HSs within different communities in different countries [24, 25]. HSSs that are implanted in various communities in different countries are influenced by different contextual factors such as political environment, culture, religion, technological developments, and many more that will be prevailing at that specific time and point [16, 24, 25, 42, 43]. There is also a need that the HSSs align and observe different societal values and expectations and conform to the leadership structures that will be in charge then [35, 44].

#### 3.3.2.2 Dynamic

Different HSSs are implemented to address ASH issues in response to ever-changing environments [37, 39-42, 45]. It is presented that strategies to address sexual health issues have evolved in line with the ever-changing environmental and contextual factors leading to utilisation of different technological platforms to ensure the relevance of the strategies in addressing ASH issues [16, 24, 25, 39, 41, 43].

#### 3.3.2.3 Activism and Advocacy

Most HSSs, as identified in the literature, leverage on activism and advocacy to create demand for ASH programs [31, 46, 47]. Different strategies are demonstrated as health service providers utilise various strategies to involve adolescents and lure them into programs that target their knowledge, attitudes, and behaviours to promote safe sexual practices [48-50].

#### 3.3.2.4 Inefficient

Due to differences in adolescents' age groups, social status, ethnic beliefs, and expectations, designed HSSs are never comprehensive enough [16, 24]. Therefore, it is noted that most HSSs have their strengths and weaknesses, thus putting some adolescent populations at risk while, on the other hand giving advantages to other adolescent populations [32, 33, 35-37].

### 3.3.3 Consequences

Consequences of these attributes and antecedents were: Weak adolescent programs constrained by different factors, parallel or fragmented systems resulting in low impact, vulnerability, and heightened risks for poor health outcomes and challenges in interacting with various ethnic groups and gender. Literature sources reporting these consequences are summarised in **Table 4.**

**Table 4:** Summary of Consequences of HSSs on ASH

| **Key Consequences Factors** | **Supporting Literature** |
|---|---|
| Weak adolescent programs constrained by different factors | [2, 7] |
| Parallel or Fragmented ASH Systems resulting in low impact | [13] |
| Vulnerability and heightened risks for poor health outcomes | [3, 7, 34, 39-41] |
| Challenges in interacting with different ethnic groups and gender | [26, 27, 32, 33] |
| Improved uptake of sexual health programs | [41, 42, 51, 52] |
| Improved adolescent sexual health outcomes | [3, 8, 9, 16, 29, 39, 41, 42, 51, 52] |

#### 3.3.3.1 Weak adolescent programs constrained by different factors

Adolescent sexual health programs usually fail to achieve desired health outcomes. There are stigma and controversial attitudes that undermine these adolescent sexual health programs rendering them ineffective [7]. These factors expose adolescents to fragmented programs that exacerbate their vulnerability, mainly fuelling confusion in how adolescents are expected to conduct themselves regarding sexual health issues [7]. Therefore, adolescents become victims of sexual violence, early pregnancies, unsafe abortions, and STIs [2, 7].

#### 3.3.3.2 Parallel or fragmented systems resulting in low impact.

I was revealed that several ASH programs are delivered as specific fragments addressing specific programs [13]. Sexual health programs such as those addressing STIs, HIV, and AIDS and family planning are generally funded by different organisations leading to a fragmented approach in addressing ASH issues [13]. Most HSSs, therefore, lack comprehensiveness and run parallel to each other though delivered to the same recipients leading to conflicts, duplication, confusion, and inefficient utilisation of resources [13].

#### 3.3.3.3 Vulnerability and heightened risks for poor health outcomes.

Adolescents are placed at heightened risks for poor sexual health outcomes due to the non-compatibility of HSSs with the consideration of the developmental needs of their specific age groups [3, 34, 41]. There is a need to contextualise strategies so that it considers the different developmental stages and the needs of these adolescents, thereby ensuring that the approach used is appropriate to attain desired goals [7, 39-41].

#### 3.3.3.4 Challenges in interacting with different ethnic groups and gender.

Authors point out that no matter how accommodating some HSs are to adolescents, some ethnic groups were born from less liberal communities and are not forthcoming in discussing sexual health-related issues [32]. It is also presented that gender plays a vital role as some health service providers prefer talking about sexually related matters with service recipients of the same sex [32, 33]. This disadvantages some service recipients as they are denied the chance to be given information that they could pass on to their children in adults' cases, thereby disturbing sexual health information dissemination [33]. There are also challenges where most health service providers find it challenging to discuss sexual health issues with individuals in same-sex relationships [32]. These challenges create barriers in HS functions in terms of information dissemination expected to foster safe sexual practices in adolescents [26, 27, 32].

#### 3.3.3.5 Improved uptake of sexual health programs

Some strategies in some settings have centred on behaviour change communication, life skills and livelihoods, youth-friendly service delivery, policy advocacy, and coordination [52]. Furthermore, implementing a multi-sectorial approach to ASH package delivery and all this, in turn, enhanced uptake of services in different country settings [41, 42, 52].

#### 3.3.3.6 Improved adolescent sexual health outcomes

Different contextual strategies that have been implemented in different countries led to improved health outcomes [52]. The result of these strategies has been an increase in proportions of adolescents who seek ASH information utilisation of the reproductive health services and products, voluntary testing as well as the adoption of safe sexual practices [3, 8, 9, 16, 29, 39, 41, 42, 52].

### 3.4 Overcoming barriers to Safe Sexual Practices in Adolescents

Sources found in the literature suggested that training, providing sufficient information to adolescents, and expanding roles of Health Service providers would improve adolescent sexual

Health Outcomes. These findings are summarised in **Table 5** and further expanded on in the sections that follow.

**Table 5:** Strategies to overcome barriers to Safe Sexual Practices

| Strategies to overcome barriers to Safe Sexual Practices | Supporting Literature |
|---|---|
| Training | [32, 53, 54] |
| Providing Sufficient Information on SH | [3, 7, 32, 33, 39, 41, 55-61] |
| Expanding the roles of HSPs to ensure coverage and full utilisation of systems | [32, 39] |

### 3.4.1Training

It is evident from the findings of this study that most HSs are very unfriendly to adolescents. They are often characterised as being judgemental, less tolerant, and hostile towards adolescents [9, 53]. There are generally proposals from the literature that suggests that for HSSs to effectively address ASH issues, there is a need to train HSPs to be accommodative, sensitive, and tolerant to adolescents [32, 54]. Considering the above proposals will enable these ASH systems to be accessible to adolescents through the generation of demand for services offered, thereby improving coverage of ASH programs and thus minimising barriers associated with poor relations between adolescents and HSPs.

### 3.4.2 Providing Sufficient Information on SH

Findings in this study suggest that SH is misunderstood, and the definitions are not internationalised. Different contextual factors influence SH's interpretations, and diverse communities have their understanding of what sexual health is. Different strategies, therefore, are used concerning different population groups. There are proposals that SH issues should be infused into the curriculum at schools to ensure that all adolescents get relevant information on SH [3, 39, 55]. Outside the school setup, some conservative communities might not permit SH information sharing between parents and their adolescents [56, 57, 61]. Coming up with contextualised strategies to different adolescent age groups would enable effective information sharing and promote safe sexual practices in adolescents [7, 32, 33, 39, 41, 58-60]. There is also a need to promote dialogue between adolescents and their parents to facilitate information sharing and responsible parenting and guidance regarding SH issues [58].

### 3.4.3 Expanding the roles of HSPs to ensure coverage and full utilisation of systems

It is presented in the findings that HSPs do not address SH issues proactively with adolescents, thus making the services rendered ineffective and disjointed [32]. HSPs should take a leading role in information dissemination and marketing of ASH programs to the extent that their services could be extended to schools [32, 39]. The availability of sound information would ensure demand generation for ASH programs, trust-building between HSPs and adolescents and the general community. Such a scenario would reduce conflicts between different HSs and foster an inclusive and integrated approach to the management of ASH issues.

## 3.5 The conceptual framework resulting from the findings

A conceptual framework was developed based on the findings of this study and presented as **Fig 2**. The model also includes proposed strategies found in the literature that aim to improve ASH outcomes and the desired outcomes that would, therefore, be achieved.

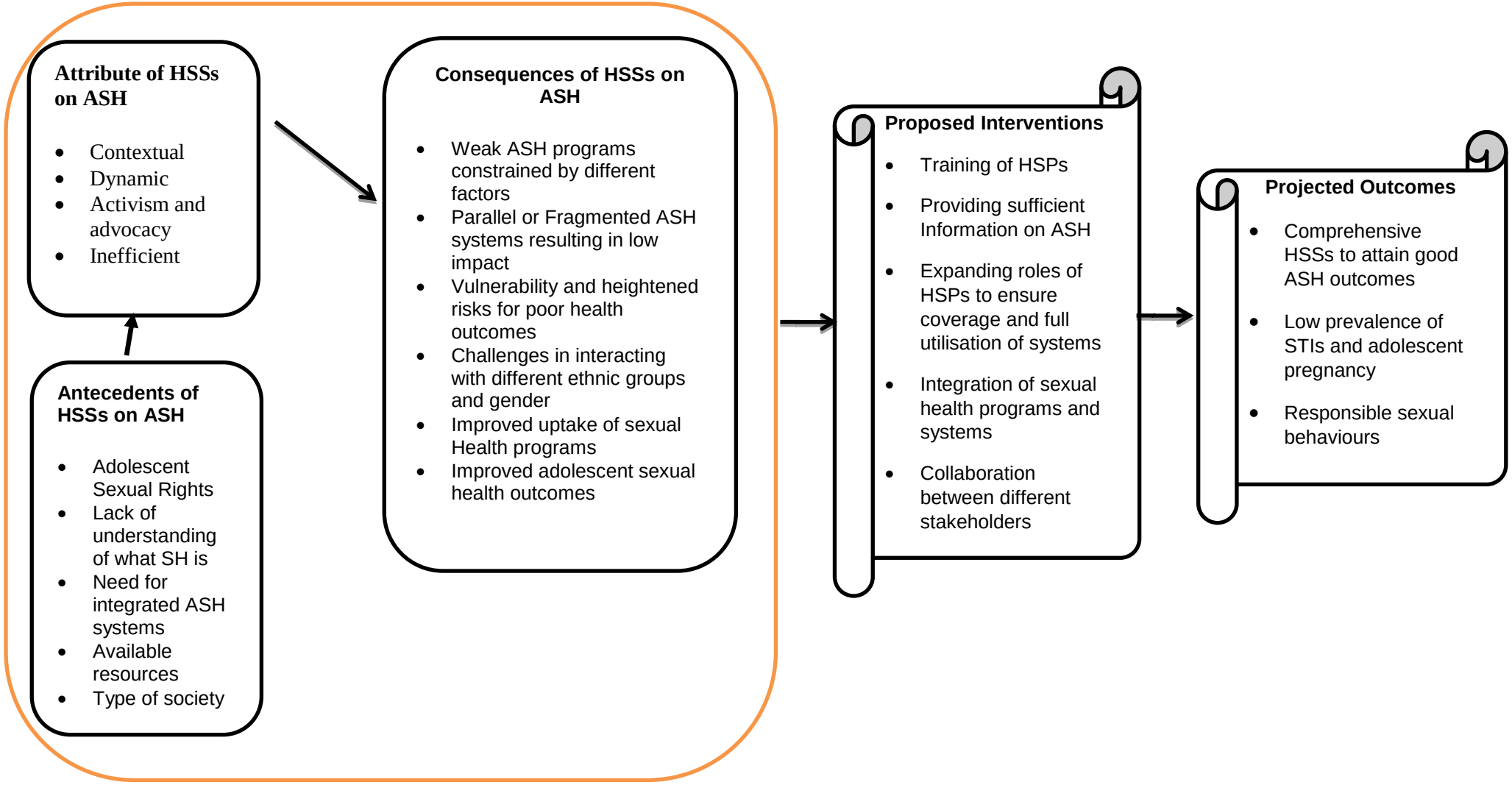


**Fig 2:** CF of HSSs and ASH as informed by findings

## 4.0 Discussion

It was noted that different contextual settings have different definitions when it comes to Adolescent Sexual health and thus influencing the packages available to adolescents, thereby justifying the success and failure of programs in different countries. These countries have various service providers with varying levels of competencies and ideologies and the working conditions (contextual factors) as informed by the interpretation and prioritisation of ASH issues [62, 63]. The interpretation of different issues relating to ASH has a bearing on the systems' efficiency and effectiveness that would be conceptualised and implemented in response to the adolescents' needs [44, 62, 64, 65].

It was also noted that several issues drive different health systems and the resultant programs they offer adolescents. This scenario means that not all strategies would get the desired policy changes that would influence desired outcomes across different countries [44, 62, 64, 65]. Consequently, similar strategies could have different consequences (good or bad) in managing ASH issues as influenced by matters contextual to that specific population [66].

The full utilisation of Health systems depends and is influenced by access to information. Access to sound information ensures improved collaborative work, behaviour change, learning, knowledge management, and adaptation to local contexts [55, 66]. Arguments have erupted that discourage the safety of Indigenous Health Systems though they play an essential role in improving adolescent sexual health issues [17, 55]. Different strategies have been used in the past to aid effectiveness in Health Systems. In some health systems, electronic systems such as the utilisation of emails have been used as a platform for making appointments and general consultations for health system users, including adolescents [43, 67]. As a result, records management is efficient, and health care users could make an appointment or consult through electronic platforms. Adolescents are usually shy to consult on matters that relate to sexual behaviours/issues. Therefore, this electronic platform could provide a platform for information sharing in as far as adolescents are concerned [42, 68].

## 5.0 Limitations of this study

Findings from the different articles and reports reviewed were not presented independently but collectively according to themes. This scenario could have led to biases towards themes and not the in-depth and rich findings of each of the respectively reviewed articles and report study.

## 6.0 Conclusions

Adolescents are very vulnerable and need to be protected at all costs. Different contextual factors influence different policy changes, and the consequences are mixed, both positive and negative. There is a need to have comprehensive HSSs that would positively impact ASH through proposed comprehensive and integrated systems. Comprehensive HSSs would reduce their vulnerability and ensure they access HSs and utilise them in a manner that would improve their SH outcomes. Providing training, information sharing, and integrating ASH systems is critical in achieving and enhancing desired ASH outcomes.

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# Indigenous Health Systems and Adolescent Sexual Health in Umguza and Mberengwa Districts of Zimbabwe: Community Key Stakeholders' perspectives

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See **Appendix 17** for Author Guidelines.

**0.0 Abstract**

***Background:*** Different stakeholders play varying roles in shaping up adolescent sexual behaviours that, in turn, influence their sexual experiences. In Zimbabwe, it has been reported that adolescents from cultural districts exhibit poor sexual health outcomes as compared to other districts. Therefore, this study sought to explore the role that is played by different key community stakeholders in the Indigenous Health System and how it impacts on Adolescent Sexual Health issues. The study further explores how the Indigenous Health System could be integrated into the Modern Health System.

***Methods:*** A qualitative cross-sectional survey was conducted on purposively and snowballed respondents in Umguza and Mberengwa Districts. Indepth face-face unstructured interviews for key community stakeholders and Focus Group Discussions for parents and legal guardian of adolescents were used to gather and record data. The recorded data were transcribed verbatim, translated to English, coded, and thematically analysed on MAXQDA Analytics Pro 2020.

***Results:*** Four superordinate and twelve subordinate themes emerged from the data during analysis. Stakeholders play varied roles in adolescents' upbringing and support though there are contradicting teachings from the Indigenous Health System and Modern Health System.

***Conclusions:*** It is possible to integrate these two systems though there were foreseen logistical challenges and clashes in the values and belief systems of the two systems. Participants made suggestions on how these challenges could be overcome. There is a window of opportunity to pursue the suggested ways of integrating Indigenous Health System and Modern Health System for improved Adolescent Sexual Health outcomes.

**Keywords:** Adolescent; Community; Indigenous Health Systems; Sexual Health; Stakeholders; Zimbabwe

## 1.0 Background

Adolescent Sexual Health outcomes are a global concern, with many countries grappling to provide adequate services that cater to adolescents [1-3]. Globally, governments have failed to sufficiently meet their goals on devising robust programs that foster safe sexual behaviours in adolescents and yet at the same time equipping different stakeholders with sufficient skills for proper parental protective actions [2]. Several studies have explored how different country settings include as many stakeholders in ASH management and how this impacts adolescent sexual behaviours both positively and negatively [1,2,4,5]. Some programs implemented have shown varying success or failure rates of ASH program interventions being influenced by socio-demographic characteristics of parents, guardians, and different stakeholders involved in the adolescents' lives [1,5-7].

Religion, culture, and political scenarios in different communities in different countries have also been reported to influence adolescents' behaviours, practices, and experiences to a certain extent in as far as sexual health (SH) is concerned [2]. Health Systems (HSs) that are in place in different country settings also do play significant roles in shaping adolescent sexual behaviours and practices [8,9].

In Zimbabwe, two recognised HSs exist: the IHS, which is run by Traditional Healers, Herbalists, Traditional Attendants, Community Leaders, and Community Members [10]. The IHS is readily accessible to community members, particularly those marginalised, therefore commanding a considerable proportion of users in different districts [10-12]. The second system is a modernised HS run by trained personnel such as Nurses, Doctors, and many more who would go through formal training in their line of work [11,12]. The two systems are regulated by boards such as the Health Services Board (HSB) and the Zimbabwe National Traditional Healers Association (ZINATHA) [13]. However, these systems run parallel, having a minimum collaborative effort to manage ASH issues [13].

The abstinence-only before marriage approach is usually preached amongst religious communities in Zimbabwe [1,5,14]. However, in some cultural setups, adolescents' lives and futures are at risk from cultural activities that promote early sexual engagement, such as marrying them early to fulfil cultural obligations [15,16]. Different stakeholders in the communities play a significant role in shaping Zimbabwe's adolescent sexual behaviours [5,17]. Statistics regarding ASH outcomes in Mberengwa and Umguza show that these two districts have been fairing badly compared to some communities in the country [5,15]. Adolescents in

these two cultural districts have the highest prevalence of teenage pregnancy and a high prevalence of Sexually Transited Infections (STIs) [15].

Therefore, this study sought to explore the role that is played by different key community stakeholders on ASH issues. The inquiry further sought to gain insights into what needed to be done to integrate IHS and MHS in the management of ASH issues and the foreseen challenges thereof from the critical stakeholders in the communities. The study further solicits critical stakeholders' opinions into what needs to be done to overcome the obstacles they would have mentioned, if any, to improve ASH outcomes.

## 2.0 Methods

### 2.1 Study Setting

The targeted study area was Mberengwa and Umguza districts that had high prevalence rates of teenage pregnancy and STIs among adolescents (**Fig 1**) [10,15]. The two districts are highly cultural and perform different activities in as far as adolescent sexual development is concerned [6,10,18]. In Umguza, there is a cultural activity called *Umguyo,* a celebratory ceremony in recognition of the rite of passage to circumcised adolescents as they graduate to manhood [19]. The Xhosa tribe does this ceremony, and young women /adolescents are also invited to the ceremony to celebrate the young boys' passage from adolescence to manhood [19]. In Mberengwa, cultural initiation is also done following guidance from Traditional Leaders, Traditional Healers, Herbalists, and Traditional Attendants [20]. This cultural trait is expected in the *Varemba* tribe that are dotted around the District [10,21]. However, the IHS in these two districts plays a significant role in ensuring access to health care by different community members regardless of the tribe [10,19,21]. There are local leaders such as the Chiefs, the Kraal Heads, and many more recognised by the government under the Ministry of Local Governance [22-25]. Different tribes are found in these districts, with most people surviving through peasant farming [10,19]. The Northern and southern parts of Umguza, for example, Nyamandlovu, experiences a lot of migration as most breadwinners go and seek employment in the neighbouring countries such as Botswana and South Africa [26,27]. There is a lot of human and goods trafficking in these areas as the breadwinners send goods through the services of cross-border transporters popularly known as *Omalayitsha* in the local language [28,29]. The rate of school dropouts by adolescents in these districts is high [27].

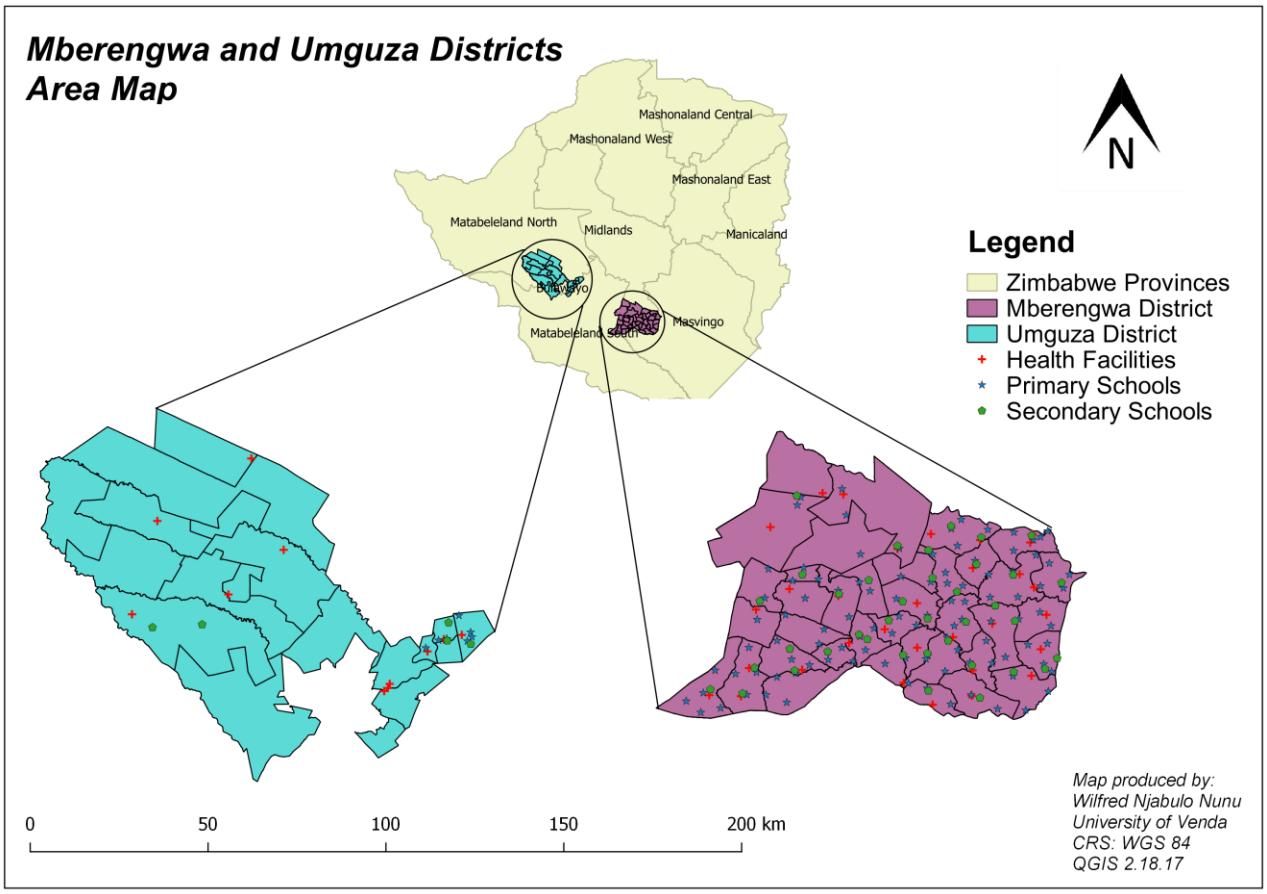


**Fig 1:** Mberengwa and Umguza Districts, Zimbabwe

### 2.2 Study design

A qualitative cross-sectional survey was conducted in Umguza and Mberengwa district to answer the stated objectives. A qualitative inquiry was chosen as it enabled the respondents to give as much information as possible and allowed the researcher to probe further and understand issues that were of interest regarding ASH [30]. This design also enabled the identification and follow-up of critical informants that played an essential role in ASH management [31].

### 2.3 Study Population and Sampling

This research targeted key stakeholders that played a role in the upbringing and taking care of adolescents. Therefore, the study focussed on all stakeholders in the community who had a role to play in ASH management. This inclusion criterion gave a total of twenty-one traditional leaders (that is, Chiefs; sixteen from Mberengwa and five from Umguza), Herbalists, Traditional Attendants, Parents, and Legal Guardians of adolescents in these two districts. Purposive

sampling was used to target and recruit Chiefs as they are well known; snowballing was used on Traditional Healers, Herbalists, and Traditional Attendants as some are not formally registered, and many are secretive about their operations. Parents and Legal Guardians were purposively selected, that is, only those that had adolescents under their care qualified to be part of the study.

### 2.4 Data Collection tools

Data was collected from the respondents through interviews form Traditional Leaders, Traditional Healers, Herbalists, and Traditional attendants. The interviews were done as guided by the interview guide that was developed in line with this research's stated objectives, and the copy of the interview guide is attached as **Appendix 10**. Interviews were conducted in the language that the respondent was comfortable with English, isiNdebele, or Shona, as they are the three main languages spoken in Zimbabwe [32]. The interviews lasted for an average period of between 15 minutes to 1hr 30 minutes. A total of ten Focus Group Discussions (FGDs) were also conducted in the two districts are five in Umguza and five in Mberengwa Districts. These FGDs had a fifty-fifty representation of males and females (so each group would have five females and five males). The researcher ensured that only one parent from a family was selected to minimise bias and dominance. The FGDs lasted between 45 minutes to roughly two hours in cases where respondents were debating. These interviews and FGDs were recorded using a digital tape recorder with prior permission having been obtained from the participants. The FGD guide is appended to this thesis as **Appendix 11**.

### 2.5 Data Management and Analysis

The data collected from the interviews and FGDs were transcribed verbatim and then translated into English (for those that would have used isiNdebele or Shona), and transcripts exported to MAXQDA Analytics Pro 2020 for coding and thematic analysis. Superordinate and subordinate themes were, therefore, identified, developed, and presented as results in line with the objectives stated on the background.

## 3.0 Results

### 3.1 Characteristics of Participants

Fifty-eight (**58**) key stakeholders were interviewed. Their ages ranged between 28 and 101 years. The key respondent characteristics are presented in **Table 1**. All the ten FGDs were conducted though one had 9 participants after one female participant withdrew after being

notified of a close family member's death during the discussions and had to be excused in Mberengwa.

**Table 1:** Characteristics of Participants

| **Respondent type** | **Mberengwa** Male (Female) | **Umguza** Male (Female) | **Totals** Male (Female) |
|---|---|---|---|
| **Interviewed** | | | |
| Traditional Leaders | 10 (0) | 2 (0) | **10 (2)** |
| Traditional Healers | 12 (2) | 9 (1) | **21 (3)** |
| Herbalists (and some of who double up as prophets) | 4 (4) | 3 (1) | **7 (5)** |
| Traditional Attendants | 2 (4) | 3 (1) | **5 (5)** |
| **Totals** | **28 (10)** | **17 (3)** | **45 (13)** |
| **Grand Total** | **58** | | |
| **Participated in Focus Group Discussions** | | | |
| Parents /Guardians | 25 (25) | 25 (24) | **50 (49)** |
| **Totals** | **50** | **49** | **99** |

### 3.2 Themes that arose from data

Four superordinate themes were obtained as guided by the objectives and the interview guides. Furthermore, twelve subordinate themes were obtained under the four superordinate themes as summarised in **Table 2**. These themes are presented in-depth in the result sections that follow.

**Table 2:** Summary of emerging themes

| Superordinate theme | Subordinate Themes |
|---|---|
| The role played by stakeholders in ASH related issues | ✓ Teaching, discipline, and grooming<br>✓ Upkeep protection and support<br>✓ Treatment of STIs and other conditions |
| Integrating IHS and MHS | ✓ Improvement of management of ASH issues<br>✓ Existing Gaps |
| Foreseen Challenges | ✓ Mistrust and Pride<br>✓ Logistics |
| Overcoming challenges | ✓ Collaborations through establishing committees<br>✓ Aligning programs and respecting stakeholders<br>✓ Referrals<br>✓ Establishing Consultation rooms for indigenous practitioners in health facilities<br>✓ Development of Terms of Reference |

### 3.2.1 Role played by stakeholders

Three subordinate themes emerged under the superordinate theme "role played by stakeholders in ASH related issues. These are detailed below.

#### 3.2.1.1 Teaching, discipline, and grooming

A subordinate theme that emerged on the roles of the different stakeholders on ASH-related issues was grooming and disciplining adolescents hence, as they adopt specific prescribed values that are expected of them by the society. Participants explained that they are responsible for grooming, teaching, and disciplining the adolescents in the community or family expectations. Under this subordinate theme, participants further cited that though they are meant to ensure they groom adolescents in dignified ways, they have encountered a lot of challenges that hinder them from doing everything to the best of their ability. It also came out that grooming adolescents are torrid since many competing value systems are leading to some parents and guardians giving up.

***Participants said:***

"*It is our role to ensure these children are taught ways of behaving themselves as they are growing up. They meet a lot of new enticing things that they should be made aware of to make smart decisions*". **Participant 3, Male (87 years), Interview.**

"*Even though most of our children engage in sexual activities early, at the homes we try by all means to exercise control in as much as we can to teach them about sex, its associated consequences as well as how they could stay safe. We even have teaching sessions in our churches that emphasise abstinence and give information regarding issues relating to sexual health in general*". **Participant 65, Female (44 years), FGD.**

*"We had our ways culturally of ascertaining whether or not the adolescent had engaged in sexual activities; for instance, the aunts were responsible for checking the girls. Nowadays, it isn't easy to follow through all these processes as there are now new value systems that differ from our belief systems, such as the new Christian religion. All these things are not permitted there*". **Participant 1, Male (101 years), Interview.**

"*We are blaming this so-called civilisation that you educated people bring in and make the policies. It is difficult now to discipline our children as the laws no longer permit it. If you slap a child, you are arrested for child abuse. In our yesteryears, we would be disciplined by our elders, and they would suffer no consequences as they would have been grooming their children*". **Participant 1, Male (101 years), Interview.**

"*Our role of grooming and disciplining our kids have been taken away from us. Isn't now the children belong to the state? What role then do we play since these kids only belong to us for feeding purpose?*" **Participant 15, Male (88 years), Interview.**

"*We no longer have total control of our children as indigenous people. We are blamed if we fail to groom our children properly but are we allowed to teach them our ways of living?*" **Participant 12, Female (56 years), Interview.**

"*Our children have been polluted by these cultures of civilisation that you are teaching them at your schools. You have ensured they unlearn all the values we instil in them as they grow up and dismiss our indigenous ways as uncivilised. Do you then blame us for them engaging in sexual activities early?*" **Participant 59, Female (46 years), FGD.**

"*This task is daunting as most issues are prescribed to us by the government on how we raise our kids with the new things coming up; it is difficult to be an effective parent. Most of us have given up; we teach the kids one thing culturally; at their schools, they are told that what we taught them does not work; it is outdated. What more could we do? Our kids nowadays reach puberty after having sexual intercourse multiple times. They do not have time to mature properly*". **Participant 85, Male (62 years), FGD.**

### 3.2.1.2 Upkeep, protection, and support

It emerged that stakeholders play a significant role in the adolescents' upkeep and do their best to protect them from the social ills that might tempt them to engage in early sexual activities. Participants further cited that most stakeholders are failing in ensuring they meet their obligations, thus putting the adolescents' sexual health at risk from sexual predators that would use the money to lure them since there are illegal mining activities in those two districts. Participants cited that due to poverty, some of the adolescents are forced to fend for themselves, resulting in them being exposed to abuse as their parents or guardians would have less control over their lives and their decisions. Participants also cited that due to the generational gaps and advancements in technology, most of the strategies they were using to raise their children were no longer effective or they are viewed as outdated and inappropriate by the children themselves and other members of the societies making the task of raising children challenging. Participants further cited that adolescents now have access to lewd content in their cellular phones that the elderly cannot monitor properly.

***Participants said:***

"*We are no longer able to take most of our kids to school. Most dropout from school at an early age as the monies we are getting or making is meaningless. In such a situation, what do they spend their days doing except thinking of marrying or engaging in sexual activities*". **Participant 80, Female (38 years), FGD.**

"*How do you protect your adolescent, yet you can't even provide for them? Some even make more money than us parents through illegal mining. Automatically they become our breadwinners at an early age. Can you then tell the breadwinner what to do, yet you depend on them?*" **Participant 67, Female (52 years), FGD.**

"*I am expected to protect my niece, who stays with me. But as you see, I am very old, and she can cheat me. Her parents sent her a cellular phone that I can't even operate. I am not sure who she will be communicating with. But at the end of the day, I have to look after her though there is nothing I can do if she goes astray. I no longer have the energy to run around disciplining her; therefore, I am no longer able to protect her*". **Participant 52, Female (81 years), Interview.**

"*I am taking care of my adolescent as well as her child and supporting her. She was emotionally traumatised as she was a victim of an unforeseen circumstance. We have no choice but to provide emotional support as well as financial support for the upkeep of her and my nephew*". **Participant 91, Female (43 years), FGD.**

### 3.2.1.3 Treatment of STIs and other conditions

Another subordinate theme that arose was that most Traditional Healers and Herbalists were usually involved in ASH-related issues by providing services to treat STIs that would have bedevilled the adolescents. Herbalists also cited that they assist with herbs to alleviate period pains in female adolescents and treat ailments related to the reproduction systems.

***Participants said:***

"*We only get to see most of these adolescents when they come accompanied by their parents or in private to seek treatment of STIs. They will be at advanced stages and rotting with these STIs* ". **Participant 4, Male (77 years), Interview.**

"*We have ways that we use to treat STIs as the adolescents are given herbs that are meant to act as laxatives as well as clean or wipe off the STIs. However, if not properly done when we approach spring, the STIs would reappear again. We have different types of STIs, so one has to be sure to give appropriate medication in the right doses for each*". **Participant 10, Male (28 years), Interview.**

"*During our times, we would not rush to engage in sexual activities, our parents would instil fear in us we would be told that engaging in sexual activities was wrong we would get burnt, so we wouldn't even dare until one is around 20 years old thereabout. Nowadays, we treat even the ten-year-olds, meaning by the time they get married; they would be having on average two to three kids. Nowadays, kids do not have that respect for society or themselves*". **Participant 13, Male (92 years), Interview.**

*"They normally come when they are having period pains (**Isilumo**); however, I'm not sure what causes it though we have a remedy for those conditions. We also treat ailments relating to the uterus or cervix in women, including these adolescents".* **Participant 50, Female (63 years), Interview.**

### 3.2.2 Integrating IHS and MHS

Two subordinate themes emerged under this superordinate theme, and these are described in detail below:

#### 3.2.2.1 Improvement of management of ASH issues

Participants cited a need to integrate the two systems as they felt it could improve the management of ASH issues though there were differing views. Participants felt IHS and MHS currently pull in different directions in the management of ASH issues, thereby making it difficult to attain the desired ASH outcomes. Participants also cited that safer methods could be adopted due to this integration as most utilised methods, particularly in traditional circumcision, can predispose adolescents to infections. Participants in the IHS also cited that they provide services to those who need them at a charge, though, those that do not have money are also attended to.

***Participants said:***

*"I think this integration could do more good than harm. Remember, in most cases, traditional circumcision methods are not standardised, we have witnessed many adolescents suffering from infections due to sharing of sharps, etc. The procedures are done, yes but are they safe? Through integration, we would work together to ensure that such procedures are done safely and in a safe environment".* **Participant 135, Male (42 years), FGD.**

*"The biggest problem is that the MHS looks down upon our traditions and feel that our ways of doing things are uncivilised. What you should be aware of is that we have been practising our traditions since time immemorial, and we were able to be in control of our kids and even let them marry at an age that is appropriate and marrying into families that have solid reputations that share the same values as us. Nowadays, even our adolescents die at an early age because they are taught about sex very early in the MHS and the schools, thereby corrupting them. We have no problems collaborating with though as long as they would not undermine our traditions".* **Participant 1, Male (101 years), Interview.**

*"Majority of times when they are alright they think of us traditional healers as witches, we only get to see them when something is wrong with their sexual being".* **Participant 7, Male (56 years), Interview.**

*"As an educated person, you, the researcher, would want to consult me instead of going to the health facility? Don't you see me as a witch?".* **Participant 40, Male (74 years), Interview.**

### 3.2.2.2 Existing gaps

Participants cited that there are now many gaps that lead to adolescents engaging in sexual activities at an early age due to loopholes in the different systems where adolescents are taught different things. Participants had mixed feelings on this aspect, some calling for collaborative efforts between different health systems so that there is the alignment of programs to make them useful while others arguing that the government should relax the regulations to allow the IHS parents and guardians to all have a level of control over their adolescents including permission to discipline them. Participants cited that there is a need to integrate IHS and MHS. This could potentially reduce clashes that are currently existing as there would now be having a common goal after integration and a clear roadmap on how to achieve these goals in as far as management of ASH issues is concerned.

***Participants said:***

*"They need that there be teamwork between us the parents, our traditional healers, and leaders as well as the clinics and schools because I feel like what our children are now being taught at school is inappropriate. I have an 11-year-old they now taught about sex because they learnt it at school. Is it not too early to teach them about sex at that age? What would be next is they would want to try it out. If we tell them it is taboo, we cannot talk about it; they will ask you what is taboo and what would happen if I go ahead and do it? When we grew up, we would not challenge our parents or elders what they would say goes".* **Participant 55, Male (72 years), Interview.**

*I usually refer to some of my patients to the hospital, particularly those I would realise are likely to be HIV positive. I do not want to cheat them and lie to them that they are bewitched if I see that there is a possibility they have HIV and AIDS. Therefore I already have a good working relationship with nearby health facilities as I also go to health facilities sometimes. There are*

*certain conditions that you would see that one needs a health facility, mainly if one is wasted and needs blood or fluids".* **Participant 58, Female (72 years), Interview.**

*"If we are to integrate these two systems as the Indigenous healers would become extinct as we are not properly recognised and are looked down upon by different stakeholders, including our government. I found herbs that could alleviate CORONA's symptoms, but when I talked about it, I was a laughing stock. How do you collaborate with people who undermine your efforts, yet we are the first port of call when they are sick? Would we be able to work together? If so, then that would be for the benefit of the adolescents, surely?"* **Participant 5, Male (83 years), Interview.**

*"What you should note is that we usually provide services at a charge, but we do not turn back those that do have the money. We sometimes take payment in kind, for example, livestock. However, we are a community, and sometimes, even if the resources do not permit, services and payment done later on when the situation improves. This is different from how health facilities operate; consultation fees are required upfront. No payment, no service. This integration, therefore, provides a window of opportunity for us to address these challenges for the benefit of our adolescent collaboratively".* **Participant 42, Male (67 years), Interview.**

*"This integration could address a lot of issues as all stakeholders are bound to pull in one direction. As it currently stands, we rarely collaborate with the MHS as the IHS".* **Participant 50, Female (63 years), Interview.**

### 3.2.3 Foreseen challenges

Two subordinates themes arose from the findings under the superordinate theme: foreseen challenges integrating IHS and MHS. These subordinate themes are discussed in-depth below:

#### 3.2.3.1 Mistrust and Pride

Different beliefs and values were reported as some of the foreseen challenges that could derail the integration. Some participants cited that the IHS and MHS are premised on parallel values where there is no trust between the two systems' actors. The participants cited that though they acknowledge these systems' existence, integrating the two systems could be hindered by the superiority complex where actors of each system look down upon each other.

***Participants said:***

*"It is sad that some healthcare providers only come to seek our services as traditional healers at night. They come in the cover of darkness. They do not want to be seen in broad daylight seeking our services. How then can we work together when there is that element of shame?"* **Participant 5, Male (83 years), Interview.**

*"As an individual who runs his surgery and is trusted by many locals, why do I have to be seen begging to work with nurses and doctors who are usually in denial that our methods work? They look down upon us, yet their tablets are made from the same components of plant roots and leaves that we use to treat our clients? We are regarded as uneducated and uncivilised".* **Participant 1, Male (101 years), Interview.**

*"I do not see myself leaving my established surgery to go and be humiliated through working with Modern Health Service Providers. They do not believe in our ways".* **Participant 52, Female (82 years), Interview.**

*"I would prefer my adolescents to use modern health facilities as there are treated with medicines that have a specific dosage. Our Indigenous Health Systems do not have a specific dose when it comes to their medicines. Take, for example, when one is treated for STIs, you are told to go and drink a concoction; sometimes, you can down three cups of that concoction in a single go. How do you know whether the dose is sufficient or you have overdosed? Would that not lead to some side effects or inadequacy of treatment leading to resistance? This is the biggest challenge with our traditional ways because the treatment is not standardised".* **Participant 104, Female (35 years), FGD.**

### 3.2.3.2 Logistics

Participants cited another challenge that could potentially hinder the collaborative efforts between IHS and MHS as logistically related. Participants had mixed feelings on this issue, with some sense the integration is simple and straightforward without any logistical glitches. In contrast, others felt they could be potential challenges in ensuring the integration is smooth and the transition process accommodative and straightforward.

***Participants said:***

*"Integrating these two systems would ensure that there is effectiveness in how we manage the health of our adolescents in as far as sexual issues are concerned. We will ensure that we have a common way of assisting them, and we complement each other. In the current scenario, if one seeks treatment from IHS and something goes wrong, or you are not completely healed, we do not disclose such information when we seek treatment from the MHS. I, therefore, do not see any problems in integrating these two systems".* **Participant 150, Male (55 years), FGD.**

*I foresee a challenge where both these two systems would fail to relate as they are premised on different ideologies and belief systems. How then do they work together? What measures would be put in place for the checks and balances? Who reports to who and who supervises who? These issues might be standardised if this is to be successful".* **Participant 112, Male (42 years), FGD.**

### 3.2.4 Overcoming challenges

Five subordinate themes arose under this superordinate theme. Respondents felt that there were several ways in which the foreseen challenges stated above could be overcome. These are discussed in-depth below:

#### 3.2.4.1 Collaborations through establishing committees

Participants felt that one way to overcome the foreseen challenges that were discussed above would be to establish committees that would include stakeholders from the IHS, parents/ guardians, representatives from churches, teachers as well as different stakeholders such as those Non-Governmental Organisations (NGOs) that deal with ASH programs, the local Police as well as collaborating with research institutions such as universities that have Departments that deal with Sexual Health (SH) related issues. Participants felt having such committees that meet at times that are agreed (for example, monthly, quarterly, or bi-yearly) could help tailor and assess issues that affect adolescents and brainstorm on appropriate measures to deal with them.

***Participants said:***

*"Having such committees helps share information and build trust through designing and implementing programs that would be supported by all stakeholders."* **Participant 112, Male (42 years), FGD.**

*"We used to have committees in our districts spearheaded by the NGOs that were implementing adolescent-friendly programs that addressed even their sexual issues. However, these committees are usually temporary as they die a natural death after the NGOs pull out of the programs or exhaust funding, or decommission the program. These committees did not have representatives from all the stakeholders; thus, it was usually difficult to comprehensively dealt with ASH related challenges or programs as sometimes we would be ignored as people who run the IHS. Reviving these committees and ensuring there are fully functional, inclusive, and sustainable would be key to prevent the collapse of these ASH programs".* **Participant 98, Female (38 years), FGD.**

### 3.2.4.2 Aligning programs and respecting stakeholders

Another subordinate theme that arose suggested a need for teamwork based on aligning programs such that there is a common objective. Participants in the IHS felt that there are not accorded enough respect in decision making regarding health issues by MHS as they are usually seen as uneducated and uncivilised. Yet, they are the ones that stay in the communities where these adolescents are brought up.

***Participants said:***

*"The biggest problem is that we have different belief systems, and several programs implemented by the IHS are different from those implemented by the MHS. However, we have the same goal at heart; that is trying to ensure we get the best for our adolescents".* **Participant 58, Female (72 years), Interview.**

*"One of the key issues that need to be addressed in these communities is the culture of us as the IHS being undermined by the MHS as they claim we are not educated. This integration could bring the hope of working together to achieve a common goal as we are all serving the same populace".* **Participant 3, Male (87 years), Interview.**

### 3.2.4.3 Referrals

Participants cited certain conditions about ASH that they are unable to treat or manage at IHS level. They mentioned that fostering this integration and overcoming challenges is through having a proper referral system. Participants further elaborated that there is no need sometimes to claim you can treat anything as a Traditional healer or herbalist. Participants also cited a need to revisit the idea that was once implemented by the government where Indigenous Healers were given consultation rooms to work in, in their nearest health facilities. It was

elaborated that this strategy was just piloted in a few districts and was never followed up. Some respondents, therefore, felt revisiting this strategy and contextualising it could foster this integration.

***Participant said:***

*"I, for one, admit that there are certain conditions that I am not able to manage as a Traditional Healer. Some people would come to your surgery, claiming that their adolescent has been bewitched or something. After careful assessment through consultations with the ancestors, if I see that the illness's cause is HIV related, I immediately advise and refer the patient to the local health facility. I immediately call my niece, who is a nurse there, to expect the patient. This has improved my working relationship with the local health facility".* **Participant 50, Female (63 years), Interview.**

**3.2.4.4 Establishing Consultation rooms for indigenous practitioners in health facilities**

Participants cited a need to have a consultation room in the health facilities though there had mixed feelings with some against the idea. Some mentioned that it would be difficult to work away from their established facilities at home.

***Participants said:***

*"This provides a good platform for the integration as patients are easily referred and exchanged between the two health system and consultations done through teamwork as well."* **Participant 101, male (38 years), FGD.**

*I do not support the idea that we need to have a consultation room in health facilities. My ancestors determine and instruct me of where and how I am supposed to work in my line of work. I derive powers from them, and they instructed me to build a place to work here in my homestead according to their prescribed prescription. If I work from elsewhere, I will lose my powers since that place would be against my ancestors' expectations".* **Participant 1, Male (101 years), Interview.**

*"Do remember that there have been efforts in some communities at some point where Traditional Healers were once given consultation rooms in health facilities. It didn't come to our place, but my question is, why did that arrangement fail? We don't trust each other it is as simple as all that. Therefore, we need to develop that culture of working together, that idea was*

*noble and which could be reoriented and implemented".* **Participant 30, Male (48 years), Interview.**

*"Though this did not happen in our district, in some districts, IHS practitioners were given consultation rooms in health facilities though that was a trial phase and was never rolled out to the whole country".* **Participant 42, Male (67 years), Interview.**

#### 3.2.4.5 Development of Terms of Reference

Participants felt that for most of the challenges to be eliminated, there was a need to have drafted and elaborated Terms of Reference that would guide stakeholders on the role there will play in this integration and how they are expected to conduct themselves.

***Participant said:***

*"There is a need to have clear guidelines that are drafted and agreed upon by all stakeholders to ensure that there are ethical conduct and accountability. We need to know the boundaries of the integration and what we are expected to do and how we would be disciplined if there are acts of misconduct".* **Participant 135, Male (42 years), FGD.**

## 4.0 Discussion

Findings of the study suggest that different stakeholders played varied roles in the management of ASH issues. It was evident that various community members do play different roles in grooming, supporting, teaching, disciplining, and providing treatment services to adolescents. It should be noted that the majority of rural communities rely on the IHS for most of their health needs; therefore, they play a significant role in ensuring that the general populace has access to health facilities [10]. The way these communities are arranged fosters Ubuntu (humanity), wherein most cases parenting and the offering of services are not driven by the availability of resources but rather treat each other with dignity and assist each other [33]. IHS offers diversity, flexibility, accessibility, and has been used in several developing countries well before colonialism. It has continued to be accepted even in developed countries because of its affordability, low levels of technological input, and relatively low side effects [34].

Findings of the study also point out that there is a window of opportunity to bridge current existing gaps between IHS and MHS, consider clashes in the two systems belief and values, which in turn could see an improvement in ASH outcomes. Different authors have reported in the literature that fragmented programs or separate HSs usually fail to attain desired results as

there is a duplication of duties, contradicting values, and wastage of resources [35]. These fragmented HSs usually lack continuity and collaborative efforts, which creates many challenges in the management of health-related issues that need consistency in implementation [36].

Envisaged challenges that could potentially derail the integration of IHS and MHS were reported to be mistrust, pride, and logistics. It was noted that different values and beliefs drove different IHS stakeholders and those in the MHS with the IHS stakeholders feeling looked down upon. It is reported in the literature that those that have enough resources prefer western medicine at the expense of indigenous or traditional medicine [37,38]. In as much as there is that preference for modern medicine, the IHS has served a significant proportion of the population, and the popularity of traditional medicine is gaining popularity even in developed countries [34]. Therefore the trust in the IHSs is improving as different uses of the system realise that most of the products do not have side effects though the majority of times, the issue of dosages has not been properly addressed [39,40].

Findings of this study suggested several possible ways that could be used to overcome the challenges that have the potential to derail the integration. Collaborations, establishing committees, aligning programs, respecting and mutual understanding, and drafting Terms of Reference were cited as critical in aiding this integration. The proposed strategies are consistent with the ten principles presented by Suter et al. (2009) that also class for consideration of some of the issues presented by the respondents in this study [41].

## 5.0 Conclusions

There is a window of opportunity to pursue the suggested ways of integrating IHS and MHS for improved ASH outcomes. However, the tasks would need careful consideration of factors that could hinder this activity. IHS has been receiving growing attention by being accessible to the general populace, including adolescents. Therefore, this system plays a significant role in the upbringing of adolescents and the management of ASH related issues. There is, therefore need to refine the suggested strategies further and brainstorm further on how these could be used to integrate IHS and MHS for the benefit of adolescents.

## 6.0 Declarations

### 6.1 Ethical Approval and consent to participate

Ethical clearance was sought from the University of Venda's Ethics Clearance Committee (Ethics Number: SHS/19/PH/17/2608) and the Medical Research Council of Zimbabwe (Ethics Clearance number: MRCZ/A/2611). Permission to conduct the study was also sought from the Ministry of Health and Child Care. Permission to conduct the study in the specific districts was sought from traditional leaders (Traditional chiefs and headmen). Written consent was sought to from all participants.

### 6.2 Consent for publication

Not Applicable

### 6.3 Availability of data and material

Not Applicable

### 6.4 Competing Interests

The authors declare that they have no competing interests.

### 6.5 Funding

The research would be funded by the National University of Science and Technology under the Staff Development Programme. The funder pays for tuition fees related to these PhD studies. The funder provided resources to cover data collection, analysis and remuneration of two data collectors who will assist the principal investigator WNN. Researchers wrote and submitted six-monthly reports to appraise the funder of progress. The funder's role was to provide resources to carry out this study successfully.

### 6.6 Authors' Contributions

WNN is a PhD in Public Health student at the University of Venda. The author conceptualised the protocol as partial fulfilment of the requirements of the PhD requirements. LM is the Promoter of these PhD studies, while JTM and RTL are Core Promoters. The three contributed by guiding the PhD student in the conceptualisation, carrying out research and preparing the paper. All authors read and approved the final paper.

### 6.7 Acknowledgements

We acknowledge all the participants who gave their valuable time and information to aid this research's successful completion.

### 6.8 Authors' Information

WNN is a PhD in Public Health student at the University of Venda in South Africa and is also a Lecturer in the Department of Environmental Science at National University of Science and Technology in Bulawayo in Zimbabwe. LM is an Associate Professor and JTM is a senior lecturer in the Department of Public Health under the School of Health Sciences at the University of Venda in Thohoyandou in South Africa. RTL is a Research Professor at the School of Health Sciences at the University of Venda in Thohoyandou in South Africa.

### 6.9 Abbreviations

| | |
|---|---|
| AIDS | Acquired Immunodeficiency Syndrome |
| ASH | Adolescent Sexual Health |
| FGDs | Focus Group Discussions |
| HIV | Human Immunodeficiency Virus |
| HSB | Health Services Board |
| HSs | Health Systems |
| IHS | Indigenous Health System |
| MHS | Modern Health Systems |
| NGOs | Non-Governmental Organisations |
| SH | Sexual Health |
| STIs | Sexually Transmitted Infections |
| ZINATHA | Zimbabwe National Traditional Healers Association |

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# Health Service Providers' Perspectives on the influence of Modern Health Systems on adolescents' sexual health practices in Umguza and Mberengwa districts of Zimbabwe

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See **Appendix 18** for Author Guidelines.

**0.0 Abstract**

***Background:*** Health Service Providers play a significant role in crafting and implementing health policies and programs that manage adolescent sexual health-related issues at different health system levels. These impacts on adolescent sexual behaviours and practices.

***Aim:*** This study explored the roles of Health Service Providers in the management of adolescent sexual issues and how this impacts their sexual behaviours and practices. The study further probed the Health Service Providers on ways in which the Indigenous Health System could be integrated into the Modern Health System for effective management of Adolescent Sexual Health related issues.

***Methods:*** A qualitative cross-sectional survey was conducted on purposively selected Health Service Providers in health facilities in Mberengwa and Umguza districts. Data was collected using unstructured interviews that were recorded, transcribed verbatim, and thematically analysed. Findings were presented as clearly defined as superordinate and subordinate themes.

***Results:*** A total of five superordinate themes and nineteen subordinates themes emerged from the interrogated data. The superordinate themes were: Overview of adolescent sexual health issues, Role of Modern Health System in Adolescent Sexual Health issues, Challenges encountered, Indigenous Health System factors that could be factored into Modern Health Systems, and Strategies to foster the integration of Indigenous Health System and Modern Health System. The subordinate themes explored in-depth the findings of the key stakeholders under the five superordinate themes.

***Conclusions:*** From the findings, it can be concluded that Health Service Providers play an essential role in shaping and providing Adolescent Sexual Health services that are utilised by adolescents despite challenges that have reduced demand for these services. There is, therefore, a need to point out that there is a window of opportunity to foster collaborations between of Indigenous Health System and the Modern Health System as they strive to serve the adolescents to the best of their ability though in different contextual settings.

**Keywords:** Adolescents; Health Service Providers; Modern Health Systems; Sexual Health; Zimbabwe

## 0.1 Contributions of the paper

### What is already known

- ✓ Health Service Providers play a significant role in crafting and implementing health policies and programs that manage Adolescent sexual Health-related matters
- ✓ Different strategies have been implemented in different country settings to improve adolescents sexual health-related outcomes
- ✓ The role played by Health Service providers is not adequately documented to aid decision making in policy formulation and implementation

### What this paper Adds

- ✓ This work explores and documents the roles that are played by Modern Health Systems through the specified Health service provider in the management of Adolescent Sexual Health issues
- ✓ The study also examines the potential for integrating Modern health Systems with Indigenous Health Systems for improved management of adolescent sexual health matters
- ✓ The study further presents ways of overcoming challenges that could derail the possible integration of the two mentioned health systems in the management of Adolescent Sexual Health-related matters

## 1.0 Background

Worldwide Health Service Providers (HSPs) play a significant role in crafting and implementing health policies and programs that manage health-related issues at different levels in the health system (HS), including Adolescent sexual Health (ASH). These trained HSPs strive to utilise evidence-based strategies that seek to aid efficiency and effectiveness in the management of ASH issues (Ciapponi et al., 2017). Despite several programs that have been implemented globally, adolescents still exhibit poor sexual health outcomes, particularly in Low and Middle-Income countries (LMICs) (Santhya and Jejeebhoy, 2015). The efficiency of sexual health (SH) programs is hugely negatively impacted by massive HSP exodus from developing to developed countries where they are better conditions of service, inadequate infrastructure to accommodate adolescents as a sensitive population, lack of training of HSPs to efficiently and effectively manage ASH programs, shortage of drugs and medicines for ASH related illnesses, lack of awareness campaigns targeted at behaviour changes in adolescents and promotion of safe sexual practices in as far as adolescents are concerned (Connell, 2010).

In Zimbabwe HSPs also play a significant role in equipping adolescents with knowledge on SH; treatment of sexually transmitted infections (STIs) and provision of different contraceptive methods (MOHCC, 2016b, MOHCC, 2016a). These services are usually available free of charge, particularly in rural areas, as they are often subsidised by the government (MOHCC, 2016b, MOHCC, 2016a). Despite these services' availability, uptake of these programs remains very low, particularly in highly cultural districts where the majority of the people prefer to utilise the Indigenous Health System (IHS) (Mugweni et al., 2015, Shumba and Lubombo, 2017). The distribution of health facilities also impacts accessibility and subsequent utilisation of the Modern Health System (MHS) (Mudyarabikwa and Mbengwa, 2006, Kumaranayake et al., 2000). The HSPs insights relating to utilisation of health services by adolescents' in these cultural districts in light of the existence of IHS is very critical in ensuring a well-coordinated and integrated health system (HS) to serve the adolescents. Therefore, it is imperative to note that HSPs play an essential role in shaping and influencing sexual behaviours and practices in adolescents that impact their SH outcomes (Peters et al., 2008, Peters et al., 2004).

Therefore, this work sought to explore the roles that are played by the MHS in the management of ASH issues and appreciate the ASH trends in the two districts. This study further challenges HSPs to identify specific IHS factors incorporated into the MHS to improve ASH outcomes. Participants were also further probed on the challenges that were likely to be encountered in

integrating IHS into MHS and how best these could be overcome to maximise the benefits of this integration.

## 2.0 Methods

### 2.1 Study Setting

This study was conducted in the Umguza and Mberengwa districts of Zimbabwe. Mberengwa district has a total of thirty-six (36) health facilities, of which thirty-one of those are Primary Health Care (PHC) facilities, and five are referral district hospitals (Ciapponi et al., 2017, Herrera et al., 2017). Umguza has a total of 26 health facilities, of which twenty-five are PHC facilities, and only one is a referral hospital (See **Fig 1**). A PHC facility is the first point of call in an MHS that offers essential curative and preventive care services that exclude complicated and specialised services (le Roux et al., 2015, Mohapi and Basu, 2012, World Health Organization, 1978, Chimbindi et al., 2013). The services offered in these PHC facilities are Integrated Management of Childhood Illnesses (IMCI), Sexually Transmitted Infections (STIs)/HIV and AIDS, tuberculosis (TB), reproductive health (ante-natal care, family planning, and maternity), mental health, chronic diseases (hypertension, diabetes, and asthma), trauma and injuries and disabilities (Dookie and Singh, 2012, Health and Welfare Sector Education and Training Authority, 2011, Mohapi and Basu, 2012, Pascoe, 1983). Any complications that may be presented by patients in these facilities are referred to as the referral district hospitals where specialised care could be offered, failure of which the cases are further directed to central hospitals that are outside these two districts (Umguza and Mberengwa). The total populations in these two districts were 200 581 and 80 971 for Mberengwa and Umguza, respectively (ZNSA, 2012). On average, each PHC facility was serving a population of 6470 and 3238 in Mberengwa and Umguza, respectively. These PHC clinics are mannered by trained nurses, and nurse aides (curative), and Environmental Health Practitioners (EHPs) (health promotion and preventive services) while doctors are found in referral centres that offer a more advanced package with specialised care (Hongoro et al., 1998).

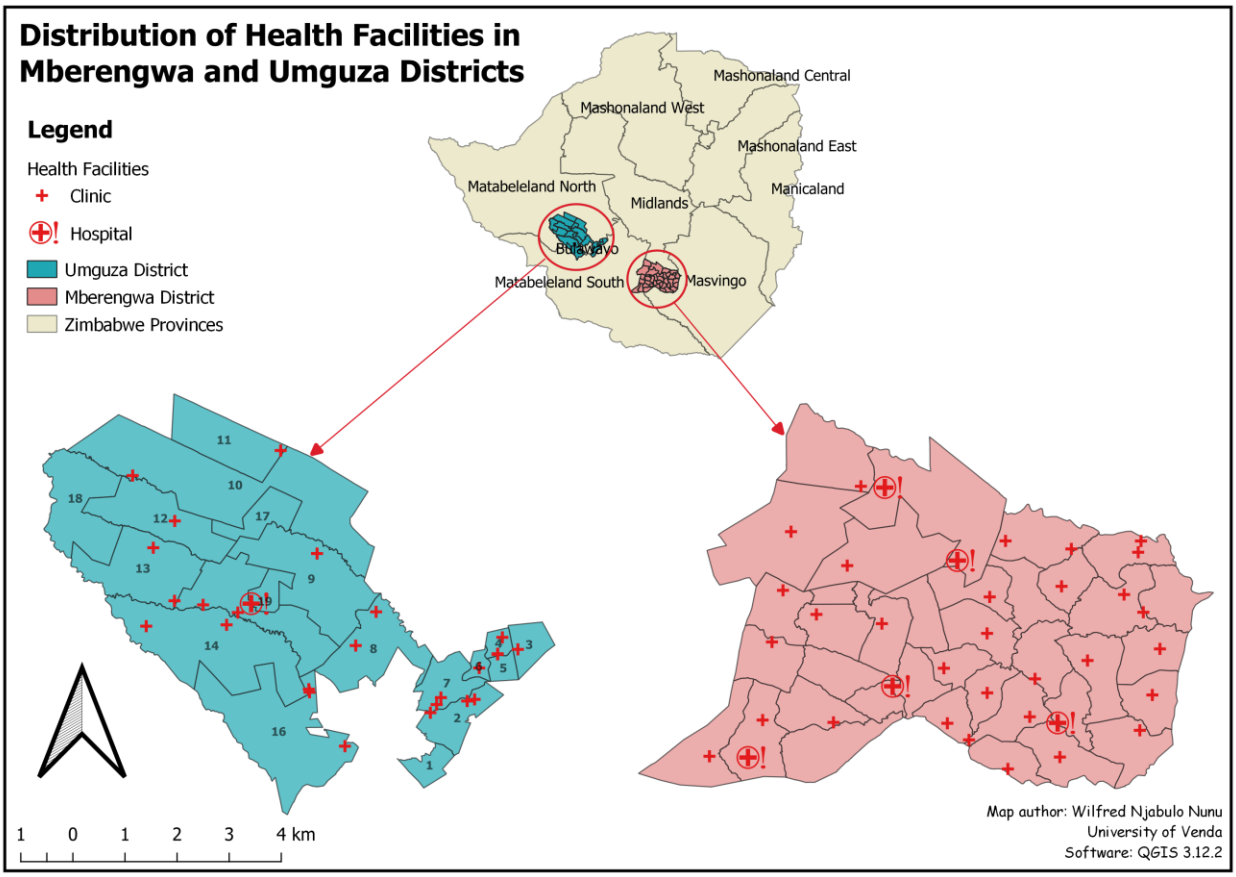


**Fig 1:** Study Area map showing the distribution of health facilities in Umguza and Mberengwa Districts

### 2.2 Study Design

A qualitative cross-sectional survey was conducted on HSPs in Mberengwa and Umguza districts. A qualitative approach/design was chosen as it enabled the researcher to gain more insights into how the MHS operates on issues relating to ASH and understand the interaction between HSPs and the stakeholders running the IHS (Anderson, 2010). This qualitative research design also enabled flexibility in probing more on issues that were not clear regarding the management of ASH related matters by the participants, thereby allowing for a more thorough and comprehensive approach in the exploration of the critical problems regarding HSPs and ASH (Baxter and Jack, 2008, Almalki, 2016).

### 2.3 Study Population and Sampling

All the 36 health facilities in Mberengwa and 26 in Umguza were targeted. From each clinic, a Nurse and an EHP involved in ASH related issues at curative, promotive, and preventive levels were targeted for recruitment into the study. From each referral centre, a Nurse, an EHP, and a

Doctor that were involved in ASH related issues were also targeted. The sampling technique was, therefore, purposive, and the sample size was determined by data saturation.

### 2.4 Data Collection Tools

Data was collected using interviews that were recorded using a digital tape recorder. An interview guide was developed and guided the data collection process to meet the objectives. The interview guide is appended as **Appendix 11** of this dissertation. Interviews were conducted either in English, Ndebele, or Shona, depending on which language the interviewee was comfortable with. The interviews took, on average, between 15 minutes to an hour. The interviews were conducted in private rooms in these health facilities. Prior appointments were made to minimise disturbances/interference with health facility operations. Therefore most interviews were usually conducted in the afternoons, which were less busy than the mornings.

### 2.5 Data Management and Analysis

Collected data (recordings) were transcribed verbatim in Microsoft Word, and, if in Ndebele or Shona, further translated to English. The English transcripts were then converted to PDF format and Imported to MAXQDA Version 14 for coding and thematic analyses. An independent coder was also engaged for expert guidance and validation of codes and themes that were generated. The findings of the study were then thematically (superordinate and subordinate themes) presented.

## 3.0 Results

### 3.1 Characteristics of Participants

A total of forty-one Heath Service Provides (HSPs) were recruited in this study. A total of twenty-nine nurses/nurse aides, eight Environmental Health Practitioners, and four doctors dealing with Adolescent Sexual health-related issues participated in this study. More females participated as compared to males (30:11 respectively). The characteristics of the participants are presented in **Table 1** below.

**Table 1:** Characteristics of Participants

| **Participant type** | **Mberengwa** Male (Female) | **Umguza** Male (Female) | **Totals** Male (Female) |
|---|---|---|---|
| **Interviewed** | | | |
| Nurses / Nurse Aides | 2 (12) | 1 (14) | **3 (26)** |
| Environmental Health Practitioners | 3 (2) | 1 (2) | **4 (4)** |
| Doctors | 3 (0) | 1 (0) | **4 (0)** |
| **Totals** | **8 (14)** | **3 (16)** | **11 (30)** |
| **Grand Total** | **41** | | |

### 3.2 Emerging themes

There were a total of five superordinate themes that emerged from interrogating the data obtained from the participants. A total of nineteen subordinate themes were then obtained from the five superordinate themes, and the summary of findings is presented in **Table 2:**

**Table 2:** Emerging themes

| Superordinate theme | Subordinate Themes |
|---|---|
| Overview of adolescent sexual health issues | ✓ Prevalence of STIs<br>✓ Prevalence of Pregnancies<br>✓ Sexual Health-related Complications<br>✓ Poverty |
| Role of MHS in ASH issues | ✓ Education and awareness campaigns<br>✓ Provision of contraceptive products<br>✓ Treatment of STIs<br>✓ Performing and supervising births<br>✓ Performing Medical male Circumcision |
| Challenges encountered | ✓ Shortage of resources<br>✓ Poor health-seeking behaviour<br>✓ Inadequacy in the training of staff to handle adolescents<br>✓ Non-availability of adolescent-friendly and private facilities<br>✓ Promiscuous behaviours by adolescents<br>✓ The hostility of HSPs towards adolescents |
| IHS factors that could be factored into MHSs | ✓ Circumcision<br>✓ Humanity (Ubuntu) |
| Strategies to foster the integration of IHS and MHS | ✓ Engagement between stakeholders<br>✓ Community cultural gatherings |

### 3.2.1 Overview of adolescent sexual health (ASH) issues

One of the superordinate themes that arose from the findings was the general overview of ASH trends in the two districts. Under this superordinate theme, four subordinate themes emerged and are discussed in-depth in the section that follows:

#### 3.2.1.1 Prevalence of STIs

The prevalence of STIs in the districts was reported to be going up. Participants felt that adolescents in these two districts generally had feeble health-seeking behaviours. Participants

further cited that adolescents now engage in sexual activities early and with older people risking suffering from STIs. It was also reported that most females are more at risk from STIs than male adolescents as they are usually targeted by an older man who would have been through a lot in terms of sexual engagement.

***Participants said:***

*"We have observed a steep rise in the STI prevalence, particularly in female adolescents. The biggest challenge is that these adolescents have poor health-seeking behaviours as they seldom come to these facilities; only when they are now severely ill would they turn up for treatment".* **Participant 10, Female (48 years).**

*"Very young adolescents are now presenting at the health facility suffering from STIs. The biggest challenge is that adolescents now engage in sexual activities at an early age. They date individuals who are way older than them, particularly the girls. These cross-generational sexual activities have been the major contributing factor to the high prevalence of STIs that we are observing".* **Participant 11, Female (42 years).**

*"These adolescents that we treat here when they go back to the community and feel better, they throw away the medication we would have given them even though they have not completely healed and they continue spreading it resulting in this high prevalence of STIs".* **Participant 1, Female (52 years).**

**3.2.1.2 Prevalence of Pregnancies**

One of the subordinate themes that came up under this superordinate theme was that there are very high teenage pregnancies as several adolescents are forced to drop out of school. The HSPs felt that most pregnancies happen during the Christmas holidays when the cross-border workers, popularly known as *injiva* will be back for the festive holidays. Participants further cited that these *injiva* would be having a disposable income that there can use to lure and coerce the adolescents, particularly the females, into having sexual relations with them over those holidays. However, participants further pointed out that there are many illegal gold miners (popularly known as *amakorokoza* in the local communities) and entice these adolescents into having some sexual relations with them.

***One Participant Said:***

*"We have failed as HSPs to curb adolescent pregnancies as they go berserk during the festive holidays when they are coerced by the injivas who would have saved up to come to enjoy holidays back at home. Bearing in mind that the rural setup is different from townships, adolescents have their huts which would be sometimes far from the parents' huts meaning they could sneak out easily and go and have sexual intercourse without anyone noticing".* **Participant 28, Male (35 years).**

**3.2.1.3 Sexual Health-related complications**

Participants felt that due to adolescents' poor health-seeking behaviours and the issue of seeking treatment late, they have some complications regarding STIs that had been left untreated for a very long time and had to refer the adolescents to Central Hospitals outside the districts for specialised care. Adolescents have also had complications during delivery as some of their pregnancies would have been discovered very late by their parents.

***Participants said:***

*"One of the adolescents went for circumcision, he came after he was culturally circumcised, and he was not healing. When we attended to him, he disclosed that he had had an STI for months, and was discharging a lot of pus. After we enquired why he did not present to the health facilities earlier, he said he was afraid his parents would discover as they are not allowed to sleep with women before they were circumcised. The condition worsened after circumcision, and he had to be brought to the facility. We referred the case to Mpilo Central Hospital".* **Participant 10, Female (48 years).**

"*Let me give you an experienced that shocked me. There was this adolescent girl who came with her parents complaining of stomach cramps. The parents did not know the adolescent was pregnant, only to be told when they brought her that she was in labour. The unfortunate part was that the baby was a breach, so we had to refer them to a central hospital. It was unfortunate that both the adolescent and the baby did not make it*". **Participant 11, Female (42 years).**

**3.2.1.4 Poverty**

The majority of adolescents are forced into sex by poverty as they try to make ends meet. Participants, particularly from the Nyamandlovu area in Umguza, cited that most homesteads are mannered by adolescents as their parents and guardians migrate to South Africa and

Botswana in search of opportunities to be able to fend for their families. However, the majority do not make much, and sometimes they cannot fully support their adolescents, leading to them engaging in sexual intercourse with older people to get basics from those people though predisposing themselves to STIs and pregnancies.

***Participants Said:***

*"Due to financial challenges here in the rural areas, most breadwinners head to South Africa or Botswana in search of jobs to fend for their families, leaving their adolescents behind. If you realise because of this lockdown caused by COVID 19, most are not sending any monies home. How do you think these adolescents survive? Some end up dating older men and women to get favours".* **Participant 25, Female (22 years).**

*"Adolescents struggle if they are left alone by their caregivers as they do not have a proper family structure to support them. Therefore, if they are now household heads, homestead now becomes a venue for other adolescents who live with parents to engage in sexual activities. Most parents are driven to migrate to other towns and even other countries searching for opportunities to make a living and fend for their adolescents".* **Participant 4, Female (58 years).**

### 3.2.2 Role of MHS in ASH issues

Four subordinate themes emerged under the superordinate theme "Role of MHS in ASH issues." These are described in depth in the sections that follow.

#### 3.2.2.1 Education and awareness campaigns

The key participants were involved in educating the general populace, including adolescents, on SH related issues to foster safer sexual practices in the communities. Participants further cited that they even get invited to schools, churches, and community gatherings to disseminate SH's information to improve the SH outcomes. Participants also noted that in partnership with different NGOs dealing with SH issues, they develop flyers, training material, and help ensure that the distribution processes are as effective as possible.

***Participants said:***

*"We are involved in education and awareness campaigns where we develop teaching material and ensure we go to schools, churches, and any community gatherings through invitation or voluntarily and disseminate information regarding adolescent sexual health-related issues."* **Participant 14, Male (43 years).**

*"We work with different stakeholders, including NGOs, as I have said that our duty is centred on health promotion through prevention. We develop flyers, education material, and deliver education and awareness sessions to promote safer sexual practices in adolescents. Therefore, it is our duty to ensure we reach out to the majority of adolescents and equip them with knowledge".* **Participant 26, Male (38 years).**

#### 3.2.2.2 Provision of contraceptive products

It emerged that several participants, particularly the Nurses, Nurse Aides, and Doctors, were involved in the distribution/insertion of contraceptive products. After adolescents have been educated about services available to them, they access these services with an informed mindset. It, therefore, emerged that several participants played a significant role in the provision of these services.

***One Participant said:***

*"We provide contraceptives to women, including these adolescents, as well as male condoms for male adolescents as well. We usually advertise our services during the awareness campaigns so that those adolescents who decide to engage in sexual activities do so in a manner that reduces the chances of being infected as well as reduce the chances of them having unwanted pregnancies, which lead to unplanned responsibilities and resulting in high rates of school dropouts".* **Participant 20, Female (27 years).**

#### 3.2.2.3 Treatment of STIs

One subtheme that emerged under the role of these critical stakeholders was that they were involved in the treatment of STIs and providing support to those that are infected with HIV and AIDS through different programs and provision of Anti-Retroviral Therapy (ART). Participants cited that adolescents usually come to the clinics to seek treatment although the majority of the times they come when the infections are at advanced stages due to some barriers. Participants also cited that they also encourage those that they treat to bring their partners to reduce reinfection.

***Participants said:***

*"We have been involved in the treatment of STIs over and above other roles, such as the provision of contraceptives. However, we face challenges that these adolescents come when infections are already at an advanced stage".* **Participant 10, Female (48 years).**

*"We treat STIs and provide support services for those that are living with HIV and AIDS and also do contact tracing and encourage adolescents to bring their partners for treatment as well to minimise chances of reinfection".* **Participant 18, Female (47 years).**

### 3.2.2.4 Performing and supervising births

It emerged that a significant proportion of adolescents come to the facilities to deliver. However, the majority are referred to Central hospitals as they are deemed at high risk. Participants cited that most of the adolescents come to the facilities already at advanced stages of labour. Participants, therefore, noted that though it is encouraged that these adolescents deliver in central health facilities with adequate infrastructure and human resources to deal with potential complications, the majority deliver in their clinics sometimes due to other factors such as transport challenges.

***Participants said:***

*"We supervise several adolescents giving birth though normally they are expected to be attended to in Central hospitals with the capacity to deal with complications. However, the majority of times, these adolescents come at an advanced stage of labour with some even delivering on their way to the clinics".* **Participant 34, Female (42 years).**

*"We are generally not expected to supervise births by adolescents as they are expected to be attended to in the higher hierarchy of our health facilities. Considering that we are in deep rural areas, there are many challenges that we face that hinder us from referring these adolescents to either district hospitals or central hospitals outside our districts, one of such being transport".* **Participant 40, Male (36 years).**

### 3.2.2.5 Performing Medical male Circumcision

It also emerged that HSPs are involved in circumcising adolescents at clinics with some facilities partnering with NGOs to ensure that this service is available to fight against the spread of HIV and AIDS.

***One Participant said:***

*"We are partnering with some NGOs to provide circumcision though our numbers are deficient. We are five months into the program, and we are failing to reach the intended targets as most of the adolescents prefer to go and get circumcised culturally".* **Participant 3, Male (33 years).**

### 3.2.3 Challenges encountered

A total of six subordinate themes arose to denote challenges that are faced by the MHS and its HSPs in managing ASH related issues. These are discussed in-depth below:

#### 3.2.3.1 Shortage of resources

Participants cited that different stakeholders are usually invited to participate in health awareness campaigns, particularly by the schools. However, HSPs mentioned that they are very short-staffed in clinics and very much overwhelmed and fail to respond positively to these invitations, which present an opportunity to engage with adolescents in a comfortable environment.

***Participants said:***

*"We usually receive invitations from schools to go and engage with adolescents or participate in awareness campaigns. We seldom go as we are very short-staffed in these clinics; for example, in this clinic, we are only two (nurses), so you can imagine that if I leave my colleague alone, how much workload would she have?"* **Participant 3, Male (33 years).**

*"We would have hoped to do more than we are currently doing. However, we rarely have adequate resources to cover most of the adolescents' needs except when an NGO comes and implements a project; then, we become part of it. Usually, if that NGO pulls out after their funding is exhausted, we cannot sustain the programs".* **Participant 30, Female (45 years).**

*"I am expected to cover two wards that amount to about 40 square kilometres to conduct awareness campaigns and do contact tracing. My motorbike broke down two years ago, and it is in a state of disrepair as you can see there. I cannot consistently walk these 40 square kilometres; therefore, we normally do what is in our power".* **Participant 41 Male (43 years).**

#### 3.2.3.2 Poor health-seeking behaviour

One of the subordinate themes that came up under challenges was that most adolescents that belong to very cultural families have deplorable health-seeking behaviour. Participants cited that they usually delay seeking treatment until it is too late when they are rushed to health facilities.

***Participants said:***

*"We usually conduct health education on those that would have come to the clinics with the hope that they will share the information with their peers. The biggest challenge, however, is*

*that they usually come to the clinics when they are very ill; for example, when they are being circumcised there during their cultural initiation ceremonies in the bush, women are not allowed to go there, so we are not able to go there, the adolescent would be brought to the clinic when they see that the person is now dying".* **Participant 41 Male (43 years).**

*Majority of the cultures, particularly the Xhosa here, who are predominant in Ntabazinduna, rarely seek services from the clinics. They first go to the Traditional Healers and would only bring the adolescent after they would have failed of which majority of the times it would be late and a lot of damage has already been done".* **Participant 10, Female (48 years).**

*"Those that have their STIs treated by the Traditional Healers some do not heal completely, and they spread that STI or they suffer severe consequences later on".* **Participant 11, Female (42 years).**

**3.2.3.3 Inadequacy in the training of staff to handle adolescents**

Participants cited they felt there was a gap in terms of the knowledge and capacity to address issues regarding adolescents fully. Participants felt that gap had hindered their ability to successfully lure adolescents to health facilities to seek services or even information. They felt they lack the necessary skills to deal effectively with adolescents, which has lowered demand for their programs.

***Participants said:***

*"We rarely undergo training on how to deal with adolescents. They are a sensitive age group, and we need to understand how to handle them fully. We have read many developments in the field of sexual health and adolescents; it is quite challenging to keep up without being trained".* **Participant 6, Female (42 years).**

*In some institutions, they have dedicated Health personnel that deal with adolescent sexual health issues. However, here we are, a jack of all trades. It will have been great if some are trained to be able to cope with the adolescents' sexual health needs*". **Participant 10, Female (48 years).**

*"Adolescents are very delicate and need to be accommodated as they are at a stage where they are trying to discover who they are. We need to be trained on how we deal with them to foster behaviour change and adoption of safe practices".* **Participant 41, male (43 years).**

### 3.2.3.4 Non-availability of adolescent-friendly and private facilities

Participants cited that one of the significant challenges they encountered in the discharge of their duties was the lack of the youth-friendly infrastructure in the public facilities that accorded the youths enough privacy. Participants cited that adolescents value privacy as sometimes they would have come to seek services without their parents or guardians' knowledge. Participants, therefore, felt that there is a need for adoption of youth-friendly facilities, such as those offered in Harare where adolescents have dedicated private rooms at facilities and use back door entries that are barricaded from the general public maximum privacy and ensure they are comfortable.

***Participants said:***

*"We feel our facilities are too public and do not accord adolescents the privacy that they require as they share facilities with the general populace. They are often judged if they are seen seeking contraceptive methods leading them to shun away from the facilities".* **Participant 10, Female (48 years).**

*Let us bear in mind that adolescents usually need maximum privacy if they seek sexual health services as they are typically judged harshly by the community if they are seen seeking sexual services and engaging in sexual activities. The majority would not want their guardians, parents, and elders to see them in clinics seeking sexual health services".* **Participant 11, Female (42 years).**

*"We are not well equipped to lure adolescents into utilising our facilities leading to them engaging in unsafe sexual activities. Our facilities do not have privacy as adolescents queue together with the general populace to consult on sexual health-related issues leading to stigmatisation and judgment. In the capital city, we have special clinics for adolescents; for instance, the Mbare clinic that deals with ASH related issues. In some clinics in Epworth, they have private rooms for adolescents, and they do not use the same entrances as the general populace. We seriously need to invest very much on such strategies to ensure uptake of our programs and improve SH outcomes of adolescents".* **Participant 30, Female (28 years).**

### 3.2.3.5 Promiscuous behaviours by adolescents

Another subordinate theme that emerged was that adolescents exhibit promiscuous behaviours and engage in sexual activities early and with multiple partners. This becomes a challenge as they are hard to control, and at the end of the day, predispose themselves to infections and unplanned and unwanted pregnancies.

***Participants said:***

*"These kids rush into having sexual intercourse with the majority starting from the 12 years of age, which is now common in this district. The worrying issue is that they have multiple partners and brag about it as if it is fashionable. I normally ask myself whether it is this technology that they are exposed to or not".* **Participant 2, Female (50 years).**

*"The majority of our adolescents no longer get to 20 years without children. By that age, there would-be mothers or fathers of two to children on average. They no longer go through the stages of puberty properly and fully mature. They would have been parents already; that is why we have a significant proportion of these adolescents dropping out of school".* **Participant 41, Male (43 years).**

*The majority of these cultural initiations incite the adolescents to engage in early sexual activities as they feel they would have been given the right of passage, and they think and feel they are ready to engage in sexual activities. Most of them end up having multiple partners".* **Participant 40, Male (36 years).**

### 3.2.3.6 Hostility of HSPs towards adolescents

It emerged that some of the HSPs have a hostile attitude towards members seeking health services, including adolescents who become intimidated. Participants cited that some members do not uphold values with isolated cases where HSPs have been reported to have physically or emotionally abused their clients. Furthermore, participants mentioned that they now give as minimum effort as possible as most are generally disgruntled with the working conditions and remuneration of their services obtaining in the country.

***Participants said:***

*"A long time ago, we usually thought nursing was a calling, and the majority of individuals were not driven by the financial benefits associated with the job. I think we were confused as one needs the money and makes ends meet if they are productive at the workplace. Due to the*

*economic situation obtaining in the country, people do not work that much or do not commit themselves that much and sometimes become hostile even to the patients".* **Participant 38, Female (32 years).**

*"You realise that the government told us to work for two days a week as they are not able to pay as well? However, in rural areas, we are expected to work 6 days a week, yet our counterparts work for two days a week, and the other five days they look for employment to augment their income. Do you think we would apply ourselves that much and treat the patients fairly, yet there is that inequity?"* **Participant 10, Female (48 years).**

### 3.2.4 IHS factors that could be factored into MHSs

Two subordinate themes emerged under this superordinate theme. These are discussed in-depth in the sections below.

#### 3.2.4.1 Circumcision

Another theme that emerged as an essential factor that needs to be considered for adoption from the IHS is how they mobilise and get the numbers of adolescents to be circumcised. Participants cited that they are facing challenges in obtaining the required numbers and meeting the targets. Participants felt that working with the IHS in the male circumcision program would ensure that they ensure the targets are met and provide the circumcision procedures are done in a manner that is safe and effective whether done culturally or through the health facilities.

***One Participant said:***

*"Culturally, the communities perform circumcision on the adolescents, of which that one of the strategies is we are recently trying to implement in our clinics as funded by the NGOs, and we have failed to get the numbers. When you compare with the initiation gatherings conducted in the communities, they can mobilise the numbers and ensure more adolescents are circumcised. However, we are not fully in support of how it is done. We can, therefore, team up as stakeholders and supervise these circumcisions using standardised and safe methods".* **Participant 11, Female (42 years).**

#### 3.2.4.3 Humanity (Ubuntu)

It emerged from the data that one of the factors that could be incorporated into the MHS is Ubuntu's issue (treating patients with humanity). Participants cited that Ubuntu's element in the MHSs has seriously been degraded due to prevailing contextual settings where HSPs are

overwhelmed, poorly remunerated, and demotivated. Participants further highlight that Ubuntu's element is still valued in the IHS as those that run it strive to maintain their reputation and lure as many clients as possible.

***Participants said:***

*"Even if their way of operation is not standardised (having exact dosages), and in some cases, us having to deal with the damage that would be done. To clarify this, sometimes, their patients are given overdoses of sexual stimulants. However, the system has its weaknesses; it is premised on Ubuntu's spirit where one is not denied treatment just because they do not have adequate resources to pay. In some cases, payments are even made later in life after one has healed completely and has had the opportunity to look for money. It is in contrast with our MHS where payment is usually demanded upfront for most services save for only a few services".* **Participant 22, Male (29 years).**

*"Our trade (nursing) is no longer a calling. We are also struggling like everybody else to the extent that most of us have lost Ubuntu's spirit, and we are no longer going the extra mile to serve these adolescents. This is different from the IHS where one has to maintain Ubuntu's element because that is what brings the clients home. We still need that element in our systems to dignify our work and command the respect of the public".* **Participant 38, Female (32 years).**

### 3.2.5 Strategies to foster the integration of IHS and MHS

Two subordinate themes came upon how they could be a possible integration of the IHS and MHS.

#### 3.2.5.1 Engagement between stakeholders

Participants felt that there was a need for continued engagement between IHS and MHS through workshops as both systems serve a significant chunk of the population. Participants cited that the relations are the majority of times sour as there are competing values and interests and one system views the other as a competitor that is incompetent that just takes clientele unnecessarily.

***Participants said:***

*"One thing that you need to understand is that I have vast experience in the two systems as I am a Nurse now though my father is a Traditional Healer. This has made me see things*

*differently and appreciate that there is room for collaborative effort rather than working in parallel. I understand that from my experience, I managed to convince my father to seek treatment for a condition that had bedevilled him for years. Still, because of his strong beliefs in his abilities to heal himself, he did not consider MHSs as an option. I believe we have not done much to engage our IHS counterparts except when there is something wrong, and it culminates to a blame game".* **Participant 31 Female (39 Years).**

*"We once organised a workshop with the IHS personnel at some point as we realised that during their adolescent circumcision period, majority of those culturally circumcised adolescents had infections, lost a lot of blood, and some even died. After the engagement, we were able to deploy health personnel in these initiation ceremonies to monitor the process. However, we had only to send health personnel belonging to that culture. Therefore with continuous engagement, there is a possibility of overcoming the odds and foster this integration".* **Participant 41, Male (43 years).**

**3.2.5.2 Community cultural gatherings**

Participants cited a need to utilise the cultural gatherings to foster and forge a good relationship between IHS and MHS. Participants noted that it is in these gatherings where most information is shared; for instance, the *Umguyo* ceremony performed by Amaxhosa to initiate male adolescents. Participants felt information sharing and sharing of values in such gatherings could also be used as a platform for collaboration.

***Participants said:***

*"The majority of HSPs are divorced and distance themselves from events that are going on in these communities as most do not belong to the districts. This creates segregation as there is no trust and collegiality between the key stakeholders in the communities and the HSPs. This stifles programs that we want to implement in these communities".* **Participant 9, Male (28 years).**

*"With me, I feel integrated into the community as I grew up here and from this district. However, most of my colleagues find it difficult to fit in the societies as they do not mix and mingle with the community workers. The community also sees them as in a different class, thereby hindering collaborative efforts. A good starting point is to be involved in these community activities and*

*adopts them as a platform for dialogue and information sharing".* **Participant 12, Female (22 years).**

## 4.0 Discussion

The findings of this study point out that the prevalence of STIs and pregnancies has been very high by the key stakeholders, which has led to complications during delivery and high school dropouts. It is also reported that one of the driving factors for adolescents to engage in sexual activities was fuelled by poverty as the majority of the adolescents are left I charge in the homes as parents migrate to seek opportunities to sustain their livelihoods. These findings are well supported by different studies that have found a relationship between poverty, promiscuity, and very low ages at first sex in adolescents in resource-poor settings as individuals engage in transactional sex for livelihoods (Raphael, 2015, Cusick, 2002). Engagement in this transactional sex then leads to higher chances of infection by STIs as well as a high prevalence of pregnancies as the majority of times the adolescents are not able to negotiate for safer sex as they lack that decision making power if they are engaging older and experienced individuals (Willis and Levy, 2002). By virtue that these adolescents are still at developmental stages, if they get pregnant, the risk of complications during that pregnancy and delivery are incredibly high (Bagley, 1999, Omar et al., 2010).

It emerged from this study that HSPs play several roles in ASH issues. These roles were mentioned to be centred on providing education, awareness, contraceptives, birth supervision, and conducting circumcisions. These services expect a basic package that should be offered to adolescents as enshrined in the Primary Health Care (PHC) expected minimum package (Mohapi and Basu, 2012, Dookie and Singh, 2012). However, it is quite a challenge to deal with adolescents as it was reported by this study that adolescents delay seeking treatment, particularly if they are suffering from STIs. Some studies support these findings that adolescents need to feel comfortable and secure if they are seeking these services (Joshi et al., 2006). This could be one reason that even though circumcision services are available for them, they do not take them up and prefer to go for the culturally performed one where they feel comfortable and secure (Joshi et al., 2006).

It was observed from this study that shortage of resources, poor health-seeking behaviours of adolescents, inadequately trained HSPs to handle adolescent sexual health matters, hostile staff, facilities that are not friendly to adolescents, and the promiscuous behaviours by

adolescents as well. It has been reported by several studies that adolescents are delicate and are prone to abuse; therefore, sufficient resources need to be channelled towards coming up with strategies that ensure adolescents are accommodated in the health systems (HSs) (Barker, 2007). To elaborate further, a significant number of adolescents have committed suicide due to failure to cope with stress, sexual abuse, and general abuse in their communities, calling for a need that HSPs are sufficiently trained to provide counselling and sufficient support services to rehabilitate these adolescents so that they are reintegrated to society after such traumatising experiences (Mantula and Saloojee, 2016). Studies have also reported poverty as the biggest driver of promiscuous behaviours in adolescents, which then predisposes them to risks of contracting and spreading STIs as well as unwanted pregnancies (Raphael, 2015, Cusick, 2002). Therefore it is argued that if these conditions are addressed, this could create a progressive environment that would encourage adolescents to utilise MHSs with ease and confidence (Raphael, 2015, Cusick, 2002).

Participants felt there is a need to adopt some of the ways that are in the IHS such that they increase the demand for services and promote collaborative efforts. These were mentioned as Ubuntu and adopting and riding on ways of mobilising adolescents for circumcision that are done by the IHS. The majority of the times HSPs have been accused of having a judgemental attitude towards adolescents, which is usually a deterrent for them to access services (Epprecht, 2012). However, it is noted that IHS's driving value seeks to leverage on Ubuntu and is not usually driven by financial gains (Edwards et al., 2004). It could be noted that the IHS survive through clientele; therefore, they are bound to treat their clients with dignity with little or no hostility reported in the MHS (Edwards et al., 2004). Adolescents usually would engage in programs that they have trust in and where they feel value. Circumcision during their cultural initiation ceremonies, they are treated with utmost importance and value, and they feel appreciated as they move from boyhood to manhood (Marck, 1997). If HSPs partner and be involved in such activities without undermining the cultural processes, they could ensure that the circumcision process is done safely (Themistocleous and Mantzana, 2004).

In this study, it was pointed out that there are possible ways that could be used to forge a collaborative effort between IHS and MHS. These were cited as promotion of engagement between stakeholders in the two systems as well as HSPs participating in cultural gatherings. It should be noted that these proposals aide trust among different stakeholders and thus improves relations and confidence, thereby becoming a platform for the exchange of ideas and fostering teamwork and establishment of common goals that would be understood and pursued by all

stakeholders with minimum opposition and resistance (Themistocleous and Mantzana, 2004). All stakeholders become part of one team and are bound to pull in the same direction and consult each other, and possibly attain quality outcomes in as far as ASH related issues are concerned (Themistocleous and Mantzana, 2004).

## 5.0 Conclusions

It can be concluded that HSPs play an essential role in shaping and providing ASH services utilised by adolescents despite challenges that have reduced demand for these services. Therefore, it is pertinent to note that there is a need for collaborative efforts between IHS and MHS such that there are complementary efforts rather than parallel efforts that could be detrimental in addressing ASH issues. There is, therefore, a need to point out that there is a window of opportunity to foster collaboration between these two systems as they strive to serve the adolescents to the best of their ability though in different contextual settings.

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# Health Systems Utilisation and adolescent sexual health practices in Umguza and Mberengwa districts in Zimbabwe

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See **Appendix 16** for Author Guidelines.

**0.0 Abstract**

***Purpose:*** This study sought to explore the extent of the influence of Health Systems in moulding adolescent sexual behaviours in Mberengwa and Umguza districts.

***Methods:*** A quantitative cross-sectional survey was conducted on 370 and 360 systematically selected adolescents in Mberengwa and Umguza districts, respectively, using a pre-tested recorder administered questionnaire. The collected data was captured in Excel and imported to STATA Version 13 SE for analysis. Different statistical methods (both descriptive and inferential) were utilised to interrogate collected data and inferences made.

***Results:*** The majority of the respondents were female and were between 13-17 years. The majority of the respondents were literate. Umguza district had a significantly higher prevalence of pregnancies, Sexually Transmitted Infections, and a higher number of adolescents who were engaging in sexual activities. Predictors of Sexually Transmitted Infections and pregnancies were the sex of respondent, tribe, sexual encounters, age, and religion.

***Conclusions:*** Adolescents are at risk of contracting Sexually Transmitted Infections and impregnating as they engage in risky sexual behaviours as evidenced by the findings. The two districts have a significantly higher prevalence of having sex than the national average.

**Keywords:** Adolescents; Health Systems; Practices; Sexual Health; Utilisation; Zimbabwe

### 0.1 Implications and Contribution

In developing countries, adolescents have had limited access to reproductive health services due to several factors: the nature of health systems and their organisations. There is a need to craft contextual policies and programs that would promote the elimination of these risky sexual behaviours that predispose adolescents.

## 1.0 Background

Worldwide, adolescents have had limited access to reproductive health (RH) services due to several factors [1]. Since most adolescents are below the age who can voluntarily participate in any activities regarding their SH, they end up shunning accessing these services [2]. Most countries have laws and policies that stipulate ages of consent at around 16 /18 years and above, with those younger than these specified ages requiring parental consent for them to access SH services such as HIV counselling and testing, access to contraceptive products, and many more [2, 3]. It should be noted that requiring parental consent for adolescents is meant to protect them from being taken advantage of or abused in general [3, 4]. However, requiring parental consent on sexual health-related issues is a significant barrier in acquiring such services as adolescents' right to privacy is invaded, and they likely end up in trouble with their parents or guardians [4].

Health Systems (HSs) play a significant role in influencing or shaping adolescents' sexual behaviours [5]. Some HSs have been less accommodative to adolescents by being judgemental [3]. This scenario has been pointed out as a significant hindrance to SH services by adolescents as the majority of times they are not given enough room to be comfortable to inquire and seek clarity on the services they need [3, 6, 7].

The Zimbabwean scenario is not different from what is found in many countries as they emphasise parental consent on many issues/ services consumed by adolescents [8]. However, in collaboration with some Non-Governmental Organisations (NGOs), the country has taken giant steps to try and accommodate adolescents that are: provision of adolescent-friendly facilities where some institutions have dedicated consultations rooms and private entry to those by adolescents to facilitate and aide comfort and privacy for adolescents to utilise these services fully, training of the Health Service Providers (HSPs) to be sensitive to ASH and develop strategies that facilitate and promote high demand and uptake of SH services, being sensitive to religious and cultural factors, provide age-appropriate services to mention a few [9-12]. However, there is not much that has happened to transform the IHS such that its efficiency and effectiveness are also improved as far as management of ASH issues is concerned [13]. It is worth noting that the IHS in Zimbabwe serves a significant proportion of the population; therefore, its transformation and improvement of services are also significant [14].

Mberengwa and Umguza districts have the highest prevalence of sexually transmitted infections (STIs) and teenage pregnancy as compared to other districts in Zimbabwe [12, 15]. There is also a high rate of school dropouts amongst adolescents in these two districts. Not much has been done to assess the impact of health systems (HSs) on ASH, particularly in highly cultural areas such as Mberengwa and Umguza districts. Therefore, this paper sought to explore the extent of the influence of Indigenous Health Systems (IHS) and Modern Health Systems (MHS) in moulding adolescent sexual behaviours in Mberengwa and Umguza districts. Furthermore, the study further explored adolescent sexual experiences. It sought to explore their views (adolescents) in whether or not it was essential to integrate these two systems (IHS and MHS) and, if so, how.

## 2.0 Methods

### 2.1 Study Setting

The study was conducted in Mberengwa and Umguza districts. These districts are highly cultural and have the highest prevalence of STIs and teenage pregnancies [16-18]. Most individuals living in these districts are of low socio-economic quintile as the districts are rural and most survive through peasant farming and illegal gold panning [19]. The majority of male adolescents who drop out of school in these districts usually end up as gold panners or migrate to neighbouring countries such as South Africa and Botswana searching for greener pastures [20-22]. The two districts are captured in **Fig 1**.

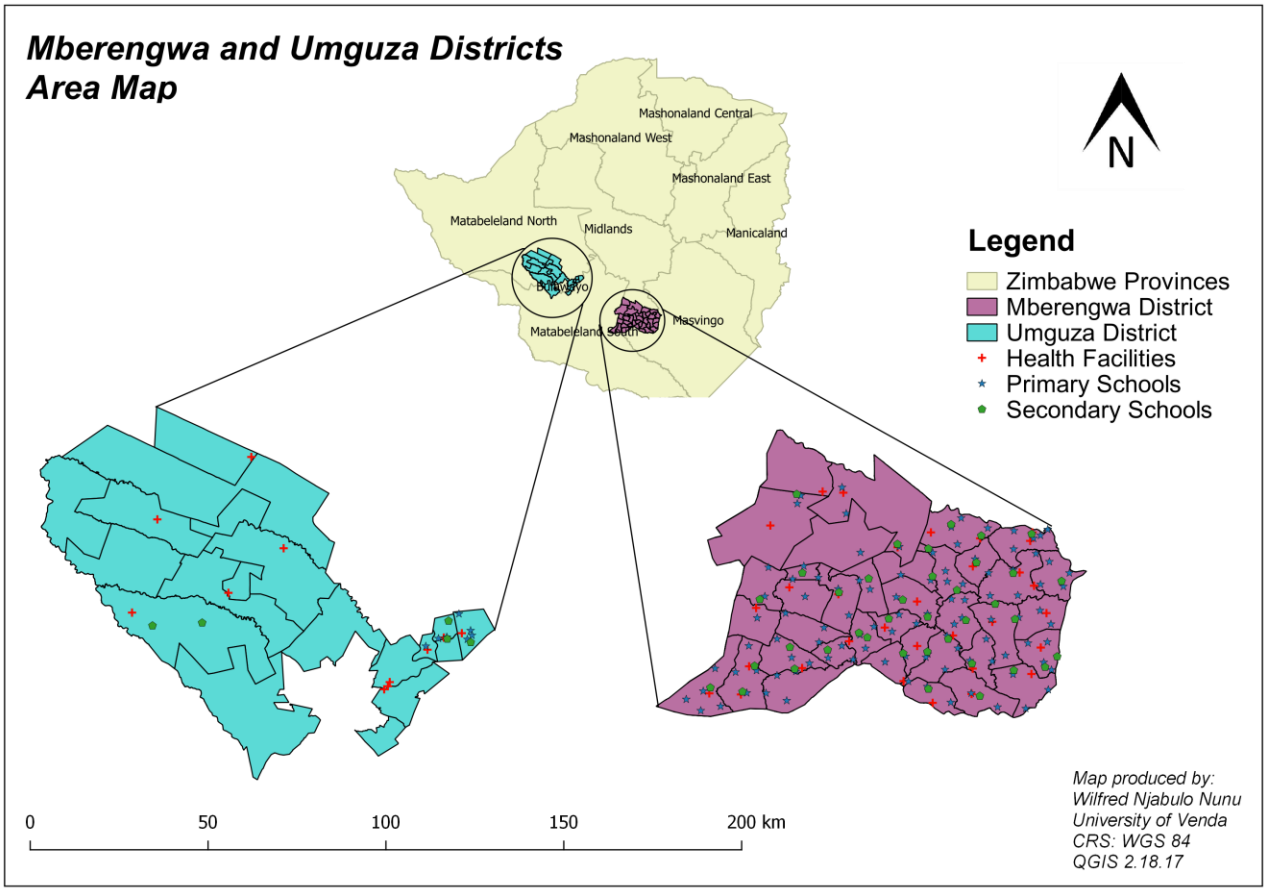


**Fig 1:** Mberengwa and Umguza Districts, Zimbabwe

### 2.2 Study Design

A quantitative cross-sectional survey was conducted on adolescents in Mberengwa and Umguza districts. This design enabled the researcher to explore relationships between different variables and adolescent sexual practices and experiences [23]. This design also allowed for the prevalence of STIs and teenage pregnancies to be estimated in the adolescent populations in the two districts [23].

### 2.3 Study Population and Sampling

This study targeted adolescents aged 10 to 19 years, as defined by the World Health Organisation (WHO) [24]. Basing on the 2012 Zimbabwean Census Report, it was estimated that there were 68 339 adolescents in Umguza and 168 087 in Mberengwa in 2012 [25]. Adjusting this population using the 1.56% population growth rate per annum, the adolescent populations were estimated to be 73840 and 181618 for Umguza and Mberengwa, respectively, in 2019. A sample size calculator on EPI INFO was then used to estimate the minimum sample

size to make meaningful inferences. The attributes used in the sample size determination were 95% Confidence Level with a margin of error of 5% and a response distribution of 50%. This scenario gave a sample size of 360 and 370 for Umguza and Mberengwa districts, respectively. Stratified random sampling was then used to ensure that all wards in the districts were proportionally covered. Mberengwa has 37 wards; therefore, ten participants were recruited from each ward, while in Umguza (18 wards), 20 participants were recruited from each ward. Participants were identified through community registers at the ward level then followed up at school or their homesteads for data collection.

### 2.4 Data Collection Tools

A pre-tested semi-structured interviewer-administered questionnaire was used to collect data from respondents. The tool was adapted from John Cleland's questionnaire for surveys on the sexual and reproductive health of young people on the WHO website [26]. The questionnaire (developed in English and then translated to Ndebele and Shona) had six sections that are: demographics; practices; reasons for engaging in sexual activities and extent of supervision; the role of identified IHSs and their relationship with adolescent sexual experiences; the role of MHSs in shaping adolescent sexual experiences; and lastly adolescents' views on integrating IHS and MHS. The questionnaire comprised of both open-ended and closed questions and took between 15 minutes to 30 minutes to administer. The questionnaire is appended as **Appendix 13** of this dissertation.

### 2.5 Data Management and Analysis

The collected data was captured on an excel spreadsheet and imported into STATA Version 13 Standard Edition for analysis. Firstly a correlation test was done on all variables of interest to ascertain whether there was Multicollinearity [27, 28]. If the correlation analysis gives an outcome greater than 0.8, Multicollinearity exists [29]. Multicollinearity occurs when independent variables in a model are associated [30]. This association is a problem because independent variables should be independent [30]. If this association between variables is high enough, it can cause problems when you fit the model and interpret the results [30]. Furthermore, a Stepwise Logistic Regression (SLR) analysis was conducted to ascertain the validity of the predictor variables that were subsequently used to build the Multiple Logistic Regression (MLR) models. This was done through the use of Bivariate analysis to determine which variables were to be used to construct the MLR model where different variables of interest were cross-tabulated with the outcome variables "***Prevalence of STIs and Pregnancy/impregnating***." All variables that gave a p-value of 0.2 or less qualified for the forward selection and were tested on

the MLR for associations. It is standard practice to forward select variables with a p-value of 0.2 or less to minimise the loss of variables in the early stages of model building [31, 32]. This method is often used to provide an initial screening of the candidate variables when many variables are involved [32, 33]. Finally, all variables with a p-value of 0.05 or less were presented in the final MLR model. The MLR model was used to determine the relationship between different variables and how they influenced ***STI prevalence and Teenage pregnancies/impregnating*** (as these were used as the outcome variables for this model). Furthermore, Chi-squared tests ($\chi^2$), Cox Regression-Breslow method of ties, and Kaplan-Meier Survival Estimates were used to compare STIs prevalence, pregnancy/impregnating, and engagement in sexual intercourse by adolescents in the two districts.

## 3.0 Results

### 3.1 Variable Correlation Test

All the covariates had a correlation output of less than 0.8 symbolising no relationship between the covariates. Therefore this meant that the covariates were not biased as no Multicollinearity was detected. Therefore, these variables were passed to be fit to be used for tabulations in the building of the MLR Model. The findings of this test are presented in **Table 1**.

**Table 1:** Outcome of the Multicollinearity tests

| | Sex of Respondent | Attended School | Religion | Tribe | Employment status | Involvement in cultural ceremonies | Engagement in sexual activities | Suffered from STIs | Pregnancy |
|---|---|---|---|---|---|---|---|---|---|
| **Sex of Respondent** | 1.00 | * | | | | | | | |
| **Attended School** | * | * | | | | | | | |
| **Religion** | 0.26 | * | 1.00 | | | | | | |
| **Tribe** | 0.09 | * | 0.20 | 1.00 | | | | | |
| **Employment Status** | 0.12 | * | 0.06 | -0.02 | 1.00 | | | | |
| **Involvement in cultural ceremonies** | 0.01 | * | 0.07 | 0.13 | -0.01 | 1.00 | | | |
| **Engagement in sexual activities** | -0.09 | * | 0.03 | 0.12 | 0.01 | 0.04 | 1.00 | | |
| **Suffered from STIs** | -0.15 | * | 0.13 | -0.02 | 0.21 | 0.09 | 0.06 | 1.00 | |
| **Pregnancy** | 0.0874 | * | 0.19 | -0.05 | 0.20 | 0.05 | 0.07 | 0.65 | 1.00 |

### 3.2 Socio-Demographic Characteristics

The majority of respondents were females in both districts, accounting for over 50% of respondents. The dominant age group was 13-17 years, and close to 100% were literate. The majority had attended school, and none of the respondents had been or attained a tertiary level education. The percentage prevalence of STIs, engagement in sexual activities, and percentage prevalence of pregnancies were significantly higher in Umguza as compared to Mberengwa Districts (STIs 10.3 6.8; had sex 26.7, 20.3, and prevalence of pregnancies 12.5, 7.0 respectively). These findings are presented in **Table 2**.

**Table 2:** Socio-Demographic Characteristics (n=370 Mberengwa and 360 Umguza)

| | Mberengwa n (%) | Umguza n (%) |
|---|---|---|
| **Sex** | | |
| Male | 178 (48.1) | 154 (42.8) |
| Female | 192 (51.9) | 206 (57.2) |
| | | |
| **Age** | | |
| 10-12 years | 146 (39.5) | 101 (28.1) |
| 13-17 years | 200 (54.0) | 216 (60.0) |
| 18-19 years | 24 (6.5) | 43 (11.9) |
| | | |
| **Ability to Read** | | |
| Yes | 366 (98.9) | 348 (96.7) |
| No | 4 (1.1) | 12 (3.3) |
| | | |
| **Ever Attended School** | | |
| Yes | 364 (98.4%) | 357 (99.2) |
| No | 6 (1.6%) | 3 (0.8) |
| | | |
| **Level of Education** | | |
| None | 195 (52.7) | 201 |
| Primary | 160 (43.2) | 36 |
| Secondary | 15 (4.1) | 118 |
| Tertiary | 0 | 0 |
| | | |
| **Currently Attending School** | | |
| Yes | 343 (92.7) | 329 (93.4) |
| No | 27(7.3) | 31 (5.3) |
| | | |
| **Number of years you expect to be at school** | | |
| <10 years | 175 (51.3) | 137 (43.2) |
| 10+ years | 166 (48.7) | 180 (8.6) |
| | | |
| **Age when one left school** | | |
| <10 years | 0 | 0 |
| 10-12 years | 5 (18.5) | 3 (9.7) |
| 13-17 years | 22 (81.5) | 28 (90.3) |
| 18-19 years | 0 | 0 |
| | | |
| **Religion** | | |
| None | 58 (15.6) | 53 (15.1) |
| Catholic | 9 (2.4) | 15 (4.3) |
| Protestant | 76 (20.5) | 72 (20.5) |
| Pentecostal | 106 (28.6) | 110 (31.3) |
| Other | 121 (32.7) | 101 (28.8) |
| | | |
| **Frequency of attending Religious Services** | | |

| | | |
|---|---|---|
| Every day | 28 (7.6) | 33 (9.3) |
| At least once a week | 259 (70) | 243 (68.3) |
| At least once a month | 23 (6.2) | 28 (7.9) |
| At least once a year | 3 (0.8) | 3 (0.8) |
| Never | 57 (15.4) | 49 (13.8) |
| | | |
| **Importance of Religion** | | |
| Important | 139 (81.3) | 321 (92.5) |
| Not Important | 32 (18.7) | 26 (7.5) |
| | | |
| **Tribe** | | |
| Xhosa | 2 (0.5) | 44 (12.4) |
| Ndebele | 165 (44.6) | 175 (49.3) |
| Lemba | 29 (7.8) | 6 (1.7) |
| Shona | 143 (38.6) | 60 (16.9) |
| Other | 31(8.4) | 70 (19.7) |
| | | |
| **Employed** | | |
| Yes | 14 (3.8) | 15 (4.3) |
| No | 356 (96.2) | 336 (95.7) |
| | | |
| **Prevalence of STIs** | | |
| Suffered from STI | 25 (6.8) | 38 (10.3) |
| Did not suffer from STI | 345 (93.2) | 322 (89.7) |
| | | |
| **Had Sex** | | |
| Yes | 75 (20.3) | 96 (26.7) |
| No | 295 (79.7) | 264 (73.3) |
| | | |
| **Pregnancy/Impregnating** | | |
| Ever pregnant/ Impregnated | 26 (7.0) | 45 (12.5) |
| Never pregnant or impregnated | 344 (93.7) | 315 (87.5) |
| | | |
| **Nature of Work** | | |
| Herding cattle; Cleaning neighbours homestead; Cleaning of neighbours homestead who are based in South Africa; Informal Gold panning; Vending; Caretaker; Teller; Working at a Shop; Working in South Africa; Gardener; doing piece jobs | | |
| | | |
| **Average amount Earned** | | |
| | 410 | 350 |
| | | |

### 3.3 Outcomes of Bivariate cross-tabulations using the SLR.

#### 3.3.1 Using outcome variable "Having suffered from STIs."

Several variables gave a p-value of less than 0.2 and were forward selected to build the MLR using "*Having suffered from STIs*" as an outcome variable. These findings are presented in **Table 3.**

**Table 3:** Bivariate analysis per District using the prevalence of STIs as an outcome variable

| Outcome Variable Having suffered from STIs | | | | |
|---|---|---|---|---|
| | **Mberengwa** | | **Umguza** | |
| | **Have STIs (%)** | **Do not have STIs (%)** | **Have STIs (%)** | **Do Not have STIs (%)** |
| **Sex** | | | | |
| Male | 37.0 | 49.0 | 53.8 | 30.4 |
| Female | 63.0 | 51.0 | 46.2 | 69.6 |
| **P-value** | **0.111** | | **0,022*** | |
| **Age** | | | | |
| 10-12 years | 0 | 13.7 | 2.6 | 19.6 |
| 13-17 years | 70.4 | 72.5 | 53.8 | 58.9 |
| 18-19 years | 29.6 | 13.7 | 43.6 | 21.4 |
| **P-value** | **0.049*** | | **0.011*** | |
| **Ability to Read** | | | | |
| Yes | 100.0 | 98.0 | 94.9 | 94.6 |
| No | 0 | 2.0 | 5.1 | 5.4 |
| **P-value** | **0.464** | | **0.961** | |
| **Ever Attended School** | | | | |
| Yes | 100. | 100.0 | 100.0 | 100.0 |
| No | 0 | 0 | 0 | 0 |
| **P-value** | **N/A** | | **N/A** | |
| **Level of Education Completed** | | | | |
| None | 96.3 | 64.7 | 66.7 | 55.4 |
| Primary | 3.7 | 5.9 | 20.5 | 12.5 |
| Secondary | 0 | 0 | 0 | 0 |
| Tertiary | 0 | 29.4 | 12.8 | 32.1 |
| **P-value** | **0.005*** | | **0.083*** | |
| **Currently Attending School** | | | | |
| Yes | 100.0 | 100.0 | 100.0 | 87.5 |
| No | 0 | 0 | 0 | 12.5 |
| **P-value** | **N/A** | | **0.023*** | |
| **Number of years you expect to be at school** | | | | |
| <10 years | 100 | 44.4 | 33.3 | 35.0 |
| 10+ years | 0 | 55.6 | 66.7 | 65.0 |
| **P-value** | **0.001*** | | **0.896** | |
| **Age when one left school** | | | | |
| <10 years | 0 | 0 | 100.0 | 100.0 |
| 10-12 years | 5.6 | 20.0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| 13-17 years | 94.4 | 80.0 | 0 | 0 |
| 18-19 years | 0 | 0 | 0 | 0 |
| **P-value** | **0.311** | | **N/A** | |
| **Religion** | | | | |
| None | 11.1 | 13.7 | 26.3 | 8.9 |
| Catholic | 33.3 | 0 | 2.0 | 8.9 |
| Protestant | 33.3 | 21.6 | 21.1 | 32.1 |
| Pentecostal | 29.6 | 37.3 | 34.2 | 14.3 |
| Other | 25.9 | 27.5 | 13.2 | 35.7 |
| **P-value** | **0.715** | | **0.007*** | |
| **Tribe** | | | | |
| Xhosa | 0 | 3.9 | 17.9 | 23.2 |
| Ndebele | 7.4 | 41.2 | 48.7 | 35.7 |
| Lemba | 44.4 | 5.9 | 0 | 1.8 |
| Shona | 44.4 | 37.3 | 7.7 | 16.1 |
| Other | 3.7 | 11.8 | 25.6 | 23.2 |
| **P-value** | **0.000*** | | **0.512** | |
| **Employment Status** | | | | |
| Employed | 25.9 | 29.0 | 15.4 | 7.5 |
| Not Employed | 74.1 | 71.0 | 84.6 | 92.4 |
| **P-value** | **0.004*** | | **0.166*** | |
| **Average Income** | | | | |
| Income | 400 | 500 | 308 | 200 |
| **P-value** | **N/A** | | **N/A** | |
| **Communication with Parents or guardians** | | | | |
| Very easy | 18.5 | 58.9 | 30.8 | 55.4 |
| Easy | 18.5 | 11.8 | 23.1 | 12.5 |
| Average | 14.8 | 2.0 | 23.1 | 5.4 |
| Very difficult | 44.4 | 13.7 | 7.7 | 14.3 |
| Difficult | 3.7 | 11.8 | 10.3 | 12.5 |
| Do not see them | 0 | 2.0 | 5.1 | 0 |
| **P-value** | **0.002*** | | **0.015*** | |
| **Discussion of sex-related issues with anyone** | | | | |
| Yes | 59.3 | 35.8 | 51.3 | 55.4 |
| No | 40.7 | 64.2 | 48.7 | 44.6 |
| **P-value** | **0.258** | | **0.695** | |
| **Source of Sexual Information** | | | | |
| Initiation schools | 0 | 8.0 | 0 | 0 |
| School teacher | 40.0 | 48.0 | 0 | 0 |
| Parents/guardians | 0 | 4.0 | 48.6 | 40.4 |
| Siblings | 0 | 2.0 | 5.7 | 8.5 |
| Other family members | 28.0 | 10.0 | 14.3 | 12.7 |
| Friends | 12.0 | 16.0 | 11.4 | 14.9 |
| Health Care Providers | 8.0 | 6.0 | 8.6 | 40.4 |
| Media | 0 | 0 | 11.4 | 4.3 |
| Other specify | 12.0 | 6.0 | 0 | 0 |
| **P-value** | **0.320** | | **0.730** | |
| **Involved in cultural initiation** | | | | |

| | | | | |
|---|---|---|---|---|
| Yes | 18.5 | 21.6 | 33.3 | 20.0 |
| No | 81.5 | 78.4 | 66.7 | 80.0 |
| **P-value** | **0.751** | | **0.154*** | |
| **Had sex** | | | | |
| Yes | 100.0 | 100.0 | 100.0 | 98.2 |
| No | 0 | 0 | 0 | 1.8 |
| **P-value** | **N/A** | | **0.401** | |
| **Age at First Sexual Encounter** | | | | |
| <10 years | 0 | 9.8 | 10.3 | 3.6 |
| 10-12 years | 11.1 | 21.6 | 25.6 | 46.4 |
| 13-17 years | 88.9 | 64.7 | 64.1 | 50.0 |
| 18-19 years | 0 | 3.9 | 0 | 0 |
| **P-value** | **0.103*** | | **0.079*** | |
| **Methods used for preventing STIs and pregnancy** | | | | |
| Condom | 14.8 | 52.1 | 46.2 | 30.4 |
| Withdrawal | 29.6 | 14.6 | 23.1 | 26.8 |
| Pill | 7.4 | 0 | 0 | 0 |
| Injection | 0 | 0 | 0 | 0 |
| Other | 48.1 | 33.3 | 30.8 | 42.9 |
| **P-value** | **0.005*** | | **0.277** | |
| **Treatment of STIs** | | | | |
| Went to traditional healers/ herbalist | 38.5 | 0 | 100.0 | 100.0 |
| Went to a health facility | 42.3 | 100.0 | 0 | 0 |
| Did not seek treatment | 11.5 | 0 | 0 | 0 |
| Other specify | 7.7 | 0 | 0 | 0 |
| **P-value** | **0.478** | | **N/A** | |
| **Pregnant or Impregnated** | | | | |
| Yes | 92.9 | 2.1 | 74.1 | 32.1 |
| No | 7.1 | 97.9 | 25.6 | 67.9 |
| **P-value** | **0.000*** | | **0.000*** | |
| **Sexual Encounter(s)** | | | | |
| I wanted to have sex | 51.9 | 31.4 | 56.4 | 21.4 |
| My partner wanted us to have sex | 18.5 | 19.6 | 15.4 | 44.6 |
| Neither of us wanted, but it just happened | 11.1 | 31.4 | 23.1 | 10.7 |
| I was culturally obliged to | 14.9 | 0 | 0 | 14.3 |
| Other specify | 3.7 | 17.6 | 5.1 | 8.9 |
| **P-value** | **0.004*** | | **0.000*** | |
| **Taught to have sex** | | | | |
| Yes | 25.9 | 40.0 | 74.4 | 85.7 |

| | | | | |
|---|---|---|---|---|
| No | 74.1 | 60.0 | 25.6 | 14.3 |
| **P-value** | **0.355** | | **0.000*** | |
| **Source of information** | | | | |
| Cultural initiation | 33.3 | 15.4 | 17.9 | 0 |
| Brothers | 11.1 | 15.4 | 3.6 | 21.6 |
| Sisters | 11.1 | 46.2 | 0 | 13.5 |
| School curriculum | 33.3 | 15.4 | 50.0 | 51.4 |
| Other family members | 11.1 | 3.8 | 25.0 | 8.1 |
| Other specify | 0 | 0 | 3.6 | 5.4 |
| **P-value** | **0.118*** | | **0.008*** | |
| **Activities at initiation schools** | | | | |
| Sexual education | 15.0 | 25.6 | 32.4 | 22.4 |
| Circumcision | 30.0 | 20.9 | 14.7 | 10.2 |
| Vaginal modifications | 20.0 | 4.7 | 17.6 | 20.4 |
| Other | 35.0 | 48.8 | 35.3 | 46.9 |
| **P-value** | **0.163*** | | **0.523** | |
| **Do these activities influence your decision to engage in sexual activities** | | | | |
| Yes | 24.0 | 29.3 | 35.3 | 32.0 |
| No | 76.0 | 70.7 | 64.7 | 68.0 |
| **P-value** | **0.641** | | **0.753** | |
| **Encountered any challenge** | | | | |
| Yes | 11.5 | 12.9 | 20.7 | 4.4 |
| No | 88.5 | 87.1 | 79.3 | 95.6 |
| **P-value** | **0.876** | | **0.028*** | |
| **Health education** | | | | |
| Yes | 44.7 | 56.9 | 69.2 | 60.0 |
| No | 55.3 | 43.1 | 30.8 | 40.0 |
| **P-value** | **0.067*** | | **0.359** | |
| **Interaction with health service providers** | | | | |
| Through school health services | 85.7 | 69.7 | 43.8 | 51.5 |
| From health facility | 9.5 | 15.2 | 37.5 | 30.3 |
| Through media | 0 | 12.1 | 15.6 | 18.2 |
| Other specify | 4.8 | 3.0 | 3.1 | 0 |
| **P-value** | **0.334** | | **0.671** | |
| **IHS important in shaping sexual health** | | | | |
| Yes | 55.6 | 56.0 | 41.0 | 42.9 |
| No | 44.4 | 44.0 | 59.0 | 57.1 |
| **P-value** | **0.970** | | **0.859** | |
| **MHS being important in shaping sexual health** | | | | |
| Yes | 30.5 | 47.4 | 64.1 | 60.0 |
| No | 69.5 | 52.6 | 35.9 | 40.0 |
| **P-value** | **0.179*** | | **0.687** | |
| **Activities at initiation schools** | | | | |
| Sexual education | 15.0 | 25.6 | 32.4 | 22.4 |

| | | | | |
|---|---|---|---|---|
| Circumcision | 30.0 | 20.9 | 14.7 | 10.2 |
| Vaginal modifications | 20.0 | 4.7 | 17.6 | 20.4 |
| Other | 35.0 | 48.8 | 35.3 | 46.9 |
| **P-value** | **0.163*** | | **0.523** | |
| **Do these activities influence your decision to engage in sexual activities** | | | | |
| Yes | 64.0 | 29.3 | 35.3 | 32.0 |
| No | 36.0 | 70.7 | 64.7 | 68.0 |
| **P-value** | **0.641** | | **0.753** | |
| **Encountered any challenge** | | | | |
| Yes | 11.5 | 46.0 | 20.7 | 4.4 |
| No | 88.5 | 54.0 | 79.3 | 95.6 |
| **P-value** | **0.876** | | **0.028*** | |
| **Health education** | | | | |
| Yes | 44.7 | 56.9 | 69.2 | 60.0 |
| No | 55.3 | 43.1 | 30.8 | 40.0 |
| **P-value** | **0.067*** | | **0.359** | |
| **Interaction with health service providers** | | | | |
| Through school health services | 85.7 | 69.7 | 43.8 | 51.5 |
| From health facility | 9.5 | 15.2 | 37.5 | 30.3 |
| Through media | 0 | 12.1 | 15.6 | 18.2 |
| Other specify | 4.8 | 3.03 | 3.1 | 0 |
| **P-value** | **0.334** | | **0.671** | |
| **IHS important in shaping sexual health** | | | | |
| Yes | 55.6 | 56.0 | 41.0 | 42.9 |
| No | 44.4 | 44.0 | 59.0 | 57.1 |
| **P-value** | **0.970** | | **0.859** | |
| **MHS being important in shaping sexual health** | | | | |
| Yes | 64.3 | 80.4 | 64.1 | 60.0 |
| No | 35.7 | 19.6 | 35.9 | 40.0 |
| **P-value** | **0.179*** | | **0.687** | |

*Forward selected to build the MLR model.

### 3.3.2 Using outcome variable *"pregnant or impregnated."*

Some variables were associated with the outcome variable (age, level of education, number of years expected to be at school, just name a few). A significant proportion of the variables gave a p-value of 0.2 or less and thus were selected to be included in the final building of the MLR model. These findings are presented in **Table 4**.

**Table 4:** Bivariate analysis per District using the prevalence of STIs as an outcome variable

| Outcome Variable pregnant or impregnated | | | | |
|---|---|---|---|---|
| | **Mberengwa** | | **Umguza** | |
| | **Have STIs** | **Do not have STIs** | **Have STIs** | **Do Not have STIs** |
| **Sex** | | | | |
| Male | 35.7 | 50.0 | 42.1 | 54.4 |
| Female | 64.3 | 50.0 | 57.9 | 45.6 |
| **P-value** | **0.200*** | | **0.241** | |
| **Age** | | | | |
| 10-12 years | 0 | 12.5 | 0 | 25.0 |
| 13-17 years | 67.9 | 75.0 | 48.9 | 64.6 |
| 18-19 years | 32.1 | 12.5 | 51.1 | 10.4 |
| **P-value** | **0.029*** | | **0.000*** | |
| **Ability to Read** | | | | |
| Yes | 100.0 | 97.9 | 91.5 | 97.9 |
| No | 0 | 2.1 | 8.5 | 2.1 |
| **P-value** | **0.442** | | **0.161*** | |
| **Ever Attended School** | | | | |
| Yes | 100.0 | 100.0 | 100.0 | 100.0 |
| No | 0 | 0 | 0 | 0 |
| **P-value** | **N/A** | | **N/A** | |
| **Level of Education** | | | | |
| None | 96.4 | 66.7 | 70.2 | 50.0 |
| Primary | 3.6 | 6.3 | 19.1 | 12.5 |
| Secondary | 0 | 0 | 0 | 0 |
| Tertiary | 0 | 27.1 | 10.6 | 37.5 |
| **P-value** | **0.007*** | | **0.009*** | |
| **Currently Attending School** | | | | |
| Yes | 100.0 | 100.0 | 52.9 | 0 |
| No | 0 | 0 | 47.1 | 100.0 |
| **P-value** | **N/A** | | **0.007*** | |
| **Number of years you expect to be at school** | | | | |
| <10 years | 100 | 48.9 | 35.0 | 34.1 |
| 10+ years | 0 | 51.2 | 65.0 | 65.9 |
| **P-value** | **0.003*** | | **0.947** | |
| **Age when one left school** | | | | |
| <10 years | 5.0 | 33.3 | 100.0 | 100.0 |
| 10-12 years | 95.0 | 66.7 | 0 | 0 |
| 13-17 years | 0 | 0 | 0 | 0 |
| 18-19 years | 0 | 0 | 0 | 0 |
| **P-value** | **0.104*** | | **N/A** | |
| **Religion** | | | | |
| None | 14.3 | 12.5 | 23.9 | 8.3 |
| Catholic | 0 | 0 | 10.9 | 2.1 |
| Protestant | 35.7 | 18.8 | 16.7 | 37.5 |
| Pentecostal | 28.6 | 37.5 | 28.3 | 16.7 |
| Other | 14.3 | 31.3 | 19.6 | 35.4 |

| | | | | |
|---|---|---|---|---|
| **P-value** | **0.375** | | **0.009*** | |
| **Tribe** | | | | |
| Xhosa | 0 | 4.2 | 27.7 | 14.6 |
| Ndebele | 10.7 | 37.5 | 34.0 | 47.9 |
| Lemba | 46.4 | 4.2 | 2.1 | 0 |
| Shona | 39.3 | 41.7 | 4.3 | 20.8 |
| Other | 3.8 | 12.5 | 31.9 | 16.7 |
| **P-value** | **0.000*** | | **0.021*** | |
| **Employment Status** | | | | |
| Employed | 25.0 | 4.2 | 12.8 | 8.9 |
| Not Employed | 75.0 | 95.8 | 87.2 | 91.1 |
| **P-value** | **0.007*** | | **0.184*** | |
| **Average Income** | | | | |
| Income | 400 | 500 | 393 | 106 |
| **P-value** | **N/A** | | **N/A** | |
| **Communication with Parents or guardians** | | | | |
| Very easy | 14.3 | 60.4 | 40.4 | 50.0 |
| Easy | 17.9 | 12.5 | 17.0 | 16.7 |
| Average | 17.9 | 0 | 21.3 | 4.2 |
| Very difficult | 42.9 | 14.6 | 10.6 | 12.5 |
| Difficult | 7.1 | 10.4 | 6.4 | 16.7 |
| Do not see them | 0 | 2.1 | 4.3 | 0 |
| **P-value** | **0.000*** | | **0.068*** | |
| **Discussion of sex-related issues with anyone** | | | | |
| Yes | 60.7 | 50.0 | 48.9 | 54.5 |
| No | 39.3 | 50.0 | 51.1 | 45.5 |
| **P-value** | **0.195*** | | **0.358** | |
| **Source of Sexual Information** | | | | |
| Initiation schools | 0 | 8.5 | 0 | 2.2 |
| School teacher | 38.5 | 46.8 | 0 | 0 |
| Parents/guardians | 0 | 4.3 | 34.1 | 45.7 |
| Siblings | 0 | 2.1 | 4.5 | 8.7 |
| Other family members | 26.9 | 10.6 | 18.2 | 6.5 |
| Friends | 11.5 | 17.0 | 11.4 | 13.0 |
| Health Care Providers | 7.7 | 6.4 | 13.6 | 13.0 |
| Other specify | 15.4 | 4.3 | 6.8 | 8.7 |
| **P-value** | **0.204** | | **0.351** | |
| **Involved in cultural initiation** | | | | |
| Yes | 17.9 | 20.8 | 56.5 | 47.0 |
| No | 82.1 | 79.2 | 43.5 | 53.0 |
| **P-value** | **0.753** | | **0.430** | |
| **Had sex** | | | | |
| Yes | 100.0 | 100.0 | 100.0 | 97.9 |
| No | 0 | 0 | 0 | 2.1 |
| **P-value** | **N/A** | | **0.320** | |
| **Age at First Sexual Encounter** | | | | |

| | | | | |
|---|---|---|---|---|
| <10 years | 0 | 14.3 | 2.1 | 10.4 |
| 10-12 years | 14.3 | 18.8 | 31.9 | 43.8 |
| 13-17 years | 85.7 | 68.8 | 66.0 | 45.8 |
| 18-19 years | 0 | 4.2 | 0 | 0 |
| **P-value** | **0.223** | | **0.075*** | |
| **Methods used for preventing STIs and pregnancy** | | | | |
| Condom | 14.3 | 54.3 | 42.6 | 31.3 |
| Withdrawal | 28.6 | 15.2 | 25.5 | 25.0 |
| Pill | 7.1 | 0 | 0 | 0 |
| Injection | 0 | 0 | 0 | 0 |
| Other | 50.0 | 30.4 | 31.9 | 43.8 |
| **P-value** | **0.003*** | | **0.427** | |
| **Treatment of STIs** | | | | |
| Went to traditional healers/ herbalist | 40.0 | 0 | 48.3 | 20.0 |
| Went to a health facility | 40.0 | 100.0 | 51.7 | 80.0 |
| Did not seek treatment | 12.0 | 0 | 0 | 0 |
| Other specify | 8.0 | 0 | 0 | 0 |
| **P-value** | **0.701** | | **0.117*** | |
| **Pregnant or Impregnated** | | | | |
| Yes | 100.0 | 0 | 100.0 | 0 |
| No | 0 | 100.0 | 0 | 100.0 |
| **P-value** | **0.000*** | | **0.000*** | |
| **Sexual Encounter (s)** | | | | |
| I wanted to have sex | 50.0 | 33.3 | 53.2 | 18.8 |
| My partner wanted us to have sex | 17.9 | 20.8 | 21.3 | 43.8 |
| Neither of us wanted, but it just happened | 14.3 | 31.3 | 17.0 | 14.6 |
| I was culturally obliged to | 14.3 | 0 | 8.5 | 8.3 |
| Other specify | 3.6 | 14.6 | 0 | 14.6 |
| **P-value** | **0.016*** | | **0.001*** | |
| **Taught to have sex** | | | | |
| Yes | 28.6 | 40.4 | 48.9 | 53.6 |
| No | 71.4 | 59.6 | 51.1 | 46.3 |
| **P-value** | **0.435** | | **0.659** | |
| **Source of information** | | | | |
| Cultural initiation | 33.3 | 17.4 | 6.9 | 9.1 |
| Brothers | 11.1 | 17.4 | 3.4 | 24.2 |
| Sisters | 11.1 | 43.5 | 10.3 | 6.1 |
| School curriculum | 33.3 | 17.4 | 55.2 | 51.5 |
| Other specify | 11.1 | 4.3 | 24.1 | 9.1 |

| | | | | |
|---|---|---|---|---|
| **P-value** | **0.166*** | | **0.094*** | |
| **Activities at initiation schools** | | | | |
| Sexual education | 14.3 | 27.5 | 40.0 | 14.0 |
| Circumcision | 28.6 | 20.0 | 12.5 | 11.6 |
| Vaginal modifications | 23.8 | 2.5 | 17.5 | 20.9 |
| Other | 33.3 | 50.0 | 30.0 | 54.5 |
| **P-value** | **0.033*** | | **0.056*** | |
| **Do these activities influence your decision to engage in sexual activities** | | | | |
| Yes | 29.6 | 26.3 | 43.2 | 22.5 |
| No | 70.4 | 73.7 | 56.8 | 77.5 |
| **P-value** | **0.769** | | **0.045*** | |
| **Encountered any challenge** | | | | |
| Yes | 42.9 | 50.0 | 62.5 | 53.0 |
| No | 57.1 | 50.0 | 37.5 | 47.0 |
| **P-value** | **0.723** | | **0.612** | |
| **Health education** | | | | |
| Yes | 82.1 | 54.2 | 53.3 | 44.1 |
| No | 17.9 | 45.8 | 46.7 | 55.9 |
| **P-value** | **0.014*** | | **0.145*** | |
| **Interaction with health service providers** | | | | |
| Through school health services | 86.4 | 70.0 | 48.6 | 46.7 |
| From health facility | 13.6 | 13.3 | 34.3 | 33.3 |
| Through media | 0 | 13.3 | 14.3 | 20.0 |
| Other specify | 4.5 | 3.3 | 2.9 | 0 |
| **P-value** | **0.337** | | **0.756** | |
| **IHS important in shaping sexual health** | | | | |
| Yes | 60.7 | 54.2 | 48.9 | 35.4 |
| No | 39.3 | 45.8 | 51.1 | 64.6 |
| **P-value** | **0.579** | | **0.182*** | |
| **MHS being important in shaping sexual health** | | | | |
| Yes | 67.9 | 83.3 | 66.0 | 57.4 |
| No | 32.1 | 16.7 | 34.0 | 42.6 |
| **P-value** | **0.118*** | | **0.125*** | |
| **Activities at initiation schools** | | | | |
| Sexual education | 11.1 | 27.5 | 40.0 | 14.0 |
| Circumcision | 28.6 | 20.0 | 12.5 | 11.6 |
| Vaginal modifications | 23.8 | 2.5 | 17.5 | 20.9 |
| Other | 33.3 | 50.0 | 30.0 | 53.5 |
| **P-value** | **0.033*** | | **0.056*** | |
| **Do these activities influence your decision to engage in sexual activities** | | | | |
| Yes | 29.6 | 26.3 | 44.2 | 22.5 |
| No | 70.4 | 73.7 | 55.8 | 77.5 |
| **P-value** | **0.769** | | **0.045*** | |
| **Encountered any challenge** | | | | |
| Yes | 10.7 | 13.8 | 12.5 | 8.8 |
| No | 89.3 | 86.2 | 87.5 | 91.2 |
| **P-value** | **0.723** | | **0.612** | |
| **Health education** | | | | |

| | | | | |
|---|---|---|---|---|
| Yes | 82.1 | 54.2 | 68.1 | 59.6 |
| No | 17.9 | 45.8 | 31.9 | 40.4 |
| **P-value** | **0.014*** | | **0.391** | |
| **Interaction with health service providers** | | | | |
| Through school health services | 82.6 | 70.0 | 48.6 | 46.7 |
| From health facility | 13.0 | 13.3 | 34.3 | 33.3 |
| Through media | 0 | 13.3 | 14.3 | 20.0 |
| Other specify | 4.3 | 3.3 | 2.9 | 0 |
| **P-value** | **0.337** | | **0.214** | |
| **IHS important in shaping sexual health** | | | | |
| Yes | 60.7 | 54.2 | 48.9 | 35.4 |
| No | 39.3 | 45.8 | 51.1 | 64.6 |
| **P-value** | **0.579** | | **0.182*** | |
| **MHS being important in shaping sexual health** | | | | |
| Yes | 67.9 | 83.3 | 64.6 | 57.4 |
| No | 32.1 | 16.7 | 33.3 | 42.5 |
| **P-value** | **0.118*** | | **0.396** | |

*Forward selected to build the MLR model.

### 3.4 Multiple Logistic Regression Analysis

#### 3.4.1 Factors influencing the prevalence of STIs

A total of factors were found to influence STIs' prevalence in Mberengwa (Sex of Respondent, Tribe and Sexual Encounter) and Umguza (Pregnant or Impregnated, Sex of Respondent). Respondents from the Lemba tribe were 98 times more likely to suffer from STIs than other tribes. These findings are presented in **Table 5**.

**Table 5:** MLR of factors influencing the prevalence of STIs in Mberengwa and Umguza districts

| Outcome Prevalence of STIs | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Mberengwa | | | Umguza | | |
| | | OR | 95% CI | p-value | OR | 95% CI | p-value |
| **Pregnant or Impregnated** | No | | | | *** | | |
| | Yes | | | | 31.9 | 2.3-451.4 | 0.010* |
| | | | | | | | |
| **Sex of Respondent** | Male | *** | | | *** | | |
| | Female | 3.3 | 1.2-16.4 | 0.041* | 15.2 | 1.9-78.2 | 0.050* |
| | | | | | | | |
| **Tribe** | Xhosa | *** | | | | | |
| | Ndebele | 2.1 | 0.1-56.8 | 0.669 | | | |
| | Lemba | 97.6 | 2.0-4718.7 | 0.021* | | | |
| | Shona | 7.6 | 1.4-157.0 | 0.191 | | | |
| | Other | 1 | | | | | |
| | | | | | | | |
| **Sexual Encounter** | I wanted to have sex | *** | | | | | |
| | My partner wanted us to have sex | 0.8 | 0.1-4.7 | 0.807 | | | |
| | It just happened | 3.2 | 1.4-65.2 | 0.047* | | | |
| | I was culturally obliged to | 1 | | | | | |
| | Other | 1 | | | | | |
| | | | | | | | |

***Comparison Group *Significant results

### 3.4.2 Factors associated with the prevalence of pregnancies or impregnating

A total of five predictors influenced the prevalence of pregnancies and impregnating in these two districts. In Umguza, females were 51 times more likely to fall pregnant than the males impregnating, while in Mberengwa, the females were five times more likely. In Umguza, religion influenced pregnancies; those in Pentecostal churches were eight times more likely to be pregnant or impregnate than those who were not subscribed to any religion. These findings are presented in **Table 6**.

**Table 6:** MLR of factors influencing the prevalence of pregnancies in Mberengwa and Umguza districts

| Outcome pregnancies/impregnated | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Mberengwa | | | Umguza | | |
| | | **OR** | **95% CI** | **p-value** | **OR** | **95% CI** | **p-value** |
| **Gender** | Male | *** | | | *** | | |
| | Female | 4.8 | 1.5-27.9 | 0.031* | 50.7 | 5.7-2790.0 | 0.000* |
| | | | | | | | |
| **Tribe** | Xhosa | *** | | | | | |
| | Ndebele | 2.4 | 2.1-48.3 | 0.045* | | | |
| | Lemba | 1 | | | | | |
| | Shona | 3.2 | 1.8-51.3 | 0.021* | | | |
| | Other | 1 | | | | | |
| | | | | | | | |
| **Sexual Encounter** | I wanted to have sex | *** | | | | | |
| | My partner wanted us to have sex | 1.26 | 0.23-2.5 | 0.082 | | | |
| | It just happened | 2.4 | 1.5-15.3 | 0.041* | | | |
| | I was culturally obliged to | 4.3 | 2.1-45.3 | 0.021* | | | |
| | Other | 1 | | | | | |
| | | | | | | | |
| **Age** | <10 | | | | *** | | |
| | 10-12 | | | | 1 | | |
| | 13-17 | | | | 2.5 | 1.9-22.7 | 0.041* |
| | 18-19 | | | | 1 | | |
| | | | | | | | |
| **Religion** | None | | | | *** | | |
| | Catholic | | | | 1 | | |
| | Protestant | | | | 1.3 | 0.0-56.2 | 0.982 |
| | Pentecostal | | | | 8.2 | 2.3-1492.0 | 0.040* |
| | Other | | | | 0.2 | 0.0-16.2 | 0.470 |
| | | | | | | | |

***Comparison Group *Significant results

### 3.5 Differences in the two districts

#### 3.5.1 Cox Regression-Breslow method of ties

There were significant differences in STIs prevalence, Impregnating, and sexual activity engagement in the two districts. Adolescents in Umguza were 1.25 times more likely to have

STIs, 1.2 times more likely to be pregnant /impregnate, and 1.85 times more likely to engage in sexual activities than those in Mberengwa District. These findings are presented in **Table 7**.

**Table 7:** Differences in STIs prevalence, pregnancy/impregnating, and engagement in sexual activities using the Cox Regression-Breslow method of tie

| **Districts** | **Had STIs n (%)** | **Did not Have STIs n (%)** | **$\chi^2$ p-value** | **Hazard Ratio** | **95% CI** | **P-value** |
|---|---|---|---|---|---|---|
| Mberengwa | 25 (6.8) | 345 (93.2) | | *** | | |
| Umguza | 38 (10.6) | 322 (89.4) | 0.04* | 1.25 | 1.05-2.73 | 0.043* |
| | | | | | | |
| **Districts** | **Pregnant or Impregnated n (%)** | **Did not Impregnate or get pregnant n (%)** | **$\chi^2$ p-value** | **Hazard Ratio** | **95% CI** | **P-value** |
| Mberengwa | 26 (7.0) | 344 (93.0) | | *** | | |
| Umguza | 45 (12.5) | 315 (87.5) | 0.043* | 1.20 | 1.01-1.92 | 0.034 |
| | | | | | | |
| **Districts** | **Had Sex n (%)** | **Did not have Sex n (%)** | **$\chi^2$ p-value** | **Hazard Ratio** | **95% CI** | **P-value** |
| Mberengwa | 75 (20.3) | 295 (79.7) | | *** | | |
| Umguza | 96 (26.7) | 264 (73.3) | 0.038* | 1.85 | 1.04-3.08 | 0.040* |
| | | | | | | |

******* Comparison Group *Significant Result

### 3.5.2 Kaplan-Meier Survival Estimates

#### 3.5.2.1 Engagement in sexual activities

Age at first sex was lower in Umguza as compared to Mberengwa though more adolescents in Mberengwa get involved in these activities around the 16 years and above in huge numbers. The remaining majority get involved at 19 years. These findings are presented in **Fig 2**.

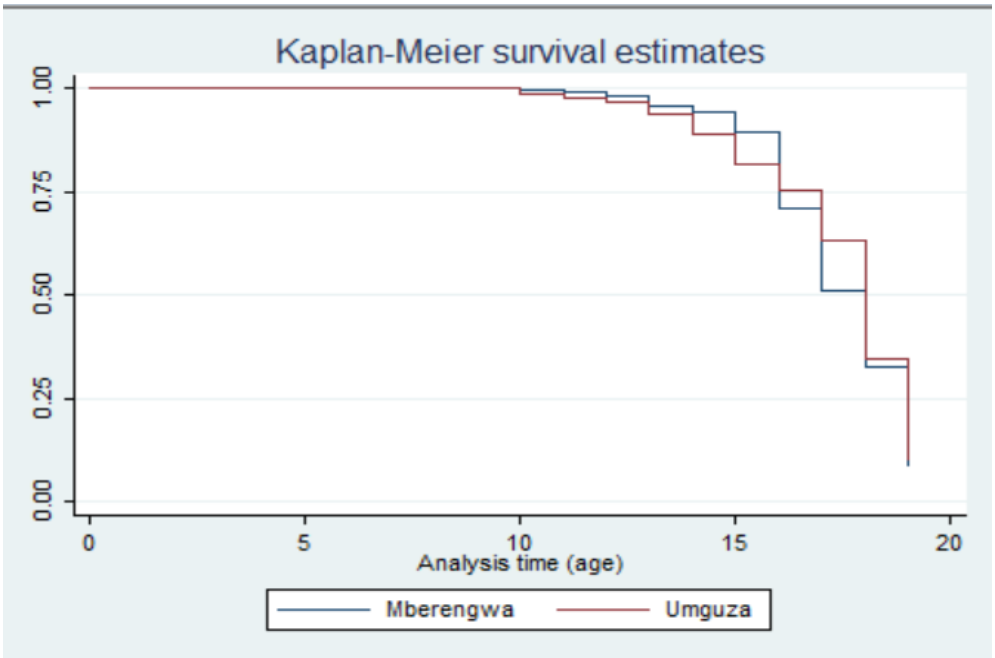


**Fig 2:** Engagement in sexual activities

### 3.5.2.2 Getting pregnant or Impregnating

There is not much difference when comparing ages and pregnancies in the two districts, with the majority peaking towards the 19-year mark. These findings are presented in **Fig 3**.

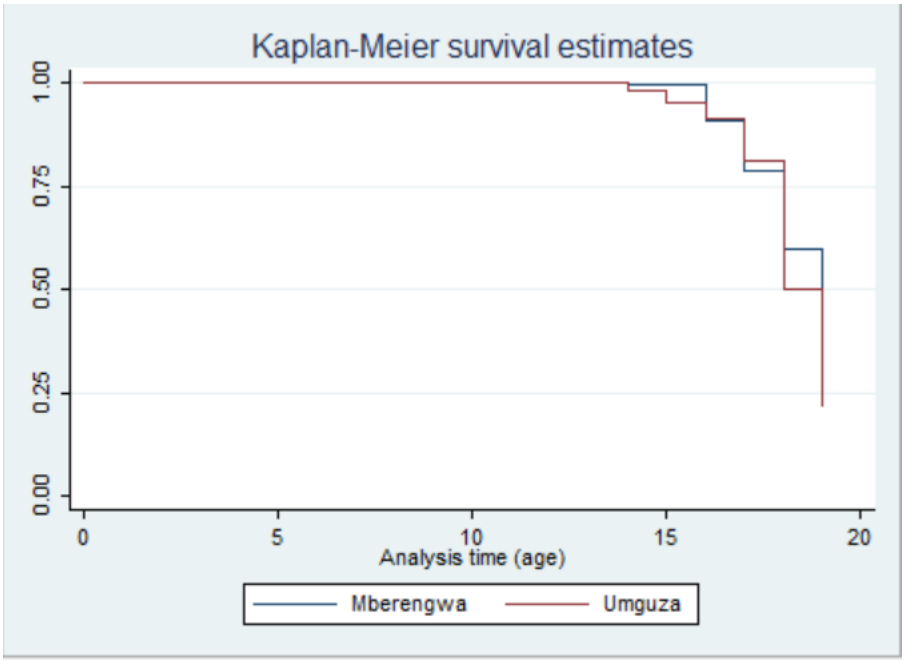


**Fig 3:** Pregnancy Survival Curve

### 3.5.2.3 Prevalence of STIs

STIs at Umguza is detected early (around 13) compared to Mberengwa, where it starts approximately at 15 years. In both the districts, it peaks towards the 19-year mark. These findings are presented in **Fig 4**.

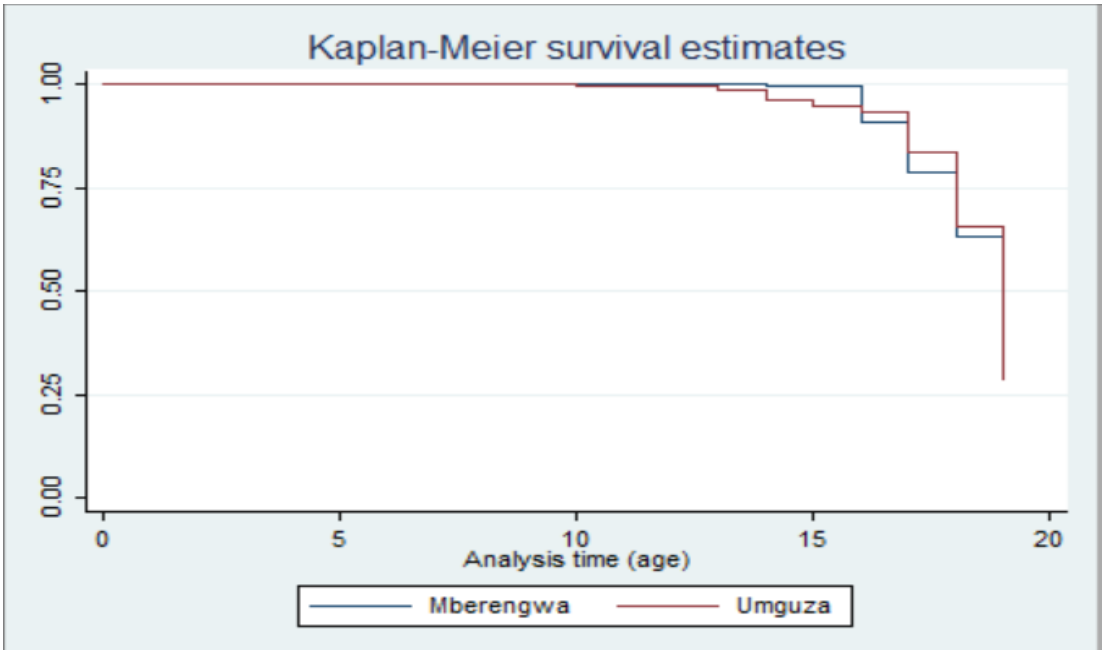


**Fig 4:** STIs Survival Curve

## 4.0 Discussions

The sex of respondents was a significant contributor to engagement in sexual issues, with females engaging in sexual intercourse at an earlier age compared to male adolescents in both districts. The age at first sex in females was lower than that of males. These findings are anchored by different studies that reported similar outcomes and allude that most female adolescents mature at an earlier age compared to their male counterparts and thus usually engage in sexual activities earlier [34, 35]. This also puts them at risk of pregnancies and high STIs prevalence as reported in this study compared to their male counterparts. Studies report that cross-generational sex usually involves young female adolescents and older men compared to young male adolescents and older females [36]. Therefore, this predisposes females to STIs and being pregnant more than male adolescents [36].

Religion was reported to influence the prevalence of pregnancies/impregnating in Umguza compared to Mberengwa, where this variable was not significant. It was observed that respondents attending Pentecostal churches had higher chances of getting pregnant than those who did not attend any church. In Zimbabwe, there is an influx of different Pentecostal churches that have been blamed for poor ethos as they are doctrine to make money from the congregants [37]. Sexual abuse has been reported regarding different members, particularly females, being abused in these churches [38].

Another significant predictor variable was the nature of sexual encounters and the prevalence of STIs and pregnancies /impregnating. Those who were culturally obliged and those who claimed that sex just happened were at a higher risk of being pregnant in Mberengwa than those who claimed that they wanted to have sex. Usually, if sex happens unplanned, the majority of the times, proper precautionary measures such as usage of condoms are forgone as there would in most cases be not available at that time and point [39]. Studies suggest that planned sexual encounters individuals prepare themselves upfront and go to all extents necessary to protect themselves. They would have enough time and opportunity to plan [39]. Adolescents who are culturally obliged to have sex might not have any decision making power, and everything I detected to them by those in that marriage [39]. This, therefore, leads to a scenario that they have no say and would have sex according to how the other dominant spouse prescribes it [40].

It was also observed in the study that the prevalence of STIs, pregnancy/impregnating, and the number of adolescents who had had had sex were higher in Umguza as compared to Mberengwa. One of the potential reason is that in Umguza as a district, a significant number of

parents or guardians migrate to neighbouring countries like Botswana and South Africa as the District is in region five where there are deficient rainfall and farming is not lucrative as compared to Mberengwa which receives a significantly higher amount of rain compared to Umguza [41]. This leaves many homesteads being child-headed and losing control, particularly if the parents and guardians are not consistently sending resources for upkeep [42]. This is also well supported by the findings where a significantly higher proportion of adolescents in Umguza drop out of school because of a lack of resources to pay fees and survive. They are then forced to look for ways to sustain their livelihoods [42].

## 5.0 Conclusions

Adolescents are at risk of contracting STIs and impregnating as they engage in risky sexual behaviours as evidenced by the findings. The two districts have a significantly higher prevalence of having sex than the national average. Therefore, there is a need to craft policies and programs that would promote eliminating these risky sexual behaviours that predispose adolescents to poor SH outcomes.

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# Developing strategies for integrating Indigenous Health and Modern Health Systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe

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See **Appendix 17** for Author Guidelines.

**0.0 Abstract**

***Background:*** Strategies to improve sexual health outcomes have evolved over the years due to technology's evolution to ensure that they are relevant. Challenges have been noticed in different systems that run parallel, particularly in Low-Income Countries where the majority utilise Indigenous Health Systems. Optimisation of resources and minimisation of conflicts could be realised through integrated health systems in the management of adolescents' sexual health issues. This study sought to develop strategies to facilitate Indigenous Health System and Modern Health System integration to improve the management of Adolescent Sexual Health issues, leveraging results from four papers.

***Methods:*** A multi-stage approach was utilised, with Phase one focussing on a preliminary assessment through merging findings from the four papers. The Strengths, Weaknesses, Opportunities, and Threats analyses were then used, followed by the Basic Logic Model to identify critical aspects that need to be taken into account in building the strategies. The second phase used the Build, Overcome, Eliminate, and Minimise framework to build the strategies.

***Results:*** A total of five strategies were proposed to facilitate this integration, and these included revival of committees that were inclusive of all stakeholders; allocating Indigenous Health System space in clinics to work in; establishing adolescent-friendly clinics; intensifying information dissemination on sexual health-related issues; and developing clear Terms of Reference and procedures to govern this integration and ensure it is a success.

***Conclusions:*** Implementing these strategies could facilitate this integration and ensure that programs are planned and implemented in a complementary manner, thereby reducing conflicts between the two systems and ensuring collaborative efforts towards shared goals that would transform to better Sexual Health Outcomes for adolescents.

**Keywords:** Adolescent; Indigenous Health System; Integration; Modern Health System; Sexual Health Outcomes; Strategies; Zimbabwe

## 1.0 Background

Adolescent Sexual Health (ASH) programs have been implemented in different settings worldwide [1-4]. Strategies to improve sexual health (SH) outcomes have evolved over the years due to technology's evolution to ensure that they are relevant [1,4]. Research has also intensified globally to ensure that evidence-based and robust strategies are implemented to address hindrances towards safer sexual practices among adolescents [1]. It is worth noting that developed strategies should consider critical contextual issues prevailing in that specific population to be served [5].

Different country settings have different contextual backgrounds that aid the success or failure of implemented programs [5,6]. Reported factors in literature such as cultural, socio-economic, religious, political, policies, infrastructure, availability of human resources, to mention a few, have been proven to impact on efficiency and effectiveness ASH related issues [7]. Therefore, strategy development to address weaknesses in ASH programs needs to be systematic, logical, and evidence-based to ensure relevant and effective programs are implemented [8].

In Zimbabwe, it is well documented in the 2010-2015 strategy review that there are weaknesses in the Adolescent Sexual and Reproductive Health (ASRH) programs as most do not involve most stakeholders who matter [3,4]. Behaviour Change Communication (BCC) strategies such as the utilisation of media such as radio broadcasts, magazines, social media, and other strategies such as sister2sister counselling and support for the vulnerable adolescent girl child have yielded some positive results [9,10]. However, most of these strategies have yielded positive results in most urban areas with adequate infrastructure to support these initiatives [4,10]. The scenario is different in rural districts that have network challenges to access these information-sharing mediums [11,12]. Since Mberengwa and Umguza Districts are rural, they face similar challenges [12]. Adolescents in these districts rely mainly on available Health Systems (HSs) in the community (that is IHS and MHS) that help shape their sexual behaviours, particularly starting from their homes, schools, clinics, hospitals, traditional healers, and many more key stakeholders having a role to play [11].

Integrating all the HSs involved in ASH issues provides a window of opportunity for better health outcomes as far as ASH outcomes are concerned [13]. No evidence in the literature suggests that efforts have been made to strengthen collaborative efforts between IHS and MHS. Most

emphasis has been on improving the quality of programs that are implemented in the MHS. This has led to fragmented programs that run parallel as the IHS serves a significant population proportion. Therefore, this paper sought to develop strategies to facilitate the integration of IHS and MHS for improved management of ASH issues as stipulated on the study protocol [14]. The development of these strategies would leverage on the empirical evidence of four papers that explored different aspects with regards to ASH and Health Systems [15-18]. The summarised findings of these four papers are presented on **Table 1**.

## 2.0 Methods

The strategy development process would be done in two major phases: the first phase would involve the interrogation of findings from four papers. This would be the preliminary assessment that would merge the results from the four papers and set the second phase's tone. The second phase would leverage on the merged data's interpretation from phase one and develop strategies (though done in stages). This strategy development process would be done in liaison with key stakeholders that are experts in adolescent sexual health, health systems, culture, and policies governing sexual health and human rights. Therefore, the process of development of the strategies would follow a series of steps that are detailed below:

### 2.1 Preliminary Assessment

#### 2.1.1 Merging Data from four papers

This step compared the findings from these four papers side by side to have a comprehensive overview of the state of matters concerning adolescent sexual practices as influenced by the two HSs (i.e., IHS and MHS) [15-18]. This then enabled for a merged output to be generated to get an overview of the merged output to get a glimpse of key facets that needed to be taken into account and addressed in the development of the strategies in a triangulated manner [19, 20]. The **first paper** (tilted Health System Strategies and Adolescent Sexual Health: a systematic review of the literature using Rodgers Concept Analysis Framework, submitted to Elsevier's Journal of Adolescent Health) aimed at reviewing the literature on the relationship between Health System Strategies (HSSs) and ASH issues guided by Rodger's evolutionary concept analysis framework. The study further sought to leverage the findings of this literature review to develop a Conceptual framework (CF) that would guide research on "Development of strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe" [15]. The **second paper** (titled Indigenous Health Systems and Adolescent Sexual Health in Umguza and Mberengwa Districts of Zimbabwe: Community Key

stakeholders' Perspectives submitted to the SAGE's Journal of Health Services Insights) paper explored the roles that are played by the MHS in the management of ASH issues as well as appreciate the ASH trends in the two districts. This paper further challenged HSPs to identify specific IHS factors incorporated into the MHS to improve ASH outcomes. The participants were also further probed on the challenges that were likely to be encountered in integrating IHS into MHS and how best these challenges could be overcome to maximise the benefits of this integration as guided by the study protocol [16]. The **third paper** (titled Health Service Providers' Perspectives on the influence of Modern Health Systems on adolescents' sexual health practices in Umguza and Mberengwa districts of Zimbabwe submitted to the Elsevier's Journal of International Journal of Nursing Studies) sought to explore the roles that are played by the MHS in the management of ASH issues as well as appreciate the ASH trends in the two districts. This paper further challenged HSPs to identify specific IHS factors incorporated into the MHS to improve ASH outcomes. Participants were also further probed on the challenges that were likely to be encountered in integrating IHS into MHS and how best these could be overcome to maximise the benefits of this integration as guided by the research protocol [17]. The **fourth paper** (titled Health Systems Utilisation and adolescent sexual health practices in Umguza and Mberengwa districts in Zimbabwe submitted Elsevier's Journal of Adolescent Health) sought to explore the extent of the influence of IHS and MHS in moulding adolescent sexual behaviours in Mberengwa and Umguza districts. This paper further explored adolescent sexual experiences. It sought to explore their views (adolescents) in whether or not it was essential to integrate these two systems (IHS and MHS) and, if so, how as guided by the study protocol [18].

### 2.1.2 The Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

The SWOT analysis framework was then applied to the merged findings. This framework will help identify the strengths and weaknesses of the currently implemented programs/strategies given different contextual factors in the two HSs (IHS and MHS) as presented in the findings of all the three papers [21-22]. This exploration enabled the determination of potential opportunities available for the possible integration of the two HSs (IHS and MHS) to aide collaborative efforts and enhanced positive outcomes in ASH-related issues. The framework further allowed for determining possible threats that could derail this integration and set the pace for further interrogation using the Basic Logic Model [23]. Therefore the SWOT analysis as a tool allowed for the interrogation of the papers' findings in an integrated manner and enabled

for the comprehensive needs assessments as attained in the two districts in a triangulated manner as the three papers used different approaches [19,20].

### 2.1.3 Application of the Basic Logic Model (BLM)

The findings obtained from the SWOT analysis were further be subjected to scrutiny using the BLM. The BLM is a critical tool that is typically used for evaluating different projects, programs, and processes to determine the key aspects that need to be optimised to ensure that desired goals and objectives are met [24,25]. The BLM has five key aspects that were used to brainstorm on key considerations that have to be taken into account to aid in integrating the two systems (IHS and MHS) [24]. The five critical aspects of this framework that would be considered are shown in **Fig 1** (that is, resources needed to facilitate this integration; activities that would be engaged with; the outputs; short and long term outcomes; and the impact) [24,25]. Exploring these five key critical aspects would enable key issues to be considered. When building the strategies, there is a clear guide of what needs to be achieved and stipulate the indicators and resources needed to achieve that goal [25]. These, therefore, allowed all fundamentals to be considered and explored in a systematic, logical, and comprehensive manner leaving no stone unturned [24]. After exploring these five critical aspects, the actual building of the strategies to ensure that the integration was done was guided by the Build, Overcome, Eliminate, and Minimise (BOEM) model.

## 2.2 Strategy Development

### 2.2.1 Application of the BOEM Model

This model builds strategies that try to aid the attainment of goals and realisation of the impacts of strategies by overcoming, eliminating, and minimising potential factors that could undermine the impact of developed strategies [14]. This model is still new and has not been used much but presents an opportunity for a comprehensive assessment of the status quo and strives to get the best out of the strategies in light of the different contextual factors [14]. The strategies will be crafted, taking into account the preliminary assessment findings where threats are sought to either be overcome, eliminated, or minimised [14,26,27]. The strategies would also seek to leverage the opportunities identified and occupy that opportunity/policy space to aid the integration [26,27]. The built strategies would clarify how this integration would be achieved and detail how the strategies would be implemented.

### 2.2.2 Proposed Strategies

All these processes would be draft strategies presented in this paper and would then be further scrutinised through an independent validation process to determine the feasibility, acceptability, and applicability. As stated in the aim of this paper, the proposed strategies would seek to facilitate the integration of IHS and MHS to improve ASH outcomes. This intended outcome would then be the basis for the validation process.

## 3.0 Results

### 3.1 Merged Results

The findings of this study point out that a significant proportion of adolescents engage in sexual activities and that there is a significant proportion who suffer or have previously suffered from STIs and being pregnant or impregnating. The findings further point out that IHS and MHS programs targeting adolescents run parallel, though, to some extent, there are complementary. There is also room for integration of the two systems (IHS and MHS), as evidenced by the different stakeholders' willingness to work together. These findings are presented in **Table 1.**

**Table 1:** Merging of findings from four papers

| **Findings from First Paper** [15] | **Findings from the second Paper** [16] | **Findings from the third Paper** [17] | **Findings from the Fourth Paper** [18] | **Findings of the Merged Analysis** |
|---|---|---|---|---|
| **Key antecedent factors**<br>✓ Adolescent sexual rights<br>✓ Lack of understanding of what sexual health is<br>✓ Need for Integrated ASH Systems<br>✓ Available Resources<br>✓ Type of society<br>**Key attribute factors**<br>✓ Contextual<br>✓ Dynamic<br>✓ Activism and advocacy<br>✓ Inefficient<br>**Key consequencesfFactors**<br>✓ Weak adolescent programs constrained by different factors<br>✓ Parallel or Fragmented ASH Systems resulting in low impact<br>✓ Vulnerability and | **The role played by stakeholders in ASH related issues**<br>✓ Teaching, discipline, and grooming<br>✓ Upkeep protection and support<br>✓ Treatment of STIs and other conditions<br>**Integrating IHS and MHS**<br>✓ Improvement of management of ASH issues<br>✓ Existing Gaps<br>**Foreseen challenges**<br>✓ Mistrust and Pride<br>✓ Logistics | **Overview of adolescent sexual health issues**<br>✓ Prevalence of STIs<br>✓ Prevalence of Pregnancies<br>✓ Sexual Health-related Complications<br>✓ Poverty<br>**Role of MHS in ASH issues**<br>✓ Education and awareness campaigns<br>✓ Provision of contraceptive products<br>✓ Treatment of STIs<br>✓ Performing and supervising births<br>✓ Performing Medical male Circumcision<br>**Challenges encountered**<br>✓ Shortage of resources<br>✓ Poor health-seeking | **Socio-demographic characteristics of adolescents**<br>✓ More males than Females taking part in the study<br>✓ Literacy levels at 98%<br>✓ Majority aged 13-17yrs<br>✓ 24% had sex<br>✓ The average age at first sex 15yrs<br>✓ Prevalence of STIs 9%<br>✓ Prevalence of pregnancies/ impregnating 10%<br>**Factors influencing the prevalence of STIs in Mberengwa and Umguza districts**<br>✓ Pregnant or Impregnated<br>✓ Sex of Respondent<br>✓ Tribe<br>✓ Sexual Encounter | **Key factors driving ASH programs**<br>✓ There is a need to take into consideration attributes, antecedents and foreseen consequences when developing strategies or implementing ASH programs<br>✓ Different stakeholders have varied contextual roles that they play in ASH related issues<br>✓ Specific factors are associated with specific Sexual patterns in the two districts<br>**Nature of programs implemented by different health systems**<br>✓ The IHS and MHS offer specific services which seem to be complementary and meant to improve ASH related issues<br>✓ Systems and programs run parallel as the current setup does not facilitate collaborative efforts<br>**Sexual health outcomes of adolescents** |

| | | | | |
|---|---|---|---|---|
| heightened risks for poor health outcomes<br>✓ Challenges in interacting with different ethnic groups and gender<br>✓ Improved uptake of sexual health programs<br>✓ Improved adolescent sexual health outcomes<br>**Strategies to overcome barriers to safe sexual practices**<br>✓ Training<br>✓ Providing Sufficient Information on SH<br>✓ Expanding the roles of HSPs to ensure coverage and full utilisation of systems | **Overcoming challenges**<br>✓ Collaborations through establishing committees<br>✓ Aligning programs and respecting stakeholders<br>✓ Referrals<br>✓ Establishing Consultation rooms for indigenous practitioners in health facilities<br>✓ Development of Terms of Reference | behaviour<br>✓ Inadequacy in the training of staff to handle adolescents<br>✓ Non-availability of adolescent-friendly and private facilities<br>✓ Promiscuous behaviours by adolescents<br>✓ The hostility of HSPs towards adolescents<br>**IHS factors that could be factored into MHSs**<br>✓ Circumcision<br>✓ Humanity (Ubuntu)<br>**Strategies to foster the integration of IHS and MHS**<br>✓ Engagement between stakeholders<br>✓ Community cultural gatherings | **Factors associated with the prevalence of pregnancies or impregnating**<br>✓ Sex of Respondent<br>✓ Tribe<br>✓ Sexual Encounter<br>✓ Age<br>✓ Religion<br>**Differences between Mberengwa and Umguza districts**<br>✓ Umguza has a significantly higher prevalence of STIs<br>✓ Umguza has a significantly higher prevalence of pregnancies/ impregnating<br>✓ Umguza has significantly higher proportions of adolescents who had sex<br>✓ Age at first sex lower in Umguza compared to Mberengwa | ✓ A significant proportion of adolescents had suffered from STIs<br>✓ A Significant prevalence of pregnancies/ impregnating<br>✓ Significant proportion engaging in sexual activities<br>**Possibility of Integrating the two systems**<br>✓ From the findings that were obtained, there is a higher probability that the two systems could be integrated as the different stakeholders realise the benefits of collaborative efforts.<br>✓ Challenges that could hinder this integration and ways of overcoming them were suggested<br>✓ Myths, poverty, mistrust, behaviours, beliefs, lack of resources, poor health-seeking behaviours and parallel systems threaten the possible integration<br>✓ Clear Terms of References could facilitate this integration |

### 3.2 The SWOT Analysis Outcome

Basing on the merged findings of this research, Strengths, Weaknesses, Opportunities, and Threats were identified to evaluate what is obtaining in as far as HSs are concerned in Umguza and Mberengwa Districts. These findings are presented in **Table 2.**

**Table 2:** Outcome of SWOT analysis

| **Strengths** | **Weaknesses** |
|---|---|
| ✓ Two systems (IHS and MHS) are recognised in Zimbabwe<br>✓ All play varied yet complementary roles in the management of ASH related issues | ✓ Undefined pathways for collaborative efforts<br>✓ Absence of policy documents stipulating the commentary platforms for the two health systems despite both being recognised |
| **Opportunities** | **Threats** |
| ✓ Willingness to be part of the integrated system by different key stakeholders as evidenced by the findings<br>✓ High literacy rates among different actors, including adolescents | ✓ Mistrust, myths between actors in IHSs and MHSs<br>✓ Poverty<br>✓ Lack of resources<br>✓ Lack of Knowledge |

### 3.3 The BLM Outcome

The BLM applied to the SWOT analysis findings presents key aspects that are needed under the five key areas. There is a need for funding and investment in human resources to ensure the integration of IHS and MHS are kick-started. Furthermore, there is a need for intensive training and awareness campaigns regarding this integrating and extended consultations with key stakeholders to facilitate the uptake of different programs that would foster this integration. The envisaged outputs, short and long-term outcomes, and the impact of this integration are also presented. These findings are shown in **Fig 1**.

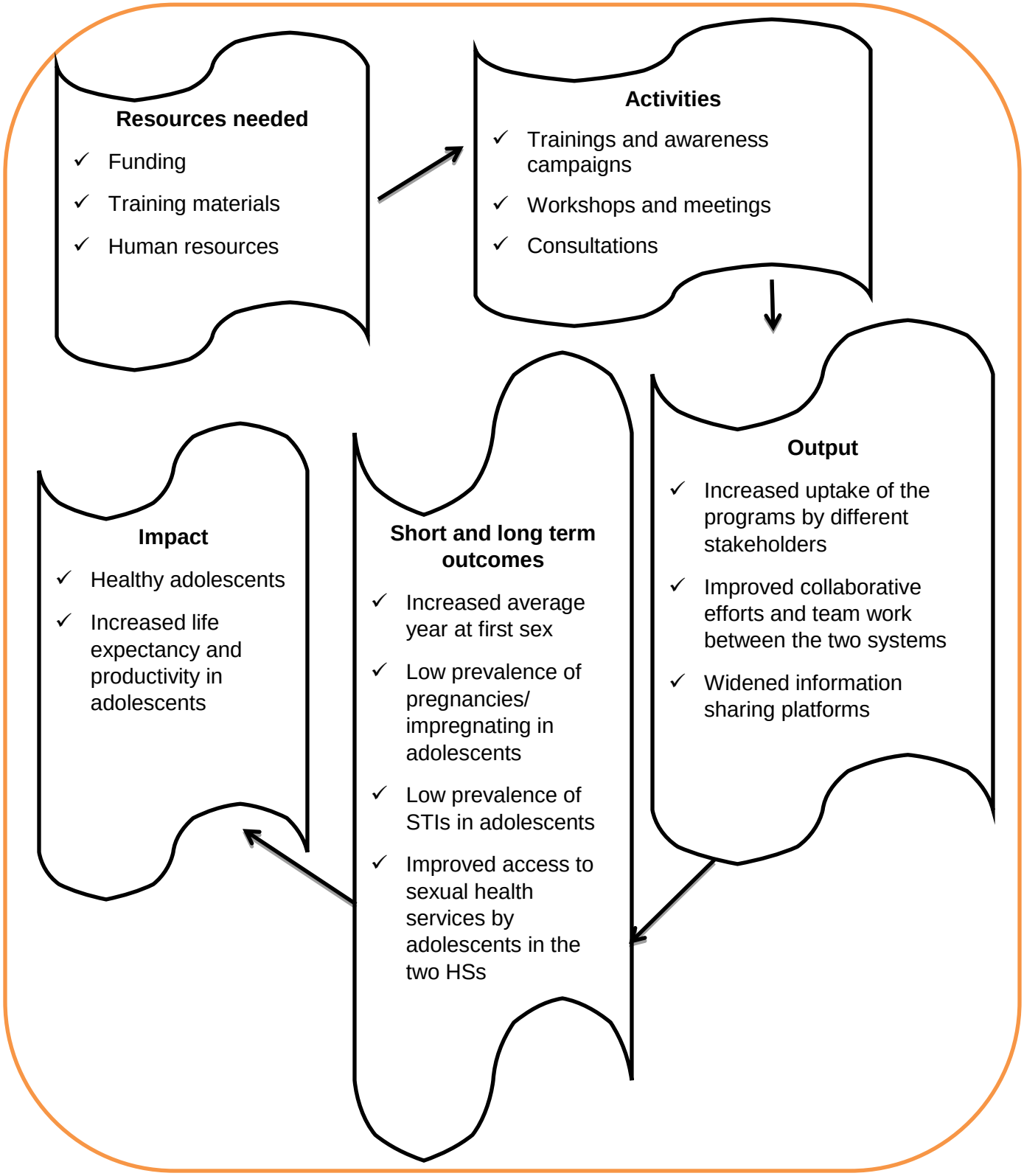


**Fig 1:** The BLM outcome

### 3.4 Building the strategies

#### 3.4.1 The BOEM outcome

The outcome of the BOEM framework alludes that there is a need to develop strategies that overcome mistrust, financial and human resources deficit, barriers to access to SH services by adolescents at the same time eliminating myths, donor dependency while minimising misuse of resources and ensure collaborative efforts between the two HSs. These findings are presented in **Table 3**.

**Table 3:** Outcome of the BOEM analysis

| Build | Overcome | Eliminate | Minimise |
|---|---|---|---|
| A strategy to overcome the parallel operation of stakeholders in ASH issues | ✓ Mistrust | ✓ Myths | ✓ Solo/parallel working approaches and foster teamwork |
| A strategy that mobilises resources for the facilitation of this integration | ✓ Financial and human resources deficit | ✓ Donor dependency of ASH programs | ✓ Misuse of resources to facilitate efficient and effective ways of integrating the two systems |
| A strategy that facilitates access to Sexual Health services by Adolescents in both systems | ✓ Barriers to access to SH services in the two systems | ✓ Unclear procedures for referral between the two systems | ✓ Unfriendliness by different HSPs to enable access to services |
| A strategy that facilitates accurate information dissemination to adolescents and key stakeholders in IHS and MHS regarding sexual health across the two HSs (IHS and MHS) | ✓ Information deficit | ✓ Barriers to access to information | ✓ Sharing of incorrect information regarding ASH related issues |
| A strategy that ensures there are clear Terms of References and procedures of working together between the two systems (IHS and MHS) | ✓ Mistrust | ✓ Unclear platforms for collaboration | ✓ Conflicts |

### 3.4.2 Proposed Strategies

A total of five strategies are proposed to facilitate the integration of these two HSs. These are the revival of committees, allocating IHS space in clinics to work in, establishing adolescent-friendly clinics, intensifying information dissemination on sexual health-related issues, and developing clear Terms of Reference procedures to ensure the government of IHS and MHS as they work together. These proposals are presented in **Table 4**.

**Table 4:** Proposed Strategies

| **Proposed Strategies** | **Goal / Target** | **Indicators** | **Responsible stakeholders** |
|---|---|---|---|
| The revival of Committees with all key stakeholders for the management of adolescent | ✓ Facilitate collaborative efforts between stakeholders<br>✓ Aide information sharing and foster teamwork approach in tackling matters associated with ASH<br>✓ Fundraise for adolescent sexual health-related activities and services | ✓ At least four committee meetings per year<br>✓ The proportion of Stakeholders knowledgeable and involved in the integrated programs<br>✓ Available resources to fund the ASH activities and services | ✓ Health Service Providers, Indigenous Health System Practitioners, Police, Traditional Leadership, NGOs, Parents/Guardians representatives and Researchers |
| Allocating Indigenous Health System practitioners working space in clinics | ✓ Ensure there are collaborative efforts and teamwork<br>✓ Ensure smooth flow in the referral of adolescents between | ✓ The proportion of clinics that would have accommodated Indigenous Health Practitioners | ✓ Ministry of Health and Child Care (MOHCC), HSPs, Traditional Healers, Herbalists, and other relevant key stakeholders |

| | | | |
|---|---|---|---|
| | the two HSs | | |
| Establishing Adolescent Friendly clinics throughout the two Districts | ✓ Improve HSPs and Indigenous Health Practitioners communication skills and relations with adolescents | ✓ The proportion of Adolescents accessing SH services in the two HSs | ✓ Adolescents, MHS and its practitioners, MOHCC, IHS with the different key stakeholders |
| Intensify Sexual Health Information Dissemination | ✓ Improve access to sexual health services and information even through using platforms such as social media and training workshops in the two systems | ✓ The proportion of adolescents who have access to information | ✓ Adolescents, MHS and its practitioners, MOHCC, IHS with the different key stakeholders |
| Provision of Terms of Reference | ✓ Provide a basis for integration and give procedures for collaboration and conflict resolution procedures between the two HSs (IHS and MHS) | ✓ Efficient referral systems<br>✓ Availability of policies to govern the integration | ✓ MOHCC, Donors, NGOs, HSPs, Herbalists, Traditional Attendants, Traditional Healers, Parents as well as other key stakeholders |

## 4.0 Discussions

The merged findings pointed out that a significant proportion of adolescents engaged in sexual activities and that there is a considerable proportion who suffer or have previously suffered from STIs and being pregnant or impregnating. It was reported in the literature that the prevalence of STIs and pregnancies or impregnating of adolescents in these two districts was significantly higher than other districts [2,4,14,28]. Though the prevalence was lower than what was reported in 2013 in a study conducted by Moyo (2013), these prevalence rates still cause concern, thereby needing robust strategies to address these problems [28]. Different stakeholders cited several challenges, one of them being the element of mistrust between the two health systems. The literature has reported that it is quite a challenge to integrate different systems underpinned by different belief systems [29-31]. There is, therefore, a need to first try and identify common grounds for collaborative activities by identifying similar goals and targets of the different systems [29,31].

The merged analysis outcome revealed that that IHS and MHS programs targeting adolescents run parallel, though, to some extent, there are complementary. The majority of the time, different systems have different objectives and different ways of achieving them [29]. Therefore, in planning, there is a need to consider all contextual factors that drive that particular HS and ensure that opportunities are identified from that point of view to foster the successful integration of the two systems to achieve collective objectives. Furthermore, results from the merged analysis symbolised that there is room for integration of the two systems (IHS and MHS) as evidenced by the different stakeholders' willingness to work together. The majority of the time, various stakeholders work in a solo fashion due to a lack of understanding of what the other systems aim to achieve. Such scenarios bring in the element of different systems undermining each other and running in parallel, yet they are working towards achieving similar goals and objectives [32].

The SWOT analysis revealed (as a strength) that the two systems are both recognised in Zimbabwe as major drivers of health service delivery to the populace. This is a strength as there is no need first to legalise the HSs rather, the focus is to identify the platforms they could collaborate through and be merged to attain acceptable outcomes as far as ASH is concerned [33]. The potential threats identified, mistrust, myths between actors in IHSs and MHSs, poverty, lack of resources, and lack of knowledge between the different stakeholders as there were no clear terms of reference despite the two HSs being legally recognised in Zimbabwe. It is reported in the literature that several stakeholders who are Christians always associate the IHS

with evil spirits and witchcraft [34-36]. There is always the mistrust and parallelism of systems as the two systems do not share the same values though sometimes they have similar and even complementary goals [36].

Therefore, the BLM was leveraging on the SWOT analysis to brainstorm on the key issues that needed to be taken into account to ensure that developed strategies would facilitate the integration of the two systems. Some of the key highlights are to ensure that there are sufficient financial and human resources to conduct training and awareness campaigns and extended consultations to operationalise the ideas. The integration process has to be undertaken so that the intended outcomes of such integrations are clear and well understood by the different stakeholders involved in that program [29].

Therefore, the developed strategies were meant to generate some resources and improve access of adolescents to SH services and activities. In Sub Saharan Africa (SSA), some of the reported barriers to accessing to health services are lack of resources, lack of knowledge, lack of training, and parallel health systems [37]. The developed strategies would bridge this gap and ensure that adolescents have improved access to health services. The development of clear Terms of References would ensure that the aspects and platforms for this integration are laid out, and critical stakeholders know precisely how they are expected to conduct themselves [29]. Stipulated policies minimise conflicts and provide for clear frameworks for collaboration and define conflict resolution procedures, primarily where common goals are being pursued using different methods [38].

## 5.0 Conclusions

It can be concluded that the findings of this study justified the need for the integration of the two HSs as the different stakeholders showed a willingness to be part of the integrated HS. However, there is a need to overcome threats such as mistrust, myths, poverty, and lack of resources, as these have the potential to derail the integration of these two HSs. It also emerged that there is a need to have a developed Terms of Reference that would govern all stakeholders and ensure the common goal is pushed forward.

## 6.0 Declarations

### 6.1 Ethical Approval

This paper was part of the PhD studies that were conducted at the University of Venda. Ethical clearance was sought from the University of Venda's Ethics Clearance Committee (Ethics Number: SHS/19/PH/17/2608) and the Medical Research Council of Zimbabwe (Ethics Clearance number: MRCZ/A/2611).

### 6.2 Consent for publication

Not Applicable

### 6.3 Availability of data and material

Not Applicable

### 6.4 Competing Interests

The authors declare that they have no competing interests.

### 6.5 Funding

The research was funded by the National University of Science and Technology under the Staff Development Programme. The funder paid for tuition fees related to these PhD studies. The funder also provided resources to cover data analysis. Researchers wrote and submitted six-monthly reports to appraise the funder of progress. The funder's role was to provide resources to carry out this research successfully.

### 6.6 Authors' Contributions

WNN is a PhD in Public Health student at the University of Venda. The author conceptualised the protocol as partial fulfilment of the requirements of the PhD requirements. LM is the Promoter, while JTM and RTL are Co-Promoters and the three contributed by guiding the study in conceptualising the research idea, carrying out the paper's research and preparation. All authors read and approved the final paper.

### 6.7 Acknowledgements

Not Applicable

### 6.8 Authors' Information

WNN is a PhD in Public Health student at the University of Venda in South Africa and is also a Lecturer in the Department of Environmental Science at the National University of Science and Technology in Bulawayo, Zimbabwe. LM is an Associate Professor and JTM is a Senior

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### 6.9 Abbreviations

| | |
|---|---|
| ASH | Adolescent Sexual Health |
| ASRH | Adolescent Sexual and Reproductive Health |
| BCC | Behaviour Change Communication |
| BLM | Basic Logic Model |
| BOEM | Build, Overcome, Eliminate and Minimise |
| HSPs | Health Service Providers |
| HSs | Health Systems |
| IHS | Indigenous Health System |
| MHS | Modern Health Systems |
| SH | Sexual Health |
| SSA | Sub Saharan Africa |
| SWOT | Strength, Weakness, Opportunities and Threats |

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# Validating developed strategies for integrating Indigenous Health and Modern Health systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe

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See **Appendix 17** for Author Guidelines.

**0.0 Abstract**

***Background:*** Adolescent Sexual Health strategies developed and implemented in different country settings need to be contextualised through validation to align with the populace's needs. This study sought to validate developed strategies meant to facilitate the integration of Indigenous Health System and Modern Health System for improved Adolescent Sexual Health outcomes.

***Methods:*** The Delphi Technique was used to validate the strategies by recruiting fifteen experts in Indigenous Health systems, Health Systems and Policies, Adolescent Sexual Health and Program, Guideline, and Strategy Development to evaluate the developed strategies and assess their feasibility. Furthermore, 100 key stakeholders in Umguza and Mberengwa responded to a semi-structured checklist to express their opinions on the developed strategies, and their feedback used to refine the strategies.

***Results:*** Experts suggested minor changes to one strategy, and agreed with the other four strategies. The majority of key stakeholders (97%) endorsed the proposed strategies. The strategies were, therefore, refined and presented as per the suggestions of these consulted actors.

***Conclusions:*** It is therefore imperative that these strategies be piloted and implemented in the two districts and the progress monitored and evaluated. If they are yielding positive results in as far as Adolescent Sexual health-related issues are concerned, implementation must be expanded and rolled out in other districts that have a similar setup.

**Keywords:** Adolescents; Indigenous Health Systems; Integration; Modern Health Systems; Sexual Health; Strategies; Validation; Zimbabwe

## 1.0 Background

Adolescent Sexual Health (ASH) strategies developed and implemented in different country settings need to be contextualised to the populace's needs [1]. Strategies usually fail to attain the intended and desired outcomes if they are divorced from the populace's expectations that it intends to serve [2]. Involving key actors in strategy development ensures that robust, appropriate, and acceptable strategies are developed and implemented to achieve the desired outcomes [3,4]. Therefore, developed strategies should rely on evidence specific to the areas targeted for implementation [5].

In line with SDGs Number 3 (Good Health and Wellbeing) and Goal number 10 (Reduced inequality), it is imperative to ensure that the rural populaces in Mberengwa and Umguza districts also enjoy quality care and reduce inequities in access to ASH services. The strategy validation process creates an opportunity to refine and improve developed strategies such that they make the intended impacts once implemented [6]. The validation process aims to assess the validity and reliability of these strategies in attaining intended outcomes in ASH issues if they are to be implemented [1]. Strategies to facilitate safe sexual practices in adolescents through integrated Health Systems (HSs) were developed that were developed in another paper as guided by the research have to be subjected to the validation process to determine their suitability, accessibility, and sustainability in as far as the key stakeholders and experts are concerned [7].

The strategy validation process is key in contextualising developed strategies and getting feedback back on whether or not the proposed strategies are appropriate in addressing the key aspects of a program and ensuring that the strategies do not violate the key stakeholders' beliefs [8]. Different communities have varied value systems and different contextual factors that influence their willingness to adopt and implement strategies [9,10]. There is, therefore, need for careful consideration and involvement of all key stakeholders so that their concerns or input is taken into consideration during this planning stage and necessary adjustments made to come up with strategies that are going to be efficient and acceptable at the same time being effective and achieve the desired goals and objectives [10,11]. Involving key stakeholders makes them part of the change process, thus owning the developed strategies and actively lobby for their implementation and playing active roles during implementation and monitoring [12]. This study, therefore, sought to validate developed strategies to facilitate the integration of Indigenous

health System (IHS) and Modern Health System (MHS) for improved ASH outcomes as guided by the study protocol [7].

## 2.0 Methods

The strategy validation involved two major steps to ensure the validation process is as comprehensive as possible. The first part involved the Delphi Technique, and the second recruited key informants, and stakeholder consultations were done. These key areas are discussed in-depth below:

### 2.1 The Delphi Technique

A total of 15 experts specialising in Indigenous Health systems, Health Systems and Policies, Adolescent Sexual Health and Program, Monitoring and Evaluation Experts, Guideline and Strategy Development were engaged to review the developed strategies benchmarking it with the objectives they are meant to achieve. Experts were given a week to review the strategies and make notes or comments. A discussion workshop was then set on the ZOOM online platform, where the researcher facilitated some discussions and notes taken to refine the strategies. The workshop was a two-day workshop with two sessions per day for two days. Each session lasted a maximum of two and a half hours. Feedback was consolidated and used to refine the strategies. The Delphi Technique is an interrogation process that allows for decisions to be made by consultation of experts in the field of interest [13-15]. It allows for carried yet constructive contributions to be made [13]. It collects opinions of different experts on a subject of interest and premises that pooled intelligence enhances individual judgment and captures the collective opinion of a group of experts, thus enhancing the quality of output [14]. This technique enables the interrogation of softer skills and tries and understands how the different combinations come into play in fostering an outcome of interests while ensuring that participants reflect on their contributions and interrogate their thought processes [15,16].

There was identifying the key common areas as presented by the experts, and then there was comparison and ranking of these aspects and prioritisation that enable the key facts presented to be noted [13,15,16]. Therefore, this technique was critical in benchmarking the proposed strategies and evaluating them in a manner that interrogates whether or not they are capable of bringing about the intended integration of the health systems (MHS and IHS) [15,16]. Therefore, the participants were allowed to debate and deliberate and agree on the key issues that needed to be altered, enhanced, or replaced on the proposed strategies that were presented to them. The findings are going to be presented thematically.

### 2.2 Key Stakeholder Consultations

The second part involved consultations with key community stakeholders in Umguza and Mberengwa District. Traditional Leaders, Healers, Herbalists, parents/ guardians, adolescents, and Health Service Providers were selected. Stratified Random Sampling was used to ensure that all the stakeholder groups were represented. A total of 100 participants were recruited (i.e., 50 from Umguza and 50 from Mberengwa) to participate in the strategies review. Firstly the participants were introduced to the proposed strategies and made aware that their critique and input was key in ensuring that sound strategies for this integration were developed. Furthermore, after the appraisal of the proposed strategies, the key stakeholders completed the semi-structured checklist that sought to solicit their views regarding the proposed strategies. The checklist is appended to this dissertation as **Appendix 14**. The completed checklists were then captured on Excel and imported to STATA Version 13 SE for analysis. Proportions were computed, brief explanations given analysed, and suggestions taken into account to further refine the strategies. The refined strategies (ready for implementation) are then presented as the final output of this paper. It is imperative to get the views of the key stakeholders that are directly or indirectly affected by the developed strategies to ensure the developed strategies are acceptable, appropriate as well as sustainable, taking into consideration the different roles that would be played by the different stakeholders and the different contextual settings they are confronted with [17,18].

## 3.0 Results

### 3.1 Proposed Strategies to be validated

Five proposed strategies were subjected to the validation process described above. These strategies included allocating Indigenous Health Practitioners (IHPs) space to work from in the health facilities in Umguza and Mberengwa Districts. These strategies are presented in **Table 1.**

**Table 1:** Proposed strategies to facilitate the integration of IHS and MHS

| **Proposed Strategies** | **Goal / Target** | **Indicators** | **Responsible stakeholders** |
|---|---|---|---|
| The revival of Committees with all key stakeholders for the management of adolescent | ✓ Facilitate collaborative efforts between stakeholders<br>✓ Aide information sharing and foster teamwork approach in tackling matters associated with ASH<br>✓ Fundraise for adolescent sexual health-related activities and services | ✓ At least four committee meetings per year<br>✓ The proportion of Stakeholders knowledgeable and involved in the integrated programs<br>✓ Available resources to fund the ASH activities and services | ✓ Health Service Providers, Indigenous Health System Practitioners, Police, Traditional Leadership, NGOs, Parents/Guardians representatives and Researchers |
| Allocating Indigenous Health System practitioners working space in clinics | ✓ Ensure there are collaborative efforts and teamwork<br>✓ Ensure smooth flow in the referral of adolescents between the two HSs | ✓ The proportion of clinics that would have accommodated Indigenous Health Practitioners | ✓ Ministry of Health and Child Care (MOHCC), HSPs, Traditional Healers, Herbalists, and other relevant key stakeholders |

| | | | |
|---|---|---|---|
| Establishing Adolescent Friendly clinics throughout the two Districts | ✓ Improve HSPs and Indigenous Health Practitioners communication skills and relations with adolescents | ✓ The proportion of Adolescents accessing SH services in the two HSs | ✓ Adolescents, MHS and its practitioners, MOHCC, IHS with the different key stakeholders |
| Intensify Sexual Health Information Dissemination | ✓ Improve access to sexual health services and information even through using platforms such as social media and training workshops in the two systems | ✓ The proportion of adolescents who have access to information | ✓ Adolescents, MHS and its practitioners, MOHCC, IHS with the different key stakeholders |
| Provision of Terms of Reference | ✓ Provide a basis for integration and give procedures for collaboration and conflict resolution procedures between the two HSs (IHS and MHS) | ✓ Efficient referral systems<br>✓ Availability of policies to govern the integration | ✓ MOHCC, Donors, NGOs, HSPs, Herbalists, Traditional Attendants, Traditional Healers, Parents as well as other key stakeholders |

### 3.2 The outcome of the Delphi Technique consultations

Fifteen experts participated in these consultations, and their expertise was distributed as captured in **Table 2.** These experts were drawn from different fields that need to be taken into account to successfully integrate the IHS and the MHS as far as ASH is concerned.

**Table 2:** Participants in the Delphi Consultations

| **Participants** | **Number** |
|---|---|
| Health Systems Specialists | 3 |
| Health Policy Specialists | 2 |
| Adolescent Sexual Health Specialists | 3 |
| Program Guideline and Strategy developers | 4 |
| Monitoring and Evaluation Experts | 3 |
| **TOTAL** | **15** |

The participants' opinions were captured collectively after deliberations regarding the five proposed strategies as detailed in the subsections that follow.

#### 3.2.1 The revival of Committees with all key stakeholders for the management of adolescent

Participants felt that this strategy could assist in the integration process. However, participants noted that there would be a need to carefully consider (at implementation) the committee members' composition and ensure that it is as inclusive as possible to ensure its efficiency and effectiveness. It was further noted that there is a need to make sure the committee selection process would ensure information exchange between the two HSs with regards to ASH related issues.

#### 3.2.2 Allocating Indigenous Health System practitioners working space in clinics

Participants generally felt that this proposed strategy would enable working together of different practitioners from the two HSs and ensure ease of referrals between the two systems, thus facilitating their integration.

### 3.2.3 Establishing Adolescent Friendly Clinics throughout the two Districts

Participants felt that this strategy should be rephrased to read "Establishing Adolescent Friendly Health Systems throughout the two districts." Participants felt only focussing on clinics would excluding other Health Systems that also play an important role in ensuring adolescents have access to ASH-related services, and thus, if not included in these strategies, would derail the potential of this possible integration of the HSs.

### 3.2.4 Intensify Sexual Health Information Dissemination

Participants supported this strategy as one of the vehicles to facilitate integration. The general feeling was that this would help ensure different stakeholders both in IHS and MHS share information and are also given sufficient information to establish a level of understanding of how they will complement each other. Participants felt that this would create a conducive environment for integrating the two HSs and minimising the chances of potential conflicts.

### 3.2.5 Provision of Terms of Reference

Participants cited that clear provision of Terms of Reference that would govern the integration is key, and they concurred that this proposed strategy is very valuable in fostering the integration. The majority of these participants also felt that having clear Terms of Reference would make it easier to monitor and evaluate the progress of implementing other strategies to facilitate integrating the two Health Systems at any stage. They also felt that this would provide a basis and a framework for this integration.

## 3.3 Outcomes of Key stakeholder Consultations

A total of one hundred key stakeholders participated in the validation process of the proposed strategies.

### 3.3.1 Overall Judgement of Strategy by key stakeholders

Respondents were asked to rate the proposed strategies on a scale of 1-10 in light of whether they will facilitate integrating the two Health systems (IHS and MHS). The majority of the respondents cited that these strategies were in line with their expectations. These findings are presented in **Table 3**.

**Table 3:** Overall Judgement of Strategy by key stakeholders

| | Overall Judgement | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Score** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| **Freq (%)** | | | 1 | 2 | | | 2 | 29 | 41 | 25 |

### 3.3.2 Detailed outcome of key stakeholder consultations

Generally, most respondents felt the strategies were appropriate and would facilitate integrating the IHS and the MHS. Some, however, had reservations particularly on ensuring that Health systems are adolescent-friendly, meaning adolescents could access services at any given point, even at some point, without the consent of their parents or legal guardian. These findings are presented in **Table 4**.

**Table 4:** Outcome of the key stakeholder consultations regarding developed strategies (n=100)

| **Progress Toward Result Quality Criteria** | | **Yes** | **No** | **Missing or No Response** | **Comments or revisions to be made** |
|---|---|---|---|---|---|
| 1 | Do you think the strategies present credible outputs, outcomes and impacts? | 97 | 03 | | |
| 2 | Do you think the strategies are in line with your values and beliefs, if not what do you think needs to be incorporated or changed | 93 | 03 | 04 | Some Traditional Health Practitioners felt they might not be able to leave their places where they work from and go and work from the clinic facilities as they felt that their ancestors do not give those, therefore, they will not be able to discharge their duties to the best of their abilities. |
| 3 | Do you think the proposed activities would facilitate the integration of IHS and MHS | 96 | 04 | | |
| 4 | The proposed intervention strategies are appropriate for adolescents? If not, what do you think needs to be changed? | 78 | 18 | 02 | Some were citing that if HSs are made to be adolescent-friendly, this will promote promiscuous behaviour in adolescents and lead to a lack of accountability and authorisation by parents of which services they should access and which ones they should not access. |
| 5 | The proposed duration of the implementation of strategies appropriate to adolescents and you as a key | 80 | 11 | 09 | Some respondents were not sure whether this integration would kick off well as a lifetime investment. Therefore some were not sure whether or not the issue of time frame |

| | | | | | |
|---|---|---|---|---|---|
| | stakeholder | | | | played a role. |
| 6 | Outcomes reflect reasonable, progressive steps that adolescents can make toward longer-term results | 91 | 09 | | |
| 7 | Outcomes address awareness, attitudes, perceptions, knowledge, skills and/or behaviour of adolescents | 96 | 04 | | |
| 9 | It seems fair or reasonable to hold the program accountable for the outcomes specified | 91 | 09 | | |
| 10 | The outcomes are specific, measurable, action-oriented, realistic and timed | 96 | 04 | | |
| 11 | The outcomes are written as change statements (for example things increase, decrease, or stay the same). | 78 | 22 | | |
| 12 | The outcomes are achievable within the proposed budgets and reporting periods specified. | 92 | 08 | | |
| 13 | The impact, as specified, is not beyond the scope of the strategies to achieve | 92 | 08 | | |

### 3.4 Refined Strategies

Considering the outcome of the validation process, there was a minor adjustment on the third strategy that read "Establishing Adolescent Friendly Clinics throughout the two Districts" to "Establishing Adolescent Friendly Health Systems throughout the two Districts. The refined strategies are presented in **Table 5.**

**Table 5:** Refined strategies for implementation

| Refined Strategies | Goal / Target | Indicators | Responsible stakeholders |
|---|---|---|---|
| The revival of Committees with all key stakeholders for the management of adolescent | ✓ Facilitate collaborative efforts between stakeholders<br>✓ Aide information sharing and foster teamwork approach in tackling matters associated with ASH<br>✓ Fundraise for adolescent sexual health-related activities and services | ✓ At least four committee meetings per year<br>✓ The proportion of Stakeholders knowledgeable and involved in the integrated programs<br>✓ Available resources to fund the ASH activities and services | ✓ Health Service Providers, Indigenous Health System Practitioners, Police, Traditional Leadership, NGOs, Parents/Guardians representatives and Researchers |
| Allocating IHS practitioners working space in clinics | ✓ Ensure there are collaborative efforts and teamwork<br>✓ Ensure smooth flow in the referral of adolescents between the two HSs | ✓ The proportion of clinics that would have accommodated Indigenous Health Practitioners | ✓ Ministry of Health and Child Care (MOHCC), HSPs, Traditional Healers, Herbalists, and other relevant key stakeholders |
| Establishing Adolescent Friendly | ✓ Improve HSPs and Indigenous Health | ✓ The proportion of Adolescents | ✓ Adolescents, MHS and its practitioners, |

| | | | |
|---|---|---|---|
| Health Systems throughout the two Districts | Practitioners communication skills and relations with adolescents | accessing SH services in the two HSs | MOHCC, IHS with the different key stakeholders |
| Intensify Sexual Health Information Dissemination | ✓ Improve access to sexual health services and information even through using platforms such as social media and training workshops in the two systems | ✓ The proportion of adolescents who have access to information | ✓ Adolescents, MHS and its practitioners, MOHCC, IHS with the different key stakeholders |
| Provision of Terms of Reference | ✓ Provide a basis for integration and give procedures for collaboration and conflict resolution procedures between the two HSs (IHS and MHS) | ✓ Efficient referral systems<br>✓ Availability of policies to govern the integration | ✓ MOHCC, Donors, NGOs, HSPs, Herbalists, Traditional Attendants, Traditional Healers, Parents as well as other key stakeholders |

## 4.0 Discussions

The Delphi Technique outcome did not result in major changes to the proposed strategies as some of the experts (not necessarily those that were part of the validation process) were consulted during the strategy development. Expert consultations have been key in strategy development as their guidance and varied input that has to be interrogated [19].

The key community stakeholder consultations also yielded positive results, with the majority feeling the strategies could facilitate this integration and yield positive results in as far as ASH related issues are concerned. Involving key stakeholders ensures that the contextual factors over and above content-related factors addressed by the proposed s considered to ensure sustainability, relevance, and acceptability of the proposed strategies within the community setup [19]. These strategies were developed and validated, considering different factors as explored guided by the research protocol. Contextualised and validated strategies are bound to be accepted by the actors concerned and thus increase their chances of implementing and yielding intended outcomes [20].

## 5.0 Conclusions

The proposed strategies were relevant and stood better chances of facilitating the integration of Indigenous and Modern Health Systems. The majority of the key stakeholders and experts were in agreement with the proposed strategies. Therefore, these strategies must be rolled out and implemented in the two districts and monitored and evaluated. In case they are yielding positive results, they expanded to other districts with a similar setup.

## 6.0 Declarations

### 6.1 Ethical Approval

This paper was part of the PhD studies that were conducted at the University of Venda. Ethical clearance was sought from the University of Venda's Ethics Clearance Committee (Ethics Number: SHS/19/PH/17/2608) and the Medical Research Council of Zimbabwe (Ethics Clearance number: MRCZ/A/2611).

### 6.2 Consent for publication

Not Applicable

### 6.3 Availability of data and material

Not Applicable

### 6.4 Competing Interests

The authors declare that they have no competing interests.

### 6.5 Funding

The research was funded by the National University of Science and Technology under the Staff Development Programme. The funder paid for tuition fees related to these PhD studies. The funder also provided resources to cover data analysis. Researchers wrote and submitted six-monthly reports to appraise the funder of progress. The funder's role was to provide resources to carry out this research successfully.

### 6.6 Authors' Contributions

WNN is a PhD in Public Health student at the University of Venda. The author conceptualised the protocol as partial fulfilment of the requirements of the PhD requirements. LM is the Promoter, while JTM and RTL are Co-Promoters who contributed by guiding the PhD student in conceptualising the research idea, carrying out the research and preparation of the paper. All authors read and approved the final paper.

### 6.7 Acknowledgements

All individuals who participated in this strategy validation process.

### 6.8 Authors' Information

WNN is a PhD in Public Health student at the University of Venda in South Africa and is also a Lecturer in the Department of Environmental Science at National University of Science and Technology in Bulawayo Zimbabwe. LM is an Associate Professor and JTM is a Senior Lecturer in the Department of Public Health under the School of Health Sciences at the University of Venda in Thohoyandou in South Africa. RTL is a Research Professor at the School of Health Sciences at the University of Venda in Thohoyandou in South Africa.

## 6.9 Abbreviations

| | |
|---|---|
| ASH | Adolescent Sexual Health |
| HSs | Health Systems |
| IHPs | Indigenous Health Practitioners |
| IHS | Indigenous Health System |
| MHS | Modern Health Systems |
| SDG | Sustainable Development Goal |

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# Section C: **Conclusions, Recommendation, and Study Limitations**

# Conclusions

**Paper Two:** ***Health System Strategies and Adolescent Sexual Health: a systematic review of the literature using Rodgers Concept Analysis Framework*****: Conclusion**

Adolescents are very vulnerable and need to be protected at all costs. Different contextual factors influence different policy changes, and the consequences are mixed, both positive and negative. There is a need to have comprehensive HSSs that would positively impact ASH through proposed comprehensive and integrated systems. Comprehensive HSSs would reduce their vulnerability and ensure they access HSs and utilise them in a manner that would improve their SH outcomes. Providing training, information sharing, and integrating ASH systems is critical in achieving and enhancing desired ASH outcomes.

**Paper Three:** ***Indigenous Health Systems and Adolescent Sexual Health in Umguza and Mberengwa Districts of Zimbabwe: Community Key Stakeholders' perspectives*****: Conclusion**

There is a window of opportunity to pursue the suggested ways of integrating IHS and MHS for improved ASH outcomes. However, the tasks would need careful consideration of factors that could hinder this activity. IHS has been receiving growing attention by being accessible to the general populace, including adolescents. Therefore, this system plays a significant role in the upbringing of adolescents and the management of ASH related issues. There is, therefore need to refine the suggested strategies further and brainstorm further on how these could be used to integrate IHS and MHS for the benefit of adolescents.

**Paper Four:** ***Health Service Providers' Perspectives on the influence of Modern Health Systems on adolescents' sexual health practices in Umguza and Mberengwa districts of Zimbabwe*****: Conclusion**

It can be concluded that HSPs play an essential role in shaping and providing ASH services utilised by adolescents despite challenges that have reduced demand for these services. Therefore, it is pertinent to note that there is a need for collaborative efforts between HIS and MHS such that there are complementary efforts rather than parallel efforts that could be detrimental in addressing ASH issues. There is, therefore, a need to point out that there is a window of opportunity to foster collaboration between these two systems as they strive to serve the adolescents to the best of their ability though in different contextual settings.

**Paper Five: *Health Systems Utilisation and adolescent sexual health practices in Umguza and Mberengwa districts in Zimbabwe*: Conclusion**

Adolescents are at risk of contracting STIs and impregnating as they engage in risky sexual behaviours as evidenced by the findings. The two districts have a significantly higher prevalence of having sex than the national average. Therefore, there is a need to craft policies and programs that would promote eliminating these risky sexual behaviours that predispose adolescents to poor SH outcomes.

**Paper Six: *Developing strategies for integrating Indigenous Health and Modern Health Systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe*: Conclusion**

It can be concluded that the findings of this study justified the need for the integration of the two HSs as the different stakeholders showed a willingness to be part of the integrated HS. However, there is a need to overcome threats such as mistrust, myths, poverty, and lack of resources, as these have the potential to derail the integration of these two HSs. It also emerged that there is a need to have a developed Terms of Reference that would govern all stakeholders and ensure the common goal is pushed forward.

**Paper Seven: *Validating developed strategies for integrating Indigenous Health and Modern Health systems for improved Adolescent Sexual Health outcomes in Umguza and Mberengwa districts in Zimbabwe*: Conclusion**

The proposed strategies were relevant and stood better chances of facilitating the integration of Indigenous and Modern Health Systems. The majority of the key stakeholders and experts were in agreement with the proposed strategies. Therefore, these strategies must be rolled out and implemented in the two districts and monitored and evaluated. In case they are yielding positive results, they expanded to other districts with a similar setup.

**General Conclusion**

The Indigenous Knowledge that influences sexual experiences in adolescents was explored and Sexual Health services available for them in Indigenous Health Systems and the Modern Health Systems assessed. The roles played by different stakeholders in the communities were also explored. The extent of influence of the two health systems on adolescent sexual health was also explored. These findings, therefore, provided a baseline to guide the strategy development process. This led to the development and validation of five strategies that aim to facilitate the integration of IHS and MHS taking into consideration the content, contextual factors, and the actors that would play a role in the implementation of these strategies. The development process followed a series of phases that were broken

down into stages to ensure comprehensive data was collected, captured, cleaned and analysed to guide the strategy development and validation process. Implementing these strategies in these will yield positive outcomes as there would be collaborative efforts to ensure adolescents' sexual activities are delayed and, if not possible, done in a manner that would reduce the spread of sexually transmitted infections and reduce the prevalence of pregnancies. Conclusively all the objectives laid out on the onset of this research were sufficiently covered and addressed, and findings presented thereof. Therefore, the developed strategies were informed by empirical evidence and if successfully implemented, could lead to the attainment of desired sexual health outcomes in adolescents.

# Recommendations

It is therefore recommended that:

- ✓ Different stakeholders, particularly the experts, provide training and information sharing and do awareness campaigns involving all the different stakeholders that would be part of this integrative process to update them on these developed strategies.
- ✓ Pool together resources to finance the implementation of these strategies. There is a need to establish a committee to spearhead the fundraising process to disseminate these strategies to different key stakeholders. If approved by the Ministry of Health and Child Care, these strategies implemented.
- ✓ There is also a need to appoint a team that would involve legal experts to develop terms of reference for the possible integration.
- ✓ There is a need to first implement these strategies in a few communities in the two districts as a pilot to determine whether or not the intended targets would be met and give room for further fine-tuning of strategies beyond expanding the coverage to the whole two districts.
- ✓ The Ministry of Health and Child Care should oversee the implementation of these strategies as approval for implementation would be sought from them and ensure there is accountability for the activities.
- ✓ There is also a need to develop a Monitoring and Evaluation plan (with clear indicators) that would be used to assess progress during these strategies' implementation.
- ✓ Monitoring and evaluating these strategies should be done at intervals that would be agreed upon by all stakeholders involved, considering the financial implications of this process.

# Study limitations

There were no major limitations encountered during the conducting of this research in its entirety although the data collection process was prolonged and disturbed at some point due to the lockdowns caused by the COVID 19 Pandemic. This led to minor adjustments, particularly in adolescents' sampling (where the initial plan was to target 50:50% representation of males and females. Due to some restrictions and failure to get some of the initially targeted adolescents, the researcher worked with those available and accessible regardless of sex.

# Appendices

## **Appendix 1:** Ethics Clearance Certificate (University of Venda)

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
**Mr WN Nunu**

Student No:
17023786

PROJECT TITLE: **Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe.**

PROJECT NO: **SHS/19/PH/17/2608**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

| NAME | INSTITUTION & DEPARTMENT | ROLE |
|---|---|---|
| Prof RT Lebese | University of Venda | Promoter |
| Dr JT Mabunda | University of Venda | Co- Promoter |
| Dr L Makhado | University of Venda | Co- Promoter |
| Mr WN Nunu | University of Venda | Investigator – Student |

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: August 2019
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Senior Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2019 -08- 26
Private Bag X5050
Thohoyandou 0950

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950 LIMPOPO PROVINCE SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 FAX (015) 962 9000
*"A quality driven financially sustainable, rural-based Comprehensive University"*

# **Appendix 2:** Ethics Clearance Certificate (Medical Research Council of Zimbabwe)

Telephone: 791193/08644073772
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

Medical Research Council of Zimbabwe
Josiah Tongogara / Mazowe Street
P. O. Box CY 573
Causeway
Harare

**APPROVAL**

**MRCZ/A/2611** **10 December, 2020**

**Wilfred Njabulo Nunu**
National University of Science Technology
P O Box AC 939
Ascot
Bulawayo

**RE: - Strategies to Facilitate Safe Sexual Practices in Adolescents Through Integrated Health Systems in Selected Districts.**

Thank you for the application for review of Research Activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has reviewed and approved your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:-

1. Completed MRCZ 101 new study application form
2. Protocol version 2.0 dated July, 2020
3. Assent Form (English, Shona and Ndebele) version 2.0 dated 17 July, 2020
4. Parental Informed Consent Form (English, Shona and Ndebele) version 2.0 dated 17 July, 2020
5. Adult Informed Consent Form (English, Shona and Ndebele) version 2.0 dated 17 July, 2020
6. Data Collection Tools

- **APPROVAL NUMBER** : **MRCZ/A/2611**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING** : **Full Board**
- MEETING DATE : 16 June, 2020
- **APPROVAL DATE** : **21 July, 2020**
- **EXPIRATION DATE** : **20 July, 2021**

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

•**SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.

•**MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).

•**TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.

•**QUESTIONS**: Please contact the MRCZ on Telephone No. (0242)791193, 08644073772 or by e-mail on mrcz@mrcz.org.zw

Other

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.
- In addition to this approval, all clinical trials involving drugs, devices and biologics (including other studies focusing on registered drugs) require approval of Medicines Control Authority of Zimbabwe (MCAZ) before commencement

Yours Faithfully

.....

**MRCZ SECRETARIAT**
**FOR CHAIRPERSON**
**MEDICAL RESEARCH COUNCIL OF ZIMBABWE**

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
2020 -07- 21
APPROVED
P.O. BOX CY 573 CAUSEWAY, HARARE

**PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH**

**Appendix 3:** Ethics Clearance Certificate (National University of Science and Technology**)**

NUST

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
Cecil Avenue/Gwanda Road, P. O. Box 939, Ascot, Bulawayo, Zimbabwe
Telephones: 263-284 404 Fax: 263-9-286 803 email: RIO.DIRECTOR @ nust.ac.zw

RIO

## RESEARCH & INNOVATION OFFICE

**Date:** 15 September 2019

**Name of the Principal Investigator:** Wilfred Njabulo Nunu

**Designation:** Lecturer, Department of Environmental Health and Science, Faculty of Applied Sciences, National University of Science and Technology, Zimbabwe

**PhD Candidate** – School of Health Sciences, University of Venda, South Africa

**Address:** Department of Environmental Science and Health (NUST),

**Subject: Approval of the study – "*Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts in Zimbabwe*," by the Research and Innovation Office**

Dear Wilfred Njabulo Nunu,

Thank you for seeking the Research and Innovation Office (RIO)'s advice about the above mentioned project seeking ethical clearance. RIO has reviewed and discussed your application to conduct the above mentioned study to investigate ***Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts in Zimbabwe*** with yourself as the Principal investigator, being supervised by ***Dr. Makhado Lufuno*** (Lecturer University of Venda, South Africa).

You provided the following documents for consideration:
**- Research Proposal Document of the Study**
**- Clearance Letter from University of Venda Institutional Review Board**
This letter serves to inform you that the Ethical clearance has been granted by RIO on condition that you do not deviate from the protocol and procedures stated in the proposal; and you seek ethical clearance from MRCZ.

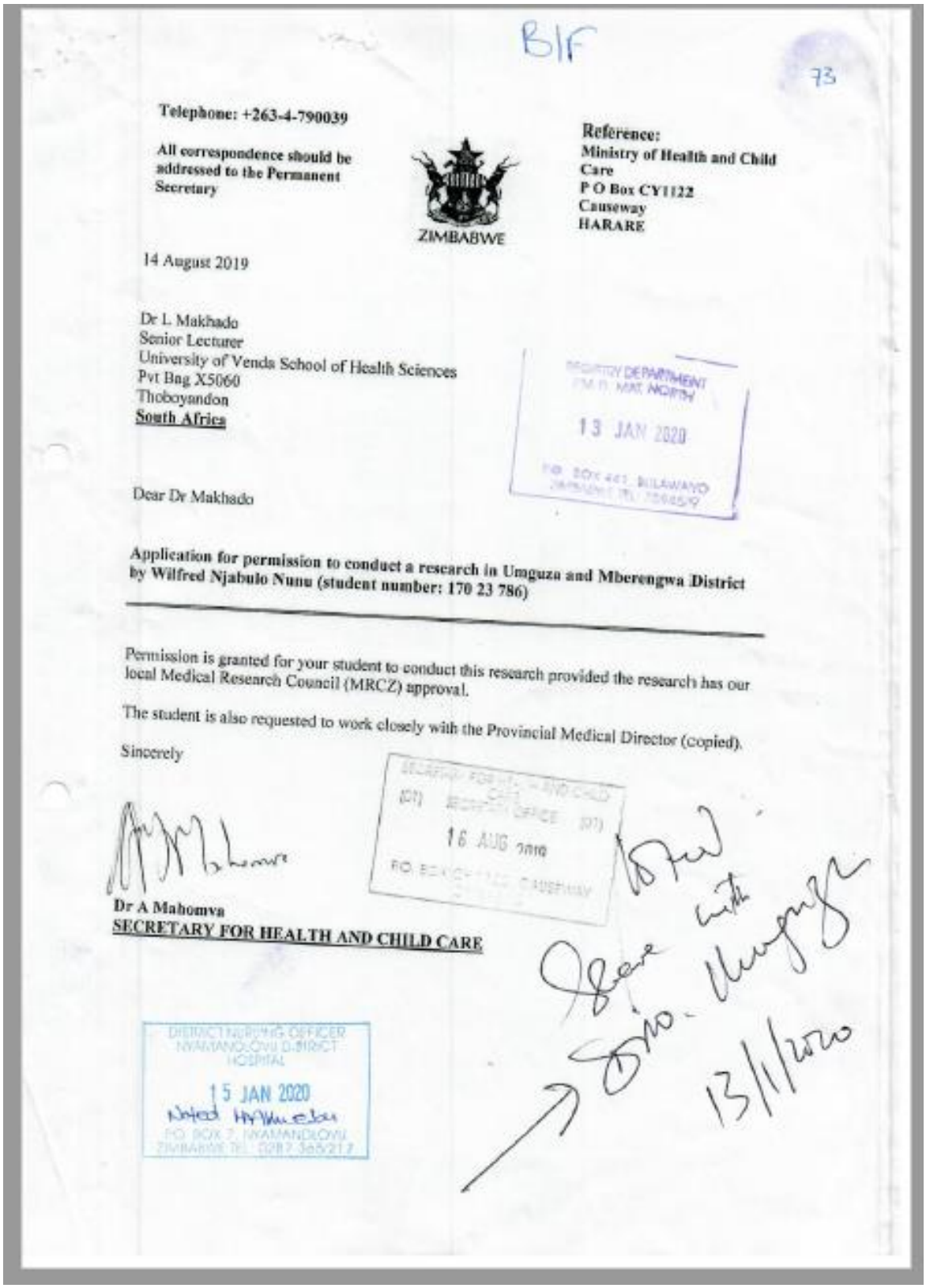
Thank You

Yours Sincerely,

Dr Paul Makoni
Chief Research Officer
Research and Innovation Office

1

**Appendix 4:** Permission from the Ministry of Health and Child Care of Zimbabwe



BIF

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Telephone: +263-4-790039

All correspondence should be addressed to the Permanent Secretary

ZIMBABWE

Reference:
Ministry of Health and Child Care
P O Box CY1122
Causeway
HARARE

14 August 2019

Dr L Makhado
Senior Lecturer
University of Venda School of Health Sciences
Pvt Bag X5060
Thohoyandou
South Africa

MINISTRY DEPARTMENT
P.M.O. MAT. NORTH
13 JAN 2020
P.O. BOX 443, BULAWAYO
ZIMBABWE TEL: 72665/9

Dear Dr Makhado

**Application for permission to conduct a research in Umguza and Mberengwa District by Wilfred Njabulo Nunu (student number: 170 23 786)**

Permission is granted for your student to conduct this research provided the research has our local Medical Research Council (MRCZ) approval.

The student is also requested to work closely with the Provincial Medical Director (copied).

Sincerely

SECRETARIAT FOR HEALTH AND CHILD CARE
(DT) REGISTRY OFFICE (DT)
16 AUG 2019
P.O. BOX CY1122 CAUSEWAY

Dr A Mahomva
SECRETARY FOR HEALTH AND CHILD CARE

Seen with Dr Nunu
13/1/2020

DISTRICT NURSING OFFICER
NYAMANDLOVU DISTRICT HOSPITAL
15 JAN 2020
Noted
P.O. BOX 7, NYAMANDLOVU
ZIMBABWE TEL: 0287 365/217

# **Appendix 5:** Univen Information Sheet

**RESEARCH ETHICS COMMITTEE**

**UNIVEN Informed Consent**

**LETTER OF INFORMATION**

**Title of the Research Study** : Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts in Zimbabwe.

**Principal Investigator/s/ researcher** : *Wilfred Njabulo Nunu, MPH Health Systems and Policies*

**Co-Investigator/s/supervisor/s** :

**Brief Introduction and Purpose of the Study**: Zimbabwe has the highest teenage pregnancy rate in Sub Saharan Africa as evidenced by the findings from a fertility study that was conducted in 2016. High adolescent HIV and AIDS prevalence is a course for concern. Indigenous Health Systems and Modern Health Systems in Zimbabwe run parallel thereby introducing challenges in the management of adolescent sexual health due to conflicts. This study seeks to develop strategies that would facilitate the integration of these two health systems to promote safe sexual practices in adolescents.

**Outline of the Procedures** : *You have been selected to participate in this study. You will either be required to respond to interview questions, participate in Focus group Discussions or respond to an interviewer-administered questionnaire. Focus group discussions are expected to take about 30 minutes to an hour whilst interview and questionnaire administration would be expected to take about 20 minutes of your time. In cases of adolescents that are under the age of 18, "assent" will be obtained from the children then "consent" from their parents / guardians.*

**Risks or Discomforts to the Participant**: *There are no foreseen risks that would occur due to your participation in this study.*

**Benefits** : *There are no direct benefits that are going to be realised through participation in this study, however if developed strategies are implemented they could improve adolescent sexual outcomes. The researcher is expecting to publish at least 4 articles in peer-reviewed journals from this study. The research if successfully completed would result in the award of a PhD in Public Health to the Researcher.*

**Reason/s why the Participant May Be Withdrawn from the Study**: The participants are free to withdraw from the study if they are not feeling well if they are no longer comfortable with being part of the study. Participants will also be withdrawn from the study if they do not comply with the stipulated rules or if they are reacting in a way that could course harm or discomfort to other participants and the research. It should be noted that if a participant chooses to withdraw or is withdrawn from the study there will be no adverse consequences.

**Remuneration** : *Participants taking part in focus group discussions would be given some refreshments as it is expected that Focus group discussions could take longer. There will be no monetary benefits that would be realised through participation in the study. Participation would be voluntary.*

**Costs of the Study** : *Participants would not be expected to cover any costs towards the study.*

**Confidentiality** : *Participants would not be identified, they will be assigned participant numbers that are not traceable to the actual participants. The information given will be kept confidential and would only be available to the researcher and the supervisors. The data collected would only be meant for academic purposes.*

**Data Re-use** *: Collected data would be re-used for publications. However, your identity will be kept sealed and nothing will be traceable back to you.*

**Research-related Injury**: *There are no injuries that are expected to occur due to participating in this research as it is a survey. No experiments would be conducted on the participants*

Persons to Contact in the Event of Any Problems or Queries:

My supervisor Doctor Lufuno Makhado +2784556260, the researcher on +263772984539, or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

General:
Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population

**CONSENT**

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, (*Wilfred Njabulo Nunu*), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _,
- I have also received, read and understood the above written information (*Participant Letter of Information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.
- (If Applicable) I have no objections if my adolescent participates in the study if they are willing to do so.

Full Name of Participant Date Time Signature

**I, …… …… ……**
**……..**

(*Name of researcher*) herewith confirm that the above participant has been fully

Informed about the nature, conduct and risks of the above study.

Full Name of Researcher

**……**

Date**……..** Signature**……**

Full Name of Witness (If applicable)

**……**

Date **……..** Signature**……..**

Full Name of Legal Guardian (If applicable)

**……**

Date**……** Signature**……**

Full Name of adolescent (if applicable)

…….. Date…….

Signature……

# **Appendix 6:** Adolescent Assent form University of Venda

**Name of study:** Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe.

- I understand that I have been asked to participate in a study about: “Developing strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe”.
- I will be asked to respond to questions asked by the researcher using a questionnaire, which will take about 10-15 minutes.
- I understand that I do not have to participate. If I do participate, I can quit at any time.
- I also understand that I do not have to answer any questions I don't want to answer or do anything I do not want to do.
- My parents /legal guardians or anyone else will not know what I have said or done in the study. No one but the researchers will know.

This study is being done by Wilfred Njabulo Nunu of the University of Venda. His phone number is +263 772 984 539 /+263 713 083 081 and his email address is njabulow@gmail.com.

If I have any questions or concerns about the study, I can call and ask him about them.
When I sign my name, this means that I agree to participate in the study and that all of my questions have been answered. I have also been given a copy of this form.

**Name:**…… **Date:**…… **Signature:**……

# **Appendix 7:** Adult Informed Consent form (MRCZ): English Version


UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Adult Informed Consent Form-** Version 2.0 Date: 17 July 2020

**Project Title:** Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe

**Principal Investigator:** Wilfred Njabulo Nunu

**Phone number:** +263 772984539 / +263 713083081

**What you should know about this research study:**

- ✓ We give you this consent form so that you may read about the purpose, risks and benefits of this research study.
- ✓ The main goal of research studies is to gain knowledge that may help future patients.
- ✓ We cannot promise that this research will benefit you directly.
- ✓ You have the right to refuse to take part or agree to take part now and change your mind later.
- ✓ Whatever you decide, it will not affect your regular care.
- ✓ Please review this consent form carefully. Ask any questions before you make a decision.
- ✓ Your participation is voluntary.

**PURPOSE**

Zimbabwe has the highest teenage pregnancy rate in Sub Saharan Africa as evidenced by the findings from a fertility study that was conducted in 2016. High adolescent HIV and AIDS prevalence is a course for concern. Indigenous Health Systems and Modern Health Systems in Zimbabwe run parallel thereby introducing challenges in the management of adolescent sexual health due to conflicts. This study seeks to develop strategies that would facilitate the integration of these two health systems to promote safe sexual practices in adolescents. You are being asked to participate in this study "***Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe***"

as you are able to provide insights that could be used in the development of these strategies as a key stakeholder in adolescent issues.

**PROCEDURES AND DURATION**

You have been selected to participate in this study. You will either be required to respond to interview questions, participate in Focus Group Discussions or respond to an interviewer-administered questionnaire. Focus Group Discussions are expected to take approximately 30 minutes to an hour and a half whilst interview and questionnaire administration would be expected to take approximately 30 minutes of your time.

**RISKS AND DISCOMFORTS**

There are no foreseeable risks of injury or inconveniences which may arise from participating in this study as no form of treatment is involved. All that will be required of you is to answer questions that will be asked. However, emotional trauma and distress may occur especially if you have been sexually violated or have had some traumatising sexual experiences before. Should such a situation arise, you will be excused from the discussion and referred to the health facility for professional counselling and care.

**BENEFITS AND/OR COMPENSATION**

There are no direct benefits that are going to be realised through participation in this study, however, if developed strategies are implemented they could improve adolescent sexual health outcomes through improved adolescent sexual health systems. You will not be paid to be part of this study, however, you will be provided with monies for snacks during the data collection process.

**CONFIDENTIALITY**

Participants would not be identified, they will be assigned participant numbers that are not traceable to the actual participants. The information given will be kept confidential and would only be available to the researcher and the supervisors. The data collected would only be meant for academic purposes. However, if you indicate your willingness to participate in this study by signing this document, we plan to disclose the results of the study to the District Medical Directorate of the two districts (Umguza and Mberengwa) for possible implementation of proposed strategies to improve service delivery on adolescent sexual related health issues. No information obtained in this study can be identified with you.

**COSTS**

Participants would not incur any costs by participating in this study.

**IN THE EVENT OF INJURY**

There are no foreseen injuries that may occur due to your participation in this study as it only involves you answering the posed questions.

**VOLUNTARY PARTICIPATION**

Participation in this study is voluntary. If you decide not to participate, your decision will not affect your future relations with the researcher and any other stakeholders that are involved in Adolescent sexual Health issues. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time. You will also be withdrawn from the study if you do not comply with the stipulated rules or if you are reacting in a way that could course harm or discomfort to other participants and the research. It should be noted that if you choose to withdraw or you are withdrawn from the study there will be no adverse consequences (you will not be penalised or victimised).

## SIGNATURE PAGE

Protocol Version Number: 2.0 Date: 17 July 2020

**OFFER TO ANSWER QUESTIONS**

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

**AUTHORIZATION**

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all questions answered and have decided to participate.

**Name of Research Participant** (please print).....**Date**……..

**Signature of Participant** …….....**Time**…….

**Name of staff obtaining**

**Consent**……**Signature**……**Date**……

**YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.**

If you have any questions concerning this study or consent form beyond those answered by the investigator; this includes questions about the research, your rights as a research participant or research-related injuries, or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe (MRCZ) on telephone (04)791792 or (04)791193 and cell phone line 0784 956 128. The MRCZ Offices are located at the National Institute of Health Research premises at Corner Josiah Tongogara and Mazowe Avenue in Harare.

## **Appendix 8:** Adult Informed Consent form (MRCZ): isiNdebele Version

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Adult Informed Consent Form-** Version 2.0 Date: 17 July 2020

**Isihloko Sochwayisiso:** Amasu wokwelekelela indlela ezocansi eziphephileyo kwabatsha (adolescents) ngokusebenzisa amasistimu ahlanganisiweyo ezempilo kuma District akhethiweyo kwele Zimbabwe

**Umchwayisisi omkhulu:** Wilfred Njabulo Nunu (MPH)

**Inombolo Zocingo:** +263 772984539 / +263 713083081

**Okummele ubekwazi ngalolu chwayisiso::**

- ✓ Sikunika lesi sivumelwano ukuba ubale ngenjongo yalolu chwayisiso, ngengozi nxa ingabakhona ongahlangana layo nxa ube yingxenye, kanye lokuphathiseka ongakuthola ngokuba yi ngxenye yaloluchwayisiso.
- ✓ Injongo kuzo zonke izichwayisiso yikuthola ulwazi olungaphathisa ezinye iziguli kwelizayo.
- ✓ Asingeke sithembise ukuba lolu chwayisiso luzakuphathisa wena ngokwakho ngqo.
- ✓ Ulelungelo lokwala ukuphatheka kulolu chwayisiso, kumbe ukuvuma khathesi kodwa uguqule umkhumbulo wakho sokuphambili.
- ✓ Isinqumo ozasenza asisoze siphambanise indlela ozaphathwa ngayo nxa udinga uncedo lwezempilakahle.
- ✓ Balisisa uzwisise kakuhle konke okubhalwe lapha, njalo ubuze konke ofisa ukukuzwisisa ungakenzi isinqumo.
- ✓ Ukuba yingxenye yalolu chwayisiso akubanjwa ngamandla.

**INJONGO**

I Zimbabwe ilesilinganiso esiphezulu sabatsha abazithwalayo e Sub Saharan Africa kusekelwa yimpumela yophenyo lwezokuzala olwenziwa ngomnyaka ka 2016. Isilinganiso esikhulu sokumemetheka kwegciwane le HIV lomkhuhlane we AIDS kuyimbangela yokukhathazeka elizweni. Inhlelo zomdabuko lenhlelo Zalamuhla Zempilo kwele Zimbabwe

kazibambisani ngakho ke kuba lobunzima ekuphatheni inhlelo zocansi kwabatsha ngenxa yengxabano ezisuka zibekhona kunhlelo lezi zombili. Loluphenyo lufuna ukukhanda amasu okwenza kube lula ukuhlanganisa inhlelo zokukhuthaza abatsha kwezocansi oluphephile. Ucelwa ukuba yingxenye yochwayisiso olusungula "***Amasu wokwelekelela indlela ezocansi eziphephileyo kwabatsha (adolescents) ngokusebenzisa amasistimu ahlanganisiweyo ezempilo kuma District akhethiweyo kwele Zimbabwe***" njengomuntu ongasipha impendulo ezingasincedisa kulomsebenzi wabatsha.

**INDLELA OKUZAQHUTSHWA NGAYO**

Ukhethiwe ukuthi ube ngumhlanganyeli kuloluphenyo. Uzadingeka ukuthi uphendule imibuzo yengxoxo,loba ube ngumhanganyeli engoxweni zeqembu kumbe uphendule imibuzo ebekiweyo kuwe. Ingxoxo zeqembu lokugxila kkukhangeleke ukuthi zithathe imizuzu engamatshumi amathathu kusiya kuhora elilamatshumi amathathu emizuzu kuthi ukuxoxisana kanye lokulawulwa kwemibuzo kuthathe imizuzu engamatshumi amathathu esikhathi sakho.

**INGOZI ENGABAKHONA**

Akula ngozi kumbe ukuhlukumezeka komzimba okukhangelelwe ukuthi kuvele ngokuphatheka kulolu chwayisiso kalokhu kungelakuhlolwa kumbe ukwelapha okuzabakhona. Okudingekayo nje yikuba uphendule imibuzo ezabuzwa. Kodwa ke, kungenzeka ukuba kube lokuhlukumezeka ko moya ikakhulu nxa uke wahlukunyezwa ngokwemacansini okufana lokubanjwa iganyavu. Nxa kungenzeka lokho, siyabe sizakucela ukuba ungasaqhubekeli phambili kule ingxoxo, besesixhumana labezempilakahle ku klinika eseduze ukuba athole uncedo olufaneleyo.

**INZUZO KUMBE IMBADALO**

Azikho inzuzo ezizatholwa ngokuba ngumhlanganyeli kuloluphenyo, kodwa ke amasu azabunjwa kuloluphenyo angasiza ukuthuthukisa impumelo kwezocansi kuntanga yabatsha. Akula mbadalo ozayiphiwa ngokubna kulolupheyo, kodwa uzaphiwa imadlana yokuthenga okuncinyane okuqandisa umphimbo ngesikhathi kutholwa ulwazi kuwe.

**UBUMFIHLO**

Uma uvume ukuba yingxenye yaloluphenyo, uzaphiwa inombolo ingeke ikhombise ukuthi nguwe ophendule imibuzo yophenyo. Impendulo ozasipha zona zizagcinwa ziyimfihlo njalo zizasetshenziswa okwesikole kuphela. Impumela yo chwayisiso lolu luzabiwa

leziphathamandla zesigaba se Mguza lase Mberengwa ukwenzela ukuthi basebenzise lawo masu abunjiweyo ukuphucula okuphathelane lezemacansini entsha. Akula bufakazi obuzakukhomba ukuthi nguwe owaba yingxenye yempendulo ezizasetshenziswa.

**INDLEKO**

Akula ndleko ozaba lazo ngokuba yingxenye yaloluphenyo.

**NXA KUNGENZEKA ULIMALE**

Akulakulimala okukhangelelweyo ngokuphatheka kuloluchwayisiso lokhu kuyabe kuphendulwa imibuzo nje.

**UKUBA YINGXENYE YOCHWAYISISO KUNGELAKUBANJWA NGAMANDLA**

Ukuba yingxenye yaloluphenyo yikuzikhethela awubanjwa ngamandla. Uma walileukuba yingxenye yo chwayisiso, isinqumo sakho asisoze siphambanise ubudlelwano bakho labachwayisisi, iklinika othola kiyo usizo lwezempilakahle. Uma uvumile ukuba yingxenye yesichwayiso, uyenelisa ukuguqula inqgondo uphume kuchwayisiso kungela kuhlukuluzwa loba ukujeziswa ozakwenziwa. Uyenelisa ukukhitshwa kuchwayisiso umaungalandeli imiyalo ebekiweyo njalo uma izenzo zakho zihlukumeza abanye abayingxenye yochwayisiso.

## IKHASI LESICIBITSHELO

Protocol Version Number: 2.0 Date: 17 July 2020

### ISICELO SOKUBA UBUZE IMIBUZO

Ungaka cibitsheli kuleli khasi, uyacelwa ukuba ubuze imibuzo ephathelane loba yini ehlangene lalolu chwayisiso ongabe ungakuzwisisi. Thatha isikhathi sonke osidingayo ukucabangisisa ngalokho.

### UKUVUMA

Uthatha isinqumo sokuthi ube kumbe ungabi yingxenye yalolu chwayisiso. Isicibitshelo sakho siveza ukuba usubalile, kumbe usubalelwe wazwisisa konke okuphawuliweyo, njalo waphendulwa yonke imibuzo obulayo yikho usuthethe isinqumo sokuba yingxenye yalolu chwayisiso.

Ibizo lophathekayo (ngamabala amakhulu).....Usuku……..

Isicibitshelo sophathekayo ……Isikhathi……..

Ibizo lomchwayisisi othola imvumo ……..Isicibitshelo……Usuku……

### UZAPHIWA IKHASI LAKHO LESIVUMELWANO LESI UKUZE ULIGCINE

Nxa ulemibuzo mayelana lalolu chwayisiso kumbe isivumelwano engaphezu kwaleyo ephendulwe ngumchwayisisi; lokhu kugoqela imibuzo ephathelane lochwayisiso kumbe amalungelo akho njengo thatha ingxenye, amanyathelo azathathwa nxa kungenzeka ulimale ngokuba yi ngxenye yo chwayisiso, kumbe nxa ubona ungazange uphatheke kuhle ufisa ukukhuluma lomunye ongasilo lunga laba chwayisisi, ukhululekile ukuthintana le Medical Research Council of Zimbabwe (MRCZ) kunombolo ezithi (04)791792 kumbe (04)791193 le nombolo zikamakhala ekhukhwini ezithi 0784 956 128. Amawofisi e MRCZ Offices atholakala e National Institute of Health Research ku Corner Josiah Tongogara lo Mazowe Avenue e Harare.

# **Appendix 9:** Adult Informed Consent form (MRCZ): Shona Version


UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Adult Informed Consent Form-** Version 2.0 Date: 17 July 2020

**Musoro wetsvagurudzo:** Zvirongwa zvekufambisa dzakachengetedzeka tsika dzebonde muvachiri kuyaruka kuburikidza nehutano hwakasanganiswa hurongwa mumatunhu akasarudzwa eZimbabwe

**Mutungamiri/Vatungamiri vetsvagurudzo:** Wilfred Njabulo Nunu (MPH)

**Nhamba yenhare:** +263 772984539 / +263 713083081

**Chii chaunofanira kuziva nezvekutsvagurudza uku:**

- ✓ Isu tinokupa iyi fomu yekubvumidza kuitira kuti iwe uverenge nezvechinangwa, njodzi uye mabhenefiti echidzidzo ichi chekutsvagisa.
- ✓ Chinangwa chikuru chedzidzo dzekutsvaga ndechokuwana zivo iyo inogona kubatsira varwere venguva yemberi.
- ✓ Hatigone kuvimbisa kuti kutsvakurudza uku kuchakubatsira iwe zvakananga.
- ✓ Une kodzero yekuramba kutora chikamu kana kubvuma kutora chikamu ikozvino uye kushandura pfungwa dzako gare gare.
- ✓ Chero zvaunofunga, hazvizokanganisa kutarisirwa kwako nguva dzose.
- ✓ Ndokumbirawo mutarise iyi fomu yemvumo nokungwarira. Bvunza chero mibvunzo usati waita sarudzo.
- ✓ Kuita kwako basa kuri kwekuzvidira.

**CHINANGWA**

Zimbabwe ine mwero wepamusoro wevechidiki mu Sub Saharan Africa sezvinoonekwa nezvakawanikwa kubva kuongororo yekuzvara yakaitwa muna 2016. Kuwanda kwevechidiki nezvehutachiwana hweHIV uye AIDS idanho rekushushikana. Sangano reVanhu Hutano uye zveNhau dzeMutero zveHutano muZimbabwe zvinoenderera mberi nekuunza

matambudziko mukugadzirisa hutano hwepwere nekuda kwemhirizhonga. Ichi chidzidzo chinotsvaga kugadzira marongero angafambisa kubatanidzwa kweaya maviri hutano hutano kuitira kukurudzira tsika dzebonde dzakachengeteka muvachiri kuyaruka. Iwe uri kukumbirwa kutora chikamu muchiridzwa ichi nyaya dzevachiri kuyaruka.

**ZVIRATIDZO UYE DZVARA**

Iwe wakasarudzwa kuti utore chikamu mune chino chidzidzo. Iwe unozodikanwa kuti upindure kumibvunzo yekubvunzurudza, kutora chikamu mune Focus Boka rehurukuro kana kupindura kune wakabvunzurudzwa anotumirwa mibvunzo. Nhaurwa dzePfungwa dzeMafambiro dzinotarisirwa kutora maminetsi makumi matatu kusvika paawa nehafu apo kubvunzurudza uye kubvunzana kwemibvunzo kuchizotarisirwa kutora zvingangoita maminetsi makumi matatu yenguva yako.

**HISITSI UYE DZINOGONESA**

Iko hakuna njodzi dzinoonekwa dzekukuvara kana kukanganisa mune izvo zvinogona kubuda kubva mukutora chikamu mune ino fundo sezvo pasina nzira yekurapa inobatanidzwa. Zvese izvo zvinodikanwa kwauri kupindura mibvunzo ichabvunzwa. Nekudaro, kushungurudzika kwepamoyo uye kushushikana kunogona kuitika kunyanya kana iwe wakambobatwa bonde kana kuti wakamboita zvinorwadzisa zvepabonde zvisati zvaitika. Kana mamiriro ezvinhu akadaro akamuka, iwe uchasunungurwa kubva mukukurukurirana uye woendeswa kunzvimbo yehutano kuti uwane hunyanzvi hwekupihwa nekutarisirwa.

**BATSIRO UYE / KANA KUSANGANA**

Iko hakuna mabhenefiti akasarudzika ayo anozoonekwa kuburikidza nekutora chikamu mune chino chidzidzo, zvisinei kana nzira dzakagadziriswa dzikaitwa dzikagona kuvandudza hutano hwepwere hwehutano hwepabonde kuburikidza nehurongwa hwehutano hwepwere hwevechidiki. Iwe hausi kuzobhadharwa kuti uve chikamu cheichi chidzidzo, zvisinei iwe ucha kupihwa nemari yemakondo panguva yekuunganidza data.

**KUVIMBIKA**

Vatori vechikamu vaisazoonekwa, vachapihwa nhamba dzevatori vechikamu dzisinga tsanangurike kune vatori vechikamu chaipo. Ruzivo rwakapihwa ruchachengetwa rwakavanzika uye rwaizongowanikwa chete kumuongorori uye kune vatariri. Iyo data inounganidzwa yaizongoreva yezvidzidzo zvechinangwa. Nekudaro, kana ukaratidza kuda kwako kutora chikamu muchidzidzo ichi nekusaina gwaro iri, isu tinoronga kuburitsa

zvakabuda muongororo iyi kuRegional Medical Directorate yedunhu mbiri (Umguza neMberengwa) kuitira kuti zvibudirire kuita hurongwa hwakarongwa kuitira kuti uvandudze kupa vanhu basa nezvezvehutano nezvepwere. Hapana ruzivo rwunowanikwa muchidzidzo ichi runogona kuzivikanwa newe.

**MITENGO INOPINDWA**

Vatori vechikamu vaisazounza chero mutengo nekutora chikamu mune chino chidzidzo.

**MUCHIITIKO CHENJOZI**

Iko hakuna kukuvara kwakambofungidzirwa kunogona kuitika nekuda kwekutora chikamu chako muchidzidzo ichi sezvo zvinongosanganisira iwe kupindura mibvunzo yakabvunzwa.

**KUSHANDA KUSINA KUMANIKIDZWA**

Kutora chikamu mune ino chidzidzo kuri kwekuzvidira. Kana iwe ukafunga kusatora chikamu, yako sarudzo haizokanganisa hukama hwako hweramangwana nemuongorori uye chero vamwe vatori vechikamu vanobatanidzwa mune vechidiki vezvehutano zvepabonde. Kana iwe ukafunga kutora chikamu, wakasununguka kubvisa mvumo yako uye kurega kuita chero nguva. Iwe unozobviswawo kubva kuongororo kana usinga tevedzerwe mitemo yakatarwa kana kana uri kuita nenzira iyo inogona kukuvadza kana kusagadzikana kune vamwe vatori vechikamu uye kutsvagurudzo. Izvo zvinofanirwa kucherechedzwa kuti kana iwe ukasarudza kubvisa kana iwe ukabviswa kubva kunzvera hakuchina mhedzisiro yakaipa (iwe hauzorangwa kana kubhinywa).

**SIGNATURE PAGE**

Protocol Version Number: 2.0 Date: 17 July 2020

**BATSIRA KUPINDURA MIBVUNZO**

Usati wasaina fomu iri, ndokumbirawo ubvunze chero mibvunzo pane chero chikamu chekudzidza ichi chisina kujeka kwauri. Iwe unogona kutora nguva yakawanda sezviri madikanwa kuti ufunge nezvazvo.

**MVUMO**

Uri kuita chisarudzo chekuti utore chikamu mune chino kudzidza kana kwete. Signature yako inoratidza kuti wakaverenga uye wanzwisisa ruzivo rwapihwa pamusoro, wanga uine mibvunzo yese yakapindurwa uye wafunga kutora chikamu.

**Zita rekutsvagira Muhusika** (please print)..... **Zuva** ……..

**Siginecha yomupindura** …….....**Nguva** …….

**Mazita evashandi vanowana mvumo**

……**Siginecha**……**Zuva**……..

**UNOZOPIWA COPY YENYAYA YEMUFANANIDZO KUTI UYE URI.**

Kana iwe uine chero mibvunzo ine chekuita nekudzidza uku kana fomu yekubvumidza kupfuura iya yakapindurwa nemuongorori; izvi zvinosanganisira mibvunzo nezve kutsvagurudzo, kodzero dzako somunhu mutambi mutsvagurudzo kana kukuvara kwakanangana nekukuvara, kana kana iwe uchinzwa kuti hauna kubatwa zvisina kunaka uye unoda kutaura nemumwe munhu asiri nhengo yetimu yekutsvagira, ndapota inzwa wakasununguka kuonana Medical Research Council of Zimbabwe (MRCZ) parunhare (04) 791792 kana (04) 791193 uye nharembozha nhare 0784 956 128. Mahofisi eMRCZ ari panzvimbo yeNational Institute of Health Research nzvimbo kuCorner Jeremiah Tongogara neMazowe Avenue muHarare.

## **Appendix 10:** Parental Consent and adolescent assent (13-17) (MRCZ): English Version

***MRCZ FORM 110***

IRB No. **MRCZ/A/2611**

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Informed Consent form for Parental consent-** Version 2.0 Date: 17 July 2020

**Project Title:** Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe

**Principal Investigator:** Wilfred Njabulo Nunu (MPH)

**Phone number:** +263 772984539 / +263 713083081

**What you should know about this research study:**

- ✓ We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- ✓ The main goal of research studies is to gain knowledge that may help future patients.
- ✓ We cannot promise that this research will benefit your child. Just like regular care, this research can have side effects that can be serious or minor.
- ✓ You have the right to refuse to allow your child to take part, or agree for your child to take part now and change your mind later.
- ✓ Whatever you decide, it will not affect your child's regular care.
- ✓ Please review this consent form carefully. Ask any questions before you make a decision.
- ✓ Your choice to allow your child to participate is voluntary.

**PURPOSE**

You are being asked to allow your child to participate in a research study of Developing Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe. The purpose of the study is to develop strategies that would facilitate safe sexual practices in adolescents by integrating the Traditional and Modern Health systems. Your child was selected as a possible participant in this study because they are adolescents that would assist us to understand different sexual practices they engage in as well as how they perceive and utilise the two health systems (Traditional and Modern) for sexual health-related issues. This study would enrol 370 adolescents aged between 10-19 in Mberengwa and 360 in Umguza Districts.

**PROCEDURES AND DURATION**

If you decide to allow your child to participate, your child would respond to a semi-structured questionnaire that would take approximately 30 minutes to administer probing on their sexual health perceptions, practices and sexual health-seeking behaviour.

**RISKS AND DISCOMFORTS**

There are no foreseeable risks of injury or inconveniences which may arise from your adolescent participating in this study as no form of treatment is involved. All that will be required is for the adolescent to respond to questions that will be asked. However, we cannot rule out that emotional trauma and distress may occur to the adolescent if they have been sexually violated before. Should such a situation arise, the adolescent would be excused from the study n and referred to the health facility for professional counselling and care.

**BENEFITS AND/OR COMPENSATION**

There are no direct benefits that are going to be realised through participation in this study, however, if developed strategies are implemented they could improve adolescent sexual health outcomes through improved adolescent sexual health systems. The adolescent would be provided with money for snacks during the data collection.

**CONFIDENTIALITY**

If you indicate your willingness for your child to participate in this study by signing this document, we plan to disclose the results of the study to the District Medical Directorate of the two districts (Umguza and Mberengwa) for possible implementation of proposed strategies to improve service delivery on adolescent sexual related health issues and to the

University of Venda for assessment of this research for the award of a PhD qualification to the researcher. Any information that is obtained in connection with this study that can be identified with your child will remain confidential and will be disclosed only with your, and when appropriate, your child's permission. Under some circumstances, the MRCZ and the local Institutional Review Board may need to review adolescent records for compliance audits.

**ADDITIONAL COSTS**
You will not be required to pay for any expenses that are related to your adolescent participating in this study.

**IN THE EVENT OF INJURY**
No injuries are anticipated in this study as it only involves answering questions.

**VOLUNTARY PARTICIPATION**
Participation in this study is voluntary. If you decide not to allow your child to participate in this study, your decision will not affect your or your child's future relations with this institution, its personnel, and associated hospitals and stakeholders. If you decide to allow your child to participate, you and your child are free to withdraw your consent and assent and discontinue participation at any time without penalty.

**ADDITIONAL ELEMENTS**
If there are signs of trauma or discomfort from the participating adolescent the researcher would withdraw the child's participation and referral made to the trained professional counsellors/ health service providers

**OFFER TO ANSWER QUESTIONS**
Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

**AUTHORIZATION**
YOU ARE MAKING A DECISION WHETHER OR NOT TO ALLOW YOUR CHILD TO PARTICIPATE IN THIS STUDY. YOUR SIGNATURE INDICATES THAT YOU HAVE READ AND UNDERSTOOD THE INFORMATION PROVIDED ABOVE, HAVE HAD ALL YOUR QUESTIONS ANSWERED, AND HAVE DECIDED TO ALLOW YOUR CHILD TO PARTICIPATE.

_____ _____
Name of Child *(please print)* Date & time

_____ _____
Name of Parent *(please print)* Date& time

Signature of Parent/Legally Authorized Representative Date& time

Relationship to the Child

Signature of Witness *(if required)* Date & time

Signature of Research Staff Date & time

**YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.**

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe on telephone 791792/791193 and 0784956128 or the following address:

Medical Research Council of Zimbabwe

Cnr. J. Tongogara & Mazowe Street

P.O. Box CY 573

Causeway

Harare

**Adolescent Assent (13-17 Years)**

**Name of study:** Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe.

- ✓ I understand that I have been asked to participate in a study about: "Developing strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe".
- I will be asked to respond to questions asked by the researcher using a questionnaire, which will take about 10-15 minutes.
- I understand that I do not have to participate. If I do participate, I can quit at any time.
- I also understand that I do not have to answer any questions I don't want to answer or do anything I do not want to do.
- My parents /legal guardians or anyone else will not know what I have said or done in the study. No one but the researchers will know.

This study is being done by Wilfred Njabulo Nunu of the University of Venda. His phone number is +263 772 984 539 /+263 713 083 081 and his email address is njabulow@gmail.com / Wilfred.nunu@nust.ac.zw.

If I have any questions or concerns about the study, I can call and ask him about them.
When I sign my name, this means that I agree to participate in the study and that all of my questions have been answered. I have also been given a copy of this form.

**Signature:**…… **Date:**……..

# **Appendix 11:** Parental Consent and adolescent assent (13-17) (MRCZ): IsiNdebele Version

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Informed Consent form for Parental consent-** Version 2.0 Date: 17 July 2020

| | |
|---|---|
| **Isihloko Sochwayisiso:** | Amasu wokwelekelela indlela ezocansi eziphephileyo kwabatsha (adolescents) ngokusebenzisa amasistimu ahlanganisiweyo ezempilo kuma District akhethiweyo kwele Zimbabwe |
| **Umchwayisisi omkhulu:** | Wilfred Njabulo Nunu (MPH) |
| **Inombolo Zocingo:** | +263 772984539 / +263 713083081 |

**Okummele ubekwazi ngalolu chwayisiso:**

- ✓ Sikunika lesi sivumelwano ukuba ubale ngenjongo yalolu chwayisiso, ngengozi nxa ingabakhona ongahlangana layo nxa ube yingxenye, kanye lokuphathiseka ongakuthola ngokuba yi ngxenye yaloluchwayisiso.
- ✓ Injongo kuzo zonke izichwayisiso yikuthola ulwazi olungaphathisa ezinye iziguli kwelizayo.
- ✓ Asingeke sithembise ukuba lolu chwayisiso luzakuphathisa umtanakho ngokwakhe ngqo. Njengezinye inchwayisiso, lolu phenyo lungaba lezingozi ezinkulu loba ezincinyane.
- ✓ Ulelungelo lokwala loba uvume ukuthi umtanakho abe yingxenye yalolu chwayisiso njal;o uyenelisa ukutshintsha ingqondo ngesinqumo osithethetheyo ngokuqhubeka kwalolo chwayisiso.
- ✓ Isinqumo ozasenza asisoze siphambanise indlela umtanakho ozaphathwa ngayo nxa edinga uncedo lwezempilakahle.
- ✓ Balisisa uzwisise kakuhle konke okubhalwe lapha, njalo ubuze konke ofisa ukukuzwisisa ungakenzi isinqumo.

- ✓ Ukuvuma ukuba umtanalakho abe yingxenye yalolu chwayisiso akubanjwa ngamandla.

**INJONGO**

Uyacelwa ukuba uvumele umtanakho abe yingxenye yochayisiso olokusungula Amasu wokwelekelela indlela ezocansi eziphephileyo kwabatsha (adolescents) ngokusebenzisa amasistimu ahlanganisiweyo ezempilo kuma District akhethiweyo kwele Zimbabwe. Inhloso yaloluchwayisio yikusungula amasu azekelela ukuthi intsha ukuya emacansini ngendlela eziphepphileyo ngoku sebenza ndawonye kwabazempilakahle abelapha ngokwesintu labelapha ezibhedlela. Umtanakho ukhethiwe ukuba abe ngumhlanganyeli kulesi sichwasiso ukwenzela ukuthi basiphe ulwazi ngendlela abaziphatha ngayo ngokwemacansini njalo langendlela abadinga ngayo usizo kwabezempilakahle (esintwini lasezibhedlela). Isischwayisiyo lesi sikhangele ukusebenza labantwana abangama khulu amathathu lamatshumi ayisikhombisa (370) esigabeni se Mberengwa lama khulu amathathu lamatshumi ayisithupa (360) esigabeni se Mguza.

**INDLELA OKUZAQHUTSHWA NGAYO LESIKHATHI ESIZATHATHWA**

Unganquma ukuba umtanakho abe yingxenye yalesisichwayisiso, umtwana uzabuzwa imbuzo engathatha imizuzu engamatshumi amathathu esikhathi sakhe. Limbuzo iyabe imayelana lezemacansini lembono yomtanakho lokuziphatha kwakhe Kanye lokusebenzisa ezempilakahle ngokuphathelane lezemacansini. Imibuzo le iyabe ibhaliwe ngaphambilini kuyiyo eqondisa loluphenyo.

**INGOZI ENGABAKHONA**

Akula ngozi kumbe ukuhlukumezeka komzimba okukhangelelwe ukuthi kuvele ngokuphatheka kulolu chwayisiso kalokhu kungelakuhlolwa kumbe ukwelapha okuzabakhona. Okudingekayo nje yikuba uphendule imibuzo ezabuzwa. Kodwa ke, kungenzeka ukuba kube lokuhlukumezeka ko moya ikakhulu nxa umtwana eke wahlukuluzwa ngokwemacansini okufana lokubanjwa iganyavu. Nxa kungenzeka lokho, siyabe siza cela umtwana ukuba ungasaqhubekeli phambili kule ingxoxo, besesixhumana labezempilakahle ku klinika eseduze ukuba athole uncedo olufaneleyo.

**INZUZO KUMBE IMBADALO**

Azikho inzuzo ezizatholwa ngokuba ngumhlanganyeli kuloluphenyo, kodwa ke amasu azabunjwa kuloluphenyo angasiza ukuthuthukisa impumelo kwezocansi kuntanga yabatsha. Abantwana abazaba yingxenye yalolu chwayisiso bazaphiwa okuncinyane okuqandisa umphimbo ngesikhathi kutholwa ulwazi kubo.

## BUMFIHLO

Umna ungavumela ukuthi umtanakho abe yingxenye yaloluhenyo, silesifiso sokwaba lolulwazi lo District Medical Directorate kuzigaba zase Mguza lase Mberengwa ukumbe mhlawumbe basebenzise lamasu ayabe esungulwe ukuguqula impilakahle yentsha ngokwemacansini. Lolulwazi loba impumela izabiwa le nyuvesi yase Venda lapho umchwayisisi ofunda khona izifundo zezinga langaphezulu (I PHD) ukuba ahlolwe ukuthi umsebenzi lo uwenze kuhle naaah. Abahlanganyeli kabasoze bavezwe sobala, bazaphiwa inombolo ezingeke ziveze sobala umhlanganyeli wangempela. Impendulo ezizanikezwa zizagcinwa njengemfihlo njalo zizatholakala kumphenyi labaqondisi bakhe kuphela. Impendulo eziqoqiwe zizokwenzelwa injongo zemfundo kuphela. Ngakwelinye ithuba impumela ingabiwa labantu be MRCZ ukuba babone ukubana uphenyo lweziwa ngendlela elobuntu njalo eqondileyo njengesivumelwano so mchwayisisi le MRCZ.

## INDLEKO

Akula ndleko ozaba lazo ngokuvumela ukuba umtanakhoabe yingxenye yaloluphenyo.

## NXA KUNGENZEKA ULIMALE

Akulakulimala okukhangelelweyo ngokuphatheka kuloluchwayisiso lokhu kuyabe kuphendulwa imibuzo nje.

## UKUBA YINGXENYE YOCHWAYISISO KUNGELAKUBANJWA NGAMANDLA

Ukuba yingxenye yalolophenyo akubanjwa ngamandla. Uma uvumele umtanakho ukuthi abae yingxenye yaloluphenyo, isinqumo sakho asisoze siphambanise ubudlelwano bakho labachwayisisi, iklinika othola kiyo usizo lwezempilakahle. Ubvunyelwe ukuguqula umbono wakho umtwana angasaqhubeki ngokuba yingxenye esibangeni esingakhethelekile ngeskhathi seophenyo ungela ku jeziswa.

## OLUNYE ULWAZI

Nxa kulezibonakaliso zokuhlukumezeka emoyeni komtwana, umchwayisis uzanquma ukuthi umtwana angasaqhubeki ephendula imibuzo njalo abe sesiwa ezandleni zabempilakahle abangamcedisa.

## ISICELO SOKUBA UBUZE IMIBUZO

Ungaka cibitsheli kuleli khasi, uyacelwa ukuba ubuze imibuzo ephathelane loba yini ehlangene lalolu chwayisiso ongabe ungakuzwisisi. Thatha isikhathi sonke osidingayo ukucabangisisa ngalokho.

**UKUVUMA**

Uthatha isinqumo sokuthi ube kumbe ungabi yingxenye yalolu chwayisiso. Isicibitshelo sakho siveza ukuba usubalile, kumbe usubalelwe wazwisisa konke okuphawuliweyo, njalo waphendulwa yonke imibuzo obulayo yikho usuthethe isinqumo sokuba yingxenye yalolu chwayisiso.

Ibizo lophathekayo (ngamabala amakhulu).....Usuku……..

Isicibitshelo sophathekayo ……Isikhathi……..

Ibizo lomchwayisisi othola imvumo ……..Isicibitshelo……Usuku……

**UZAPHIWA IKHASI LAKHO LESIVUMELWANO LESI UKUZE ULIGCINE**

Nxa ulemibuzo mayelana lalolu chwayisiso kumbe isivumelwano engaphezu kwaleyo ephendulwe ngumchwayisisi; lokhu kugoqela imibuzo ephathelane lochwayisiso kumbe amalungelo akho njengo thatha ingxenye, amanyathelo azathathwa nxa kungenzeka ulimale ngokuba yi ngxenye yo chwayisiso, kumbe nxa ubona ungazange uphatheke kuhle ufisa ukukhuluma lomunye ongasilo lunga laba chwayisisi, ukhululekile ukuthintana le Medical Research Council of Zimbabwe (MRCZ) kunombolo ezithi (04)791792 kumbe (04)791193 le nombolo zikamakhala ekhukhwini ezithi 0784 956 128. Amawofisi e MRCZ Offices atholakala e National Institute of Health Research ku Corner Josiah Tongogara lo Mazowe Avenue e Harare.

**Adolescent Assent (13-17 Years)**

Isihloko Sochwayisiso: Amasu wokwelekelela indlela ezocansi eziphephileyo kwabatsha (adolescents) ngokusebenzisa amasistimu ahlanganisiweyo ezempilo kuma District akhethiweyo kwele Zimbabwe.

- Ngiyazwisisa ukuba ngiceliliwe ukuba ngumhlanganyeli ephenyweni olulesihloko esithi: “Amasu wokwelekelela indlela ezocansi eziphephileyo kwabatsha (adolescents) ngokusebenzisa amasistimu ahlanganisiweyo ezempilo kuma District akhethiweyo kwele Zimbabwe”.
- Ngizacelwa ukuthi ngiphendule imibuzo ebuzwe ngumphenyi esebenzisa iphepha lemibuzo, elizothatha imizuzu elitshumi kusiya kutshumi lanhlanu.
- Ngiyazwisisa ukuthi kangibanjwa ngamandla ukuba ngumhlanganyeli uma ngingafuni.Nxa ngivuma ukuba yingxenye yaloluphenyo ngiyavunyelwa ukuphuma kilo uma ngingasafuni kuqhubeka.
- Ngyazwisisa ukuba angibanjwa ngamandla ukuphendula imibuzo enginzizwa ngingakhululekanga ukuyiphendula njalo angibanjwa ngamandla ukwenza into engingayifuniyo.
- Abazalibami loba abaqaphi bami kabasoze babelolwazi ngempendulo zami kuloluphenyo loba into engizenzileyo ngiyingxenye yaloluphenyo. Akula muntu ozabakwazi ngaphandle kwabaphenyi.

Uphenyo lolu lwenziwa ngu Wilfred Njabulo Nunu we Nyuvesi yase Venda. Inombolo zakhe zocingo zithi +263 772 984 539 /+263 713 083 081 I email yakhe ithi njabulow@gmail.com.

Uma ngilemibuzo loba ukungahlaliseki ngaloluphenyo ngilakho ukumtshayela ucingo ngimbuze ngakho. Uma ngibhala ibizo lami le siginetsha kutshengisa ukuthi ngiyavuma ukuba ngumhlanganyeli kuloluphenyo njalo yonke imibuzo lokukhathazeka kwami mayelana laloluphenyo kucacisiwe. Ngiphiwe ikhophi yalelifomu.

**Ibizo:**…… **Usuku:**…….

**Isichibitshelo:**…….

## **Appendix 12:** Parental Consent and adolescent assent (13-17) (MRCZ): Shona Version

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Informed Consent form for Parental consent-** Version 2.0 Date: 17 July 2020

**Musoro wetsvagurudzo:** Zvirongwa zvekufambisa dzakachengetedzeka tsika dzebonde muvachiri kuyaruka kuburikidza nehutano hwakasanganiswa hurongwa mumatunhu akasarudzwa eZimbabwe

**Mutungamiri/Vatungamiri vetsvagurudzo:** Wilfred Njabulo Nunu (MPH)

**Nhamba yenhare:** +263 772984539 / +263 713083081

**Chii chaunofanira kuziva nezvekutsvagurudza uku:**

- ✓ Tinokupa uyu mvumo kuitira kuti iwe uverenge nezvechinangwa, njodzi, uye mabhenefiti eongororo iyi yekutsvagisa.
- ✓ Chinangwa chikuru chedzidzo dzekutsvaga ndechokuwana zivo iyo inogona kubatsira varwere venguva yemberi.
- ✓ Hatigone kuvimbisa kuti kutsvagira uku kunobatsira mwana wako. Sezvakangoita kutarisirwa nguva dzose, kutsvakwa uku kunogona kuve nemhedzisiro inogona kuve yakakomba kana diki.
- ✓ Une kodzero yekuramba kubvumira mwana wako kuti atore chikamu, kana kubvuma kuti mwana wako atore chikamu zvino uye kushandura pfungwa dzako gare gare.
- ✓ Chero zvaunofunga, hazvizokanganisa kutarisirwa kwemwana wako.
- ✓ Ndokumbirawo mutarise iyi fomu yemvumo nokungwarira. Bvunza chero mibvunzo usati waita sarudzo.
- ✓ Sarudzo yako yekubvumira mwana wako kutora chikamu ndeyekuzvidira.

**CHINANGWA**

Iwe uri kukumbirwa kuti ubvumire mwana wako kutora chikamu muchiridzwa chekutsvaga Yekuvandudza Maitiro ekufambisa maitiro akachengetedzeka ezvepabonde muvachiri kuyaruka kuburikidza nehutano hwakasanganiswa hwehutano mumatunhu akasarudzwa eZimbabwe. Chinangwa chechidzidzo ichi kugadzira marongero ayo anoitisa kuchengetedza tsika dzepabonde muvachiri kuyaruka kuburikidza nekubatanidza maCustoms neZvazvino Hutano hutano. Mwana wako akasarudzwa senge anogona kutora chikamu mune chino chidzidzo nekuti ivo vachiri kuyaruka izvo zvaizotibatsira kunzwisisa maitiro akasiyana ezvepabonde avanenge vachiita uyezve nekuziva kwavanoita uye kushandisa maitiro maviri ehutano (Chinyakare uye Chazvino) ezveutano hwepabonde. Chidzidzo ichi chakanyoresa vechidiki makumi matatu nemakumi matatu vechidiki vane makore ari pakati pegumi neshanu kuMberengwa kusvika mazana matatu eKu Mguza Districts.

**ZVIRATIDZO UYE DZVARA**

Kana iwe ukafunga kubvumira mwana wako kutora chikamu, mwana wako anopindura kune yakagadziridzwa yakaomeswa mibvunzo iyo inotora zvingangoita maminetsi makumi matatu kupa hutongi hwekufunga nezvehutano hwavo hwepabonde mafungiro, maitiro uye hutano hwepabonde kutsvaga maitiro.

**HISITSI UYE DZINOGONESA**

Iko hakuna njodzi dzinoonekwa dzekukuvara kana kusakenderedza izvo zvinogona kubuda kubva kumwana wako ari kuyaruka mukutora muchidzidzo ichi sezvo pasina nzira yekurapwa inobatanidzwa. Zvese izvo zvichadikanwa ndezvekuti mwana achiri kuyaruka apindure kumibvunzo ichabvunzwa. Nekudaro, hatigone kutaura kuti kushungurudzika uye kushungurudzika kunogona kuitika kune achiri kuyaruka kana akambobatwa zvepabonde zvisati zvaitika. Kana mamiriro ezvinhu akadaro akamuka, achiri kuyaruka anozoregererwa kubva pakudzidza n akaendeswa kunzvimbo yehutano kuti apiwe zano rehunyanzvi nekutarisirwa.

**BATSIRO UYE / KANA KUSANGANA**

Hapana mabhenefiti akananga anozozadzikiswa kuburikidza nekutora chikamu mune chino chidzidzo, zvisinei kana zviyedzo zvikagadziriswa zvikaitwa vanogona kuvandudza hutano hwepwere hwehutano hwepabonde kuburikidza nehurongwa hwehutano hwepwere hwevechidiki. Iye achiri kuyaruka aizove kupihwa mari yekutsenga panguva yekuunganidzwa kwedata.

**KUVIMBIKA**

Kana ukaratidza kuda kwako kuti mwana wako atore chikamu muchiono ichi nekusayina gwaro iri, isu tinoronga kuburitsa pachena zvabuda muongororo iyi kuRegional Medical Directorate yedunhu mbiri (Umguza neMberengwa) kuitira kuti zvibudirire kuita hurongwa hwakarongwa kuitira kuti kuvandudza kupihwa kwesevhisi pazvinhu zvevechidiki zvinoenderana nezvehutano nezvekuenda ku University of Venda kuitira ongororo yekutsvagisa uku kwekupa mubairo wePhD unopihwa muongorori. Chero ruzivo rwunowanikwa maringe nechidzidzo ichi chinogona kuzivikanwa nemwana wako runoramba rwuri chakavanzika uye ruchaziviswa chete neyako, uye pazvinenge zvakakodzera, mvumo yemwana wako. Mune mamwe mamiriro ezvinhu, MRCZ neiyo Situiti Yekuongorora Bhodhi zvingangoda kuongorora zvinyorwa zvevechidiki kuti zvitevedzwe kuongororwa.

**IMWE MARI**

Iwe hauzombodikanwa kubhadhara chero mari inobhadharwa inoenderana nekuyaruka kwako kutora chikamu muchidzidzo ichi.

**MUCHIITIKO CHENJOZI**

Iko hakuna kukuvara kwakambofungidzirwa kunogona kuitika nekuda kwekutora chikamu chako muchidzidzo ichi sezvo zvinongosanganisira iwe kupindura mibvunzo yakabvunzwa.

**KUSHANDA PASINA KUMANIKIDZWA**

Kutora chikamu mune ino chidzidzo kuri kwekuzvidira. Kana iwe ukafunga kusatendera mwana wako kuti apinde muchidzidzo ichi, sarudzo yako haizokanganisa hukama hwako hwamwana kana nemwana, vashandi vayo, nezvipatara zvinoenderana nevanozvibata. Kana wafunga kubvumira mwana wako kutora chikamu, iwe nemwana wako makasununguka kubvisa mvumo yenyu uye kubvumirana uye kurega kutora chikamu chero nguva musina kurangwa.

**CHIWEDZERO**

Kana paine zviratidzo zvekushungurudzika kana kusagadzikana kubva kune achiri kuyaruka achiri kuyaruka muongorori angabvisa mwana kutora chikamu uye kutumira kunoitwa kune vakarovedzwa nyanzvi varairidzi / vashandi vehutano hutapi.

**BATSIRA KUPINDURA MIBVUNZO**

Usati wasaina fomu iri, ndokumbirawo ubvunze chero mibvunzo pane chero chikamu chekudzidza ichi chisina kujeka kwauri. Iwe unogona kutora nguva yakawanda sezviri madikanwa kuti ufunge nezvazvo.

**MVUMO**

URI KUTI UITE CHISARUDZO KUNYANYA KANA KUTI URI KUTENDERA MWANA WAKO KUTI VABVUNZEI MUCHIDZIDZO IZVI. RAKO RINONYANYA KUTI UNOGONA KUVERENGA UYE KUTI UNOGONA KUZVIVA ZVINOPIWA KUTI UVE NECHEMA, VAKAZVIBVUNZA MIBVUNZO YAKO YOSE,

_____ _____

Zita reMwana *(please print)* Zuva & nguva

_____ _____

Zita reMubereki *(please print)* Zuva & nguva

_____ _____

Siginecha yeMubereki / Pamutemo Anomiririrwa Mumiririri Zuva & nguva

_____

Hukama kuMwana

_____ _____

Siginecha yeChapupu *(if required)* Zuva & nguva

_____ _____

Siginecha yeVashandi veKutsvaga Zuva & nguva

**UCHAPIWA COPY YENYAYA YEMUFANANIDZO WOKUTI UCHIENDA.**

Kana iwe uine mibvunzo nezve inoongorora kana fomu yemubvumo inodarika iya yakapindurwa nemuongorori, kusanganisira mibvunzo nezvetsvagurudzo, kodzero dzako somunhu anoshanda mukutsvakurudza kana kukuvara-kwakanangana nekutsvaga; kana iwe uchiona kuti wabatwa zvisina kunaka uye uchida kutaura nemumwe munhu asiri nhengo yetimu yekutsvagura, ndapota inzwa wakasununguka kubata Medical Medical Council of Zimbabwe panhare 791792/791193 uye 0784956128 kana kero inotevera:

Medical Research Council of Zimbabwe
Cnr. J. Tongogara & Mazowe Street
P.O. Box CY 573
Causeway
Harare

**Adolescent Assent (13-17 Years)**

**Zita rekudzidza:** Zvirongwa zvekufambisa dzakachengetedzeka tsika dzebonde muvachiri kuyaruka kuburikidza nehutano hwakasanganiswa hutano mumatunhu akasarudzwa eZimbabwe

- ✓ Ini ndinonzwisisa kuti ndakakumbirwa kutora chikamu muchidzidzo pamusoro pe: "Kugadzira nzira dzekufambisa dzakadzivirirwa dzepabonde muvachiri kuyaruka kuburikidza nehutano hwakabatana masisitimu eZimbabwe".
- ✓ Ini ndichanzi ndipindure kumibvunzo yakabvunzwa nemuongorori uchishandisa bhuku remibvunzo, izvo zvinotora anenge maminitsi gumi nemashanu.
- ✓ Ini ndinonzwisisa kuti ini handifanire kutora chikamu. Kana ndikatora chikamu, ndinogona kurega chero nguva.
- ✓ Ini zvakare ndinonzwisisa kuti ini handifanire kupindura chero mibvunzo yandisingade kupindura kana kuita chero chinhu chandisingade kuita.
- ✓ Vabereki vangu / vachengeti vepamutemo kana chero munhuwo zvake haazive zvandataura kana kuita muongororo. Hapana mumwe kunze kwevaongorori vanoziva.

Kuongorora uku kuri kuitwa naWilfred Njabulo Nunu weUniversity of Venda. Nhare yake inhamba dzinoti +263 772 984 539 / + 263 713 083 081 uye yake email kero ni njabulow@gmail.com / Wilfred.nunu@nust.ac.zw.

Kana paine mibvunzo kana zvinondinetsa nezve chidzidzo ichi, ndinogona kumufonera uye kumubvunza nezvavo. Kana ini ndikasaina zita rangu, izvi zvinoreva kuti ndinobvuma kutora chikamu muchiongororwa uye kuti yangu yese mibvunzo yakapindurwa. Ini ndakapihwa futi fomu iyi.

**Siginecha:**…… **Zuva:**……..

## **Appendix 13:** Adolescent Assent Form (10-12 years) (MRCZ): English Version

***MRCZ FORM 110***

IRB No. **MRCZ/A/2611**

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Adolescent Assent Form 10-12 years-** Version 2.0 Date: 17 July 2020

**Project Title:** Strategies to facilitate safe sexual practices in adolescents through integrated health systems in selected districts of Zimbabwe

**Principal Investigator:** Wilfred Njabulo Nunu (MPH)

**Phone number:** +263 772984539 / +263 713083081

**What you should know about this research study:**

I am conducting a study that is meant to develop a way that would ensure that you get all the help that is required regarding sexual health issues that are of concern to you. In Zimbabwe, we have two places (systems) where we can get sexual health services that are from the clinics or hospitals as well as from the traditional healers. It has been observed that traditional healers and those from the clinics and hospitals do not work together when it comes to your sexual health needs. You have therefore been selected to participate in this study where we are trying to come up with ways to ensure that these people work together in providing sexual health services that you need. You should know that you are not forced to participate in this study and if you choose to participate you can withdraw anytime if you feel you are not able to continue. You should also understand that you will not be paid for participating in this study but you will be given snacks during or after participation. I assure you that what you will say will not be shared with your parents or the people you stay with and no one will know what you said. If you agree to participate kindly sign this paper and write your name.

| | |
|---|---|
| Name of Child *(please print)* | Date & time |
| Sign *(please print)* | Date& time |
| Signature of Witness *(if required)* | Date & time |
| Signature of Research Staff | Date & time |

## **Appendix 14:** Adolescent Assent Form (10-12 years) (MRCZ): isiNdebele Version

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Adolescent Assent Form 10-12 years-** Version 2.0 Date: 17 July 2020

| | |
|---|---|
| **Isihloko Sochwayisiso:** | Amasu wokwelekelela indlela ezocansi eziphephileyo kwabatsha (adolescents) ngokusebenzisa amasistimu ahlanganisiweyo ezempilo kuma District akhethiweyo kwele Zimbabwe |
| **Umchwayisisi omkhulu:** | Wilfred Njabulo Nunu (MPH) |
| **Inombolo Zocingo:** | +263 772984539 / +263 713083081 |

**Okummele ubekwazi ngalolu chwayisiso:**

Senza uphenyo lokusungula amasu okuqiniseka ukubana lithola lonke uncedo oluludingingayo ekukhuleni kwenu mayelana lezemancansini. Kwele Zimbabwe kulendlela ezimbili ezinanzelelwayo zokuncediseka ngezemacansi ezigoqela izibhedlela lokuncedwa ngokwesintu. Kunanzelelekile ukubana lezindlela zombili abantu bakhona kabasebenzi ndawonye njalo kabasebenzisani entweni eziphathelane lani instha ngokwe macansini. Ngaloludaba ke, ukhethiwe ukuba ube yingxenye yophenyo oluzama ukusungula amasu okuthi le imihlobo emibili yezempilakahle isebenzisane njalo iphathisane entweni zentsha zemacansini. Kummele uzwisise ukubana awubanjwa ngamandla ukuba yingxenye yo phenyo lolu, njalo uma uvumile ukuba yingxenye uyavunyelwa ukuguqula ingqondo uzikhulule laloba uphenyo lungakapheli. Kumele uzwisise njalo ukubana akulambadalo ozayiphiwa ngokuba yingxenye yaloluphenyo, loba nje lizaphiwa imadlana yokuthenga okuqandisa umphimbo ngesikhathi ulwazi luthatshwa kuwe. Ngiywakwethembisa njalo ngiqinisekisa ukuthi ozakukhuluma uphendula imibuzo kuzagcinwa kuyimfihlo njalo abazali lezihlobo zakho ngeke zibe kwazi okukhulumileyo. Uma uvuma ukuba yingxenye yaloluphenyo cibitshela leliphepha njalo ubhale ibizo lakho.

| | |
|---|---|
| Ibizo Lomtwana *(please print)* | Usuku & isikhathi |
| Cibitshela *(please print)* | Usuku & isikhathi |
| Isicibitshelo so mfakazi *(if required)* | Usuku & isikhathi |
| Isicibitshelo Somchwayisisi | Usuku & isikhathi |

## **Appendix 15:** Adolescent Assent Form (10-12 years) (MRCZ): Shona Version

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**Adolescent Assent Form 10-12 years-** Version 2.0 Date: 17 July 2020

**Musoro wetsvagurudzo:** Zvirongwa zvekufambisa dzakachengetedzeka tsika dzebonde muvachiri kuyaruka kuburikidza nehutano hwakasanganiswa hurongwa mumatunhu akasarudzwa eZimbabwe

**Mutungamiri/Vatungamiri vetsvagurudzo:** Wilfred Njabulo Nunu (MPH)

**Nhamba yenhare:** +263 772984539 / +263 713083081

**Zhaunofanira kuziva nezvekutsvagurudza uru:**

Ndiri kuitisa chidzidzo chakagadzirirwa kuvandudza nzira chinoita kuti uve nechokwadi chekuti unowana rubatsiro rwese runodikanwa maererano nenyaya dzehutano hwepabonde dzinokunetsa. MuZimbabwe tine nzvimbo mbiri (masisitimu) kwatinowana rubatsiro rwehutano hwepabonde urwo hunobva kumakiriniki kana kuzvipatara uye kubva kun'anga dzechivanhu. Izvo zvakaonekwa kuti varapi vechinyakare uye avo vanobva kumakiriniki nezvipatara havashande pamwe kana zvasvika kune zvaunoda nezvehutano hwepabonde. Iwe saka wakasarudzwa kuti utore chikamu mune chino chidzidzo ichi apo isu tiri kuyedza kuuya nenzira dzekuona kuti vanhu ava vanoshanda pamwechete mukupa hutano hwepabonde hwaunoda. Iwe unofanirwa kuziva kuti haimanikidzwe kutora chikamu muchidzidzo ichi uye kana ukasarudza kutora chikamu iwe unogona kubvisa chero nguva kana iwe uchinzwa kuti haukwanise kuenderera. Iwe unofanirwa zvakare kunzwisisa kuti hauchabhadharwe mukutora chikamu mune chino chidzidzo asi iwe uchapihwa zvekudya panguva kana mushure mekutora chikamu. Ndinokuvimbisa kuti zvauchataura hazvigovaniswe nevabereki vako kana nevanhu vaunogara navo uye hapana anozoziva

zvawataura. Kana iwe uchibvuma kutora chikamu nemutsa kusaina pepa iri uye nyora zita rako.

| | |
|---|---|
| _____ | _____ |
| Zita reMwana (*Please print*) | Zuva & nguva |
| _____ | _____ |
| Siginecha *(please print)* | Zuva & nguva |
| _____ | _____ |
| Siginecha yeChapupu *(if required)* | Zuva & nguva |
| _____ | _____ |
| Siginecha yeVashandi veKutsvaga | Zuva & nguva |

# **Appendix 16:** Interviews for Community Leaders, Traditional Attendants and Herbalists: English Version

1. What is your role in sexual issues in the community?
2. What is your role in adolescent sexual issues?
3. How do you determine whether adolescents are sexually active or not?
4. What is the role of tradition in adolescent sexuality?
5. Are there any challenges that have arisen due to cultural practices and how have they influenced adolescent sexual issues?
6. What is your relationship/ opinion with MHSs?
7. How do cultural practices in your view contribute to the prevention of STIs particularly HIV and AIDS as well as teenage pregnancy and school dropouts?
8. Some cultural practices such as initiations teach girls to be submissive and respectful of men, do you think this has a bearing on adolescent sexual issues particularly about STIs, HIV and AIDS and teenage pregnancy?
9. What is your relationship with modern sexual health facilities in relation to adolescent sexual issues?
10. What aspects of Indigenous Health System would you suggest should be incorporated into the Modern Health Systems and why?

# **Appendix 17:** Interviews for Community Leaders, Traditional Attendants and Herbalists: isiNdebele Version

**Ingxoxo zabakhokheli besigaba, labelapha ngemithi yesintu.**

1. Ndima bani oyidlalayo esigabeni ngendaba eziphathelene lezocansi?
2. Ndima bani oyidlalayo ngedaba zocansi kwabasakhulayo?
3. Ubona njani ukuthi abasakhulayo bayaya emacansini kumbe hatshi?
4. Amasiko adlala ndima bani endabeni zocansi kwabasakhulayo
5. Kulenkinga bani ezibangelwa ngamasiko njalo zenzani kumpumela yendaba eziphathelene lezocansi kabasakhulayo?
6. Udlala indima yiphi kwezocansi emphakathini?
7. Ngokubona kwakho amasiko avikela njani imikhuhlane yengulamakhwa, kakhulu i-HIV le AIDS kuhlanganisela Ukuzithwala kwabasakhulayo lokuqamulela isikolo?
8. Amanye amasiko afana leyokufundisa abasanda kuthomba afundisa amankazana ukuthi ahloniphe abesilisa, ucabanga ukuthi lokhu kulokwenza kwezocansi ikakhulu kungulamakhwa, HIV le AIDS kanye lokuzithwala kwabasakhulayo
9. Ulobudlelwano bani labazempilakahle mayelana lezocansi zabatsha?
10. Yiziphi izici zoHlelo lwezeNdabuko ongafisa ukuthi zifakwe enhlelweni zesimanje zeMpilo futhi kungani?

# **Appendix 18:** Interviews for Community Leaders, Traditional Attendants and Herbalists: Shona Version

**Bvunzurudzo vatungamiri munharaunda, vatungamiri vezve tsika nemagariro**

1. Basa renyu nderekuita sei nezvekudzidziswa nezvepabonde munharaunda yenyu?
2. Basa renyu ndere chi mukudzidzisa vana vechidiki nezvehutano hwepabonde?
3. Munozviona sei kuti vana vechidiki vakuita zvepabonde kana kuti havasati vatanga?
4. Zvetsika nemagariro zvinoshandei kunyaya dzepabonde?
5. Pane matambudziko amambosangana nawo here pamusoro pezve tsika nemagariro, izvi zvakabatana sei nezvehutano hwepabonde pavana vechidiki
6. Hukama hwenyu kana kuti maonero enyu akamira sei nezve zvirongwa zvemazuva ano zvioona nezvehutano
7. Semaonero enyu, Zvetsika nemagariro zvinoshanda sei kudzivirira zvirwere zvepabonde kunyanya che HIV ne AIDS nekuita nhumbu kwevana sekusia chikoro kwevana
8. Kumwe kudzidziswa nezvetsika nemagariro kunodzidzisa vechisikana ku remekedza nekuzvininipisa kuvanhu vechirume, semaonero enyu izvi zvingave zvichishandisana here nezvehutano hwepabonde kuvana kunyanya zvirwere zvepabonde, chirwere che HIV ne AIDS nekuita nhumbu kwevana
9. Hukama hwenyu nezvemaziviro enzvimbo dzinoona nezvehutano hwepabonde hwakamira sei kunyaya dzepabonde kuvana
10. Ndezvipi zvimwe zvezvinhu zvezvirongwa zvagara zviripo munharaunda zvioona nezvehutano zvamunoona kunge zvingasanganiswe nezvirongwa zvemazuva ano zvinezvekuita nezvehutano, sei masarudza izvozvo?

## **Appendix 19:** Focus Group Discussion with parents/guardians: English Version

1. What is your role in adolescent sexual issues?
2. How do you define IKS and do these relate or influence adolescent sexual experiences?
3. In your view what is the relationship between IHS and prevention of the spread of STIs such as HIV and AIDS?
4. Ideally in your view where should adolescent seek help from on issues relating to STIs and do you think it is appropriate and why?
5. What are your views regarding IHS and Health Systems?
6. Do you think these should be integrated and why?
7. What challenges or reservations do you have on the integration of the two?
8. What strategies should be considered to facilitate this integration?
9. Do you think this integration would result in improved sexual health outcomes of adolescents and how?

# **Appendix 20:** Focus Group Discussion with parents/guardians: isiNdebele Version

**Ukuxoxisana kweqembu okugxilwe kulo labazali / labondli**

1. Ndima bani oyidlalayo kwezocansi lwabasakhulayo?
2. Ngabe uyichaza kanjani i-IKS futhi ingabe lokhu kuhlobana loba kulobudlelwano bani lezocansi lwabasakhulayo?
3. Ngokubona kwakho yibuphi ubudlelwano obukhona phakathi kwe-IHS lokuvimbela ukuthelelwana kwezifo ezithathelwana emacansini njengegciwane lesandulela ngculazi lengculazi?
4. Ngombono wakho abasakhulayo kumele badinge ngaphi usizo ngemikhuhlane yemacansini njalo ucinga ukuthi leyo ndawo ilungile?
5. Ulombono bani nge IHS le MHS?
6. Ngombono wakho IHS le MHS mele ibanjaniswe njalo yindaba?
7. Ubone nkinga bani ezingatholakala ngokubanjaniswakwe IHS le MHS?
8. Yiwaphi amasu anga setshenziswa ukubambanisai IHS le MHS amasistimu lawa?
9. Ngombono wakho ubona engathi ukubanjaniswa kwe IHS le MHS kungathuthukisa impumela yezocansi yabasakhulayo?

# **Appendix 21:** Focus Group Discussion with parents/guardians: Shona Version

**Hurukuro yetarisa boka nevabereki**

1. Basa renyu nderei kunyaya dzepabonde kuvana
2. Semaonero enyu hurukuro yezvirongwa zveruzivo chi? Uye zve zvinofambidzana sei nezvepabonde kuvana
3. Semaonero enyu hurukuro yezvirongwa zveruzivo irikushandisana sei mukudzivirira kuwanda kwezvirwere zvepabonde kunyanya HIV ne AIDS
4. Semaonero enyu vana vechidiki ava vanofanirwa kuwana rubetsero kunani panyaya dzezvirwere zvepabonde, munofungidzira kuti zvakakodzera here, sei madaro?
5. Munozviona sei izvi zve hurukuro yezvirongwa zveruzivo nezvirongwa zvinoona nezvehutano?
6. Semaonero enyu izvi zvinofanirwa kubatanidzwa here? Sei madaro?
7. Ndeapi matambudziko amuri kusangana nawo kubatanidza izvozvo zvimbiri
8. Ndezvipi zvingaitiwe kuitira kuti izvo zvimbiri zvibatanidzwe?
9. Murikufungidzira kuti zvimbiri izvo zvikasanganidzwa zingabetsere here kuhutano hwepabonde kuvana?

## **Appendix 22:** Interviews with Health Care Providers: English Version

1. Overview of adolescent STI trends

2. The role of the Health System in adolescent sexual issues

3. The perceived challenges acting as barriers to adolescent sexual health in facilities in relation to HSs

4. Potential IK factors to be factored into the health systems and the perceived benefits

# **Appendix 23:** Interviews with Health Care Providers: isiNdebele Version

**Ingxoxo labazempilakahle**

1. Umkhuhlane wengulamakhwa kwabasakhulayo ngamafitshane

2. Indima edlalwa luHlelo Lwezempilo endabeni zocansi zentsha

3. Inkinga eziyimigoqo endwaweni lapho abasakhulayo abathola khona ulwazi ngezocansi kuphathelene leHSs

4. Okwesintu okungangezelelwa kwezempilo lenzunzo engatholakala.

# Appendix 24: Interviews with Health Care Providers: Shona Version

**Bvunzurudzo ne vanhu kana kuti nebazi rinoona nezvehutano**

1. Chidimbu chinoona nezvemaitiro ezvirwere zvepabonde kuvana

2. Basa re zvirongwa zvinoona nezvehutano kunyaya dzepabonde kuvana

3. Matambudziko akabatana nezve kuziva nezvezvirongwa zvagara zviripo munharaunda zvioona nezvehutano arikuonekwa kunge arikuvharidzira vana kuzvirongwa zvinoona nezvehutano kunyaya dzepabonde kuvana

4. Zvinhu zvezvirongwa zvagara zviripo munharaunda zvioona nezvehutano zvinofanirwa kuiswa kuzvirongwa zvinoona nezvehutano nekuti zvingabatsire sei

# **Appendix 25:** Questionnaire Structure for Adolescents: English Version

## SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

| | | |
|---|---|---|
| 1. Sex of respondent | Male ☐ Female ☐ | |
| 2. What day, month and year, were you born? | Day ☐ month ☐ year ☐ | |
| 3. How old were you on your last birthday | Years old ☐<br>Cross Check with Date of birth and reconcile | |
| 4. Can you read, for example, a newspaper | Yes ☐<br>No ☐ | |
| 5. Have you ever attended school? | Yes ☐<br>No ☐ | If No proceed to question 10 |
| 6. What is the highest level of schooling you completed? | Primary ☐<br>Secondary ☐<br>Tertiary ☐<br>None ☐ | |
| 7. Are you currently attending regular school, college or university? | Yes ☐<br>No ☐ | If no proceed to question 10 |
| 8. How many years of education do you expect to receive? | Number of Years ☐ | |
| 9. How old were you when you left school, college or university | Age ☐ | |
| 10. What is your religion? | None ☐<br>Catholic ☐<br>Protestant ☐<br>Pentecostal ☐<br>Other specify…… | |

| | | |
|---|---|---|
| 11. How often do you usually attend religious services? | Every day ☐<br>At least once a week ☐<br>At least once a month ☐<br>At least once a year ☐<br>Never ☐ | |
| 12. How important is religion in your life? | Important ☐<br>Not important ☐ | |
| 13. Which cultural tribe do you belong to? | Xhosa ☐<br>Ndebele ☐<br>Lemba ☐<br>Shona ☐<br>Other specify…….. | |
| 14. Are /were you gainfully employed? | Yes ☐<br>No ☐ | If no skip to Section B |
| 15. What type of work are you doing/did? | …… | |
| 16. How much are you earning/did you earn per month? | Amount ☐ | |

**SECTION B: PRACTICES**

| | | |
|---|---|---|
| 17. Do you find it difficult or easy to talk with your guarding/parents about things that are important to you? | Very easy ☐<br>Easy ☐<br>Average ☐<br>Difficult ☐<br>Very difficult ☐<br>Do not see them. ☐ | |
| 18. Do you ever discuss sex-related issues with anyone? | Yes ☐<br>No ☐ | |
| 19. Who/what has been the most important source of sexual information to you? | Initiation schools ☐<br>School-teacher parents/guardians ☐<br>Siblings ☐<br>Other family members ☐<br>Friends ☐<br>Health care providers ☐<br>Media ☐<br>Other specify…….. | |
| 20. Have you ever heard about cultural initiation schools? | Yes ☐<br>No ☐ | |
| 21. Have you ever been involved in cultural initiation ceremonies? | Yes ☐<br>No ☐ | |
| 22. Have you ever been involved in sexual activities? | Yes ☐<br>No ☐ | If no proceed to question 30 |
| 23. At what age was your first sexual encounter? | Age ☐ | |
| 24. What method do/did you use to prevent pregnancy or contracting STIs? | Condom ☐<br>Withdrawal ☐<br>Pill ☐<br>Injection ☐ | |

| | | |
|---|---|---|
| | Other specify…….. | |
| 25. Have you ever suffered from any STIs? | Yes ☐<br>No ☐ | If No proceed to question 27 |
| 26. How were you treated? | Went to traditional healers/ herbalist ☐<br>Went to a health facility ☐<br>Did not seek treatment ☐<br>Other specify…….. | |
| 27. Have you ever been pregnant/ have you ever made a woman pregnant? | Yes ☐<br>No ☐ | If No proceed to Section C |
| 28. What happened to the pregnancy? | Currently pregnant ☐<br>Abortion ☐<br>Miscarriage ☐<br>Live birth ☐ | |

**SECTION C: REASONS FOR ENGAGING IN SEXUAL ACTIVITIES AND EXTENT OF SUPERVISION**

| | | |
|---|---|---|
| 29. Tell me which statement is true about your sexual encounter (s). | I wanted to have sex ☐<br>My partner wanted us to have sex ☐<br>Neither of us wanted but it just happened ☐<br>I was culturally obliged to ☐<br>Other specify…… | |
| 30. Were you ever taught how you were supposed to have sex? | Yes ☐<br>No ☐ | If No proceed to question 32 |
| 31. Who taught you? | Cultural initiation ☐<br>Brothers ☐<br>Sisters ☐<br>School curriculum ☐ | |

| | | |
|---|---|---|
| | Other family members ☐<br>Other specify…….. | |

**SECTION D: ROLE OF IHS AND HOW IT RELATES TO ADOLESCENT SEXUAL EXPERIENCES**

| | | |
|---|---|---|
| 32. What activities are carried out at initiation schools? | Sexual education ☐<br>Circumcision ☐<br>Vaginal modifications ☐<br>Other……. | |
| 33. Do these activities influence your decisions to engage in sexual activities? | Yes ☐<br>No ☐ | |
| 34. If yes to Question 33, elaborate how | ……..<br>…….. | |
| 35. Have you encountered any challenges in these initiation schools? | Yes ☐<br>No ☐ | |
| 36. If yes to question 35 elaborate | ……<br>…… | |

**SECTION E: ROLE OF MODERN HEALTH SYSTEM IN SHAPING SEXUAL EXPERIENCES**

| | | |
|---|---|---|
| 37. Do you receive health education on reproductive health issues from health service providers? | Yes ☐<br>No ☐ | If No Proceed to question 39 |
| 38. How did you interact with health service providers? | Through school health services ☐<br>From health facility ☐<br>Through media ☐<br>Other specify…… | |

**SECTION F: VIEWS OF ADOLESCENTS ON POTENTIAL INTEGRATION OF IHS AND MHS**

| | | |
|---|---|---|
| 39. Do you perceive IHS as being important in shaping your sexual health? | Yes ☐<br>No ☐ | |
| 40. If yes to question 39 above elaborate | ……<br>……..<br>…… | |
| 41. Do you perceive MHS as being important in shaping your sexual health? | Yes ☐<br>No ☐ | |
| 42. If yes to question 41 above elaborate | ……..<br>…… | |

43. What do you think should be done to integrate these two health systems (IHS and MHS)

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# **Appendix 26:** Questionnaire Structure for Adolescents: isiNdebele Version

**Isakhiwo semibuzo yabasakhulayo**

**ISIQEPHU A: I-SOCIO-DEMOGRAPHIC CHARACTERISTICS**

| | | |
|---|---|---|
| 1. Ubulili bophendulayo | Owesilisa ☐ Owesifazane ☐ | |
| 2. Wazalwa mhlaka bani, yiphi inyanga njalo lomnyaka? | Usuku ☐ Inyanga ☐ Umnyaka ☐ | |
| 3. uleminyaka emingaki egcweleyo? | Iminyaka ☐<br>Qathanisa lelanga eliphiweyo elokuzalwa | |
| 4. Uyenelisa yini ukubala, okuthi lephephandaba ungalibala? | Yebo ☐<br>Hatshi ☐ | |
| 5. Wake wafunda esikolo yini? | Yebo ☐<br>Hatshi ☐ | Uma hatshi qhubekela kumbuzo 10 |
| 6. Wama kusiphi isigaba kwezemfundo? | e primary ☐<br>e secondary ☐<br>ekolitshini/ university ☐<br>Kangiqedanga banga ☐ | |
| 7. Okwakhathesi uyafunda esikolo, ekolitshini kumbe e-university? | Yebo ☐<br>Hatshi ☐ | Uma hatshi qhubekela kumbuzo 10 |
| 8. Ukhangelele ukufunda okweminyaka emingaki ihlanganisiwe? | Inani leminyaka ☐ | |
| 9. Wawuleminyaka emingaki utshiya isikolo, ikolitshi kumbe inyuvesi? | Iminyaka ☐ | |
| 10. Iyini Inkolo yakho? | Kangila nkolo ☐ | |

| | | |
|---|---|---|
| | Umkhatholika ☐<br>Umbhikishi ☐<br>Ngumphentekhosti ☐<br>Olunye ukholo Cacisa…… | |
| 11. Uvame ukuhamba kangaki ezinkozweni? | Nsukuzonke ☐<br>Okungaba kanye ngeviki ☐<br>Okungaba kanye ngenyanga ☐<br>Okungaba kanye ngonyaka ☐<br>Kangiyi ☐ | |
| 12. Lubaluleke kangakanani ukholo empilweni yakho? | Lubalulekile ☐<br>Alubalulekanga ☐ | |
| 13. Ungumhlobo bani? | Xhosa ☐<br>Ndebele ☐<br>Lemba ☐<br>Shona ☐<br>Esinye isizwe chacisa…….. | |
| 14. Uqhatshiwe kumbe wake waqhatshwa? | Yebo ☐<br>hatshi ☐ | Uma hatshi qhubekela ku Siqephu B |
| 15. Wenza msebenzi bani kumbe wawusenza msebenzi bani? | …… | |
| 16. Uhola malini kumbe wawuhola malini ngenyanga? | Inani ☐ | |

**ISIQEPHU B: IZENZO**

| | | |
|---|---|---|
| 17. Ngabe ukuthola kunzima loba kulula ukukhuluma Labakondlayo loba abazali bakho ngezinto ezibalulekileyo kuwe? | Kulula kakhulu ☐<br>Kulula ☐<br>kuphakathi laphakathi ☐<br>Kunzima ☐<br>Kunzima kakhulu ☐<br>Kangibaboni ☐ | |
| 18. Uyaxoxa ngezocansi lomunye umuntu? | Yebo ☐<br>Hatshi ☐ | |
| 19. Ngubani / yini obengumthombo obaluleke kakhulu wolwazi lwezocansi kuwe? | Izikole zokuthomba ☐<br>Umbalisi esikolweni Abazali labakukhangelayo ☐<br>Ozalwa labo ☐<br>Izihlobo ☐<br>Abangane ☐<br>Abezempilakahle ☐<br>Abezindaba ☐<br>Abanye cacisa…… | |
| 20. Wake wezwa yini ngemibuthano yesintu yokufundisa amasiko ekuthombeni kwakho? | Yebo ☐<br>Hatshi ☐ | |
| 21. Wake wafundiswa ngamasiko ekuthombeni kwakho? | Yebo ☐<br>Hatshi ☐ | |
| 22. Suke waya emacansini? | Yebo ☐<br>Hatshi ☐ | Uma hatshi qhubekela kumbuzo 30 |
| 23. Wawuleminyaka emingaki uqala ezocansi? | Iminyaka ☐ | |
| 24. Wasebenzisa indlela ziphi ukuvikela imikhuhlane yocansi lokuvikela ukuthi ungakkhulelwa kumbe ukukhulelisa? | Ikhondomu ☐<br>Ukukhipha ☐ | |

| | | |
|---|---|---|
| | Amaphilisi ☐<br>Ijekiseni ☐<br>Okunye Cacisa……. | |
| 25. Suke wabulawa yimkhuhlane yezocansi? | Yebo ☐<br>Hatshi ☐ | Uma hatshi qhubekela kumbuzo 27 |
| 26. Welatshwa njani? | Ngiye kubelaphi bendabuko kumbe ☐<br>abasebenzisa izihlahla zesintu<br>☐<br>Ngaya kwabezomtholampilo<br>Kangelatshwanga ☐<br>Okunye cacisa……. | |
| 27. Sewake wazithwala kumbe sowake wakhulelisa? | Yebo ☐<br>Hatshi ☐ | Uma hatshi qhubekela ku Siqephu C |
| 28. Kwenzakalani ngo mthwalo? | Sikhulelwe lakhathesi ☐<br>sakhutshwa isisu ☐<br>Saswelwa ☐<br>Kwabelethwa ☐ | |

**ISIQEPHU C: INHLOSO ZOKUYA NGASEMACANSINI NJALO LOKUSEKELWA KIZO.**

| | | |
|---|---|---|
| 29. Yiwuphi umutsho oliqiniso ngokuya kwakho emacansini? | Ngangifuna ukuya ocansini ☐<br>Umlingani wami wayefuna ukuthi senze ezemacansini ☐<br>Akekho kithi owayefuna kodwa kwenzeka njeI ☐<br>Ngangi phoqelelwa ngamasiko ukuba kwenzeke ☐<br>Okunye cacisa…… | |
| 30. Wake wafundiswa ukuthi wenzanjani ezocansi? | Yebo ☐<br>Hatshi ☐ | Uma hatshi qhubekela kumbuzo 32 |

| | | |
|---|---|---|
| 31. Wafundiswa ngubani? | Okufundwa amasiko ☐<br>Abanewethu ☐<br>Odadewethu ☐<br>Yizifundo zasesikolweni ☐<br>Amanye amalunga omdeni<br>Okunye cacisa…….. | |

**ISIQEPHU D: INDLELA OKUXHUMENE NGAYO PHAKATHI KWENDLELA ZOKWELAPHA NGOKWESINTU LEZEMACANSINI KWABATSHA**

| | | |
|---|---|---|
| 32. Yiyiphi imisebenzi eyenziwayo embuthanweni yokuthomba? | Izifundo zocansi ☐<br>Ukusokwa ☐<br>Okuphathelane lezitho zabesintwana ☐<br>Okunye……. | |
| 33. Izinqumo zaKho ngezocansi zingabe zi bangelwa ngowakufundayo? | Yebo ☐<br>Hatshi ☐ | |
| 34. Uma uthe yebo kumbuzo 33, chasisa ukuthi njani | ……..<br>…….. | |
| 35. Sewake wahlangana lenkinga ezikolweni lezi zokwalukwa? | Yebo ☐<br>Hatshi ☐ | |
| 36. Uma uthe yebo kumbuzo 35, chasisa ukuthi njani | ……<br>…… | |

**ISIQEPHU E: OKWENZIWA ZINDLELA EZINTSHA ZEMPILAKAHLE KOKUPHATHELENE LEZOCANSI**

| | | |
|---|---|---|
| 37. Wawuke uthole imfundiso evela kwabazempilakahle ephathelene lezocansi, ukuzithwala lokukhulelisa? | Yebo ☐<br>Hatshi ☐ | Uma hatshi qhubekela kumbuzo 39 |
| 38. Wahlangana njani labazempilakahle? | Ngemisebenzi yezempilo yesikolweni ☐<br>Kusuka esikhungweni sezempilo ☐<br>Ngokusebenzisa abezindaba ☐ | |

| | | |
|---|---|---|
| | Okunye Cacisa…… | |

**ISIQEPHU F: IMIBONO YABASAKHULAYO NGOKUBANJANISWA KWE IHS LE MHS**

| | | |
|---|---|---|
| 39. Ngokubona kwakho iIHS iqakathekile ekuzwisiseni kwakho kwezocansi? | Yebo ☐<br>Hatshi ☐ | |
| 40. Uma uthe yebo kumbuzo 33, chasisa | ……<br>……..<br>…… | |
| 41. ngokubona kwakho I MHS iqakathekile ekuzwisiseni kwakho kwezocansi? | Yebo ☐<br>Hatshi ☐ | |
| 42. Uma uthe yebo kumbuzo 41, chasisa | ……..<br>…… | |

43. Ubona ingathi kungenziwani ukuze kubanjaniswe inhlelo lezi zombili (IHS le MHS)

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# **Appendix 27:** Questionnaire Structure for Adolescents: Shona Version

**Mamiriro ebvunzurudzo yevana**

**Chikamu A: SOCIO-DEMOGRAPHIC CHARACTERISTICS**

| | | |
|---|---|---|
| 1. Munhui arikupindura | Murume ☐ Mukadzi ☐ | |
| 2. Wakabarwa zuva, mwenzi negore ripi? | Zuva ☐ mwedzi ☐ gore ☐ | |
| 3. Wanga unemakore mangani pazuva rako rekubarwa rapfura? | Makore ☐<br>Tarisa nezuva rake rekubarwa uone kuti zvirikupindirana here | |
| 4. Unogona here kuverenga? Chero riri bepa nhau | Hongu ☐<br>Kwete ☐ | |
| 5. Wakamboenda kuchikoro? | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva waenda kuna nhamba theni |
| 6. Wakadzidza kusvika pa nhanho ipi? | Primary ☐<br>Secondary ☐<br>Tertiary ☐<br>None ☐ | |
| 7. Urikuenda kuchikoro here, chero che nhanho yipi? | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva waenda kuna nhamba theni |
| 8. Urikutarisira makore mangani uchidzidza? | Makore ☐ | |
| 9. Wanga une makore mangani pawakapedza chikoro | Makore ☐ | |
| 10. Uri wechitendero chipi? | Handina ☐<br>Catholic ☐ | |

| | | |
|---|---|---|
| | Protestant ☐<br>Pentecostal ☐<br>zvimwe…… | |
| 11. Kuchitendero chawakasarudza unofamba kazhinji sei? | Mazuva ose ☐<br>kamwe chete pasvondo ☐<br>kamwe chete pamwedz ☐<br>kamwe chete pagore ☐<br>Handiende ☐ | |
| 12. Chitendero chawakasarudza chakakukoshera sei? | Chakandikoshera ☐<br>Hachina kukosha ☐ | |
| 13. Uri werudzi ripi? | Xhosa ☐<br>Ndebele ☐<br>Lemba ☐<br>Shona ☐<br>Other specify…….. | |
| 14. Urikushanda kana kuti waishanda here? | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva maita chikamu chinotevera |
| 15. Waiita basa rei kana kuti urikuiita basa rei? | …… | |
| 16. Urikutambira marii kana kuti waitambira marii? | Mari ☐ | |

**SECTION B: Miitiro**

| | | |
|---|---|---|
| 17. Zvakaoma here kana kuti zvakakurerukira kutaura nevabereki vako kana kuti vanokuchengeta pamusoro pezvinhu zvakakosha muhupenyu hwako | Zvakarerukisisa ☐<br>Zvakareruka ☐<br>Zvakareruka hazvo ☐<br>Zvakaoma ☐<br>Zvakaomesesa ☐<br>Handivaone. ☐ | |
| 18. Unombokurukura here nenyaya dzepabonde chero nemuhnu? | Hongu ☐<br>Kwete ☐ | |
| 19. Dzidziso zhinji yehurukuro yenyaya dzepabonde unoiwana kupi kana kuti kunani | Kuzvikoro zvetsika nemaga ☐<br>Vadzidzisi kuchikoro kuvabereki ☐<br>vakoma ☐<br>Other family members ☐<br>shamwari ☐<br>Vachengeti vehutano ☐<br>kuvezvenhau ☐<br>Zvimwe…… | |
| 20. Wakombonzwa nezvikoro zvetsika nemagariro? | Hongu ☐<br>Kwete ☐ | |
| 21. Wakambopinda mumabasa etsika nemagariro here? | Hongu ☐<br>Kwete ☐ | |
| 22. Wakamboita here zvepabonde? | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva waenda kumubvunzo wechi30 |
| 23. Wakatanga kuita zvepabonde munemakore mangani? | Makore ☐ | |
| 24. Unoshandisei kana kuti waishandisa chii kuzvidzivirira mukubata kwenhumbu nezvirwere? | Kondomu ☐<br>Withdrawal ☐ | |

| | | |
|---|---|---|
| | mapiritsi ☐<br>jekiseni ☐<br>zvimwe…… | |
| 25. Wakamborwara here nezvirwere zvinowanikwa baponde (STIs)? | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva waenda kumubvunzo wechi 27 |
| 26. Wakarapiwa sei? | Ndakarapiwa pachivanhu ☐<br>Ndakaenda kuchipatara ☐<br>Handina kutsvaka mishonga ☐<br>Zvimwe…… | |
| 27. Wakamboita nhumbu here kana kunhumburisa musikana? | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva waenda kuchikamu cha C |
| 28. Chi chakaitika ku nhumbu yacho? | ichiripo nhumbu yacho ☐<br>Akabvisa nhumbu ☐<br>akarasikirwa nenhumbu ☐<br>akabara ☐ | |

**Chikamu C: Zvikonzero zvinoita kuti vanhu vaite zvepabonde uye zve nekutarisirwa**

| | | |
|---|---|---|
| 29. Pahurukuro yenyaya dzebonde ndeipi irichokwadi | Ndaida kuita zvepabonde ☐<br>Munhu wandaidanana naye ndie aida kuti i zvepabonde ☐<br>Ini nemunhu wangu tanga tisingadi asi zvakangoitika ☐<br>Ndaitevedzera zvetsika nemagariro ☐<br>zvimwe…… | |
| 30. Wakambodzidziswa kuti bonde rinoitiwa sei? | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva waenda kumubvunzo wechi32 |

| | | |
|---|---|---|
| 31. Ndiani akakudzidzisa? | Zvetsika nemagariro ☐<br>Vakoma vangu ☐<br>Vana sisi vangu ☐<br>Kuchikoro ☐<br>Hama dzangu ☐<br>Kumwe,<br>Vamwe, vanani…….. | |

**Chikamu D: BASA REHURUKURO YEZVORONGWA ZVORUZIVO NOKUTI ZVINOSHANDISANA SEI NEZVEPABONDE KUVANA**

| | | |
|---|---|---|
| 32. Ndeipi mitambo inoitiwa kuzvikoro zvetsika nemagariro? | Kudzidziswa nezve pabonde ☐<br>Kuchecheudzwa ☐<br>Vaginal modifications ☐<br>Zvimwe……. | |
| 33. Mitambo iyi ingave inokuita kuti ufunge kuita zvepa bonde here? | Hongu ☐<br>Kwete ☐ | |
| 34. Kana wati hongu kumbvunzo wechi 33, tsanangura kuti sei | ……..<br>…….. | |
| 35. Wakambosangana nezvaikuvhiringidza here kuzvikoro izvi dze tsika nema gariro? | Hongu ☐<br>Kwete ☐ | |
| 36. Kana wati hongu kumbvunzo wechi 35, tsanangura | ……<br>…… | |

**SECTION E: Basa rezvirongwa zvehutano kunyaya dzepabonde**

| | | |
|---|---|---|
| 37. Vanoona nezvebazi rezvehutano vanombonokudzidzisai here nezvehutano | Hongu ☐<br>Kwete ☐ | Kana ati kwete ibva waenda kumubvunzo wechi 39 |
| 38. Waishandisana sei nevanoona nezvebazi rehutano? | Kuzvikoro ☐<br>Kuzvipatara ☐<br>Kuvezvenhau ☐<br>zvimwe…… | |

**SECTION F: Maonero evana mukubatanidzwa kwe zvirongwa zveruzivo rwehutano ne nezvirongwa zvemazuva ano zvioona nezvehutano**

| | | |
|---|---|---|
| Zvirongwa zvagara zviripo munharaunda zvioona nezveutano nezvirongwa zvemazuva ano<br><br>39. Munofungidzira kuti hurukuro yezvirongwa zvehutano yakakosha here nezvehutano hwepabonde | Hongu ☐<br>Kwete ☐ | |
| 40. Kana mati hongu kumubvunzo wechi 39, tsanangurai | ……<br>……..<br>…… | |
| 41. Munofungidzira kuti zvirongwa zvemazuva ano zvioona nezvehutano zvakakosha here muhutano hwepabonde | Hongu ☐<br>Kwete ☐ | |
| 42. Kana mati hongu kumubvunzo wechi 41, tsanangurai | ……..<br>…… | |

43. Munofungidzira kuti chi chingaitiwe kubatanidza zvirongwa zvinokurukura nezvehutano ne zvirongwa zvemazuva ano zvioona nezvehutano

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# **Appendix 28:** Checklist: English Version

| **Progress Toward Result Quality Criteria** | | **Yes** | **No** | **Comments or revisions to be made** |
|---|---|---|---|---|
| 1 | Do you think the strategies present credible outputs, outcomes and impacts? | ☐ | ☐ | |
| 2 | Do you think the strategies are in line with your values and beliefs, if not what do you think needs to be incorporated or changed | ☐ | ☐ | |
| 3 | Do you think the proposed activities would facilitate the integration of IHS and MHS | ☐ | ☐ | |
| 4 | The proposed intervention strategies are appropriate for adolescents? If not what do you think needs to be changed? | ☐ | ☐ | |
| 5 | The proposed duration of the implementation of strategies appropriate to adolescents and you as a key stakeholder | ☐ | ☐ | |
| 6 | Outcomes reflect reasonable, progressive steps that adolescents can make toward longer-term results | ☐ | ☐ | |
| 7 | Outcomes address awareness, attitudes, perceptions, knowledge, skills and/or behaviour of adolescents | ☐ | ☐ | |
| 9 | It seems fair or reasonable to hold the program accountable for the outcomes specified | ☐ | ☐ | |
| 10 | The outcomes are specific, measurable, action-oriented, realistic and timed | ☐ | ☐ | |
| 11 | The outcomes are written as change statements (for example things increase, decrease, or stay the same). | ☐ | ☐ | |
| 12 | The outcomes are achievable within the proposed budgets and reporting periods specified. | ☐ | ☐ | |
| 13 | The impact, as specified, is not beyond the scope of | ☐ | ☐ | |

| | | | | |
|---|---|---|---|---|
| | the strategies to achieve | | | |
| 14 | What is your overall judgment of the proposed strategy? | | | |

# **Appendix 29:** Checklist: isiNdebele Version

| **Progress Toward Result Quality Criteria** | | **Yebo** | **Hatshi** | **Imbono yabahlanganyeli** |
|---|---|---|---|---|
| 1 | Ngabe ucabanga ukuthi amasu la azaletha imiphumela ethembekileyo? | | | |
| 2 | Ngabe amasu la ayahambisana lenkolo zakho uma kungenjalo kuyini ofuna kutshintshwe kumbe kumbe kwengezelelwe? | | | |
| 3 | Ngombono wakho amasu la angenelisa ukubambanisa I IHS le MHS | | | |
| 4 | Ngabe lamasu aqondile kwabasakhulayo? Nxa engaqondile kuyini okumele kutshintshwe? | | | |
| 5 | Ngokubona kwakho ithuba lesikhathi esifakiweyo sokusungula lamasu siqondile kwabasakhulayo lakuwe? | | | |
| 6 | Impumela itshengisa inhlelo okumele abasakhulayo bazithathe ukuba bathole impumela ezahlala okwesikhathi eside empilweni zabo? | | | |
| 7 | Impumela iyakhomba ukuqaphela, isimo sengqondo, ulwazi, imibono lokuziphatha kwabasakhulayo? | | | |
| 9 | Kubukeka kukuhle loba kuhluzekile ukuthi imiphumela iyabe ingenxa yohlelo? | | | |
| 10 | Imiphumela isegcekeni njalo ingalinganiswa njalo ilamaqiniso ilesikhathi esiqondileyo? | | | |
| 11 | Impumela ibhalwe ngendlela etshengisa inguquko (isibonelo kwengezeleleka, kuyaphunguka kumbe akutshintshanga). | | | |
| 12 | Impumela iyafumaneka ngesabelomali langesikhathi esihleliweyo? | | | |

| | | | | |
|---|---|---|---|---|
| 13 | Impumela loba umthelela kawukho ngaphandle kwamasu abekiwe? | | | |
| 14 | Ngokugoqelekile sahlulelo bani ongasibeka kulamasu ahlosiweyo? | | | |

# **Appendix 30:** Checklist: Shona Version

| **Progress Toward Result Quality Criteria** | | **Hongu** | **Kwete** | **Comments Revision** |
|---|---|---|---|---|
| 1 | Semaonero enyu mazano aya anobudisa zviito nemigumisiro zvinechokwadi here? | | | |
| 2 | Semaonero enyu mazano aya anofambidzana netsika nezvitendero zvenyu here, kana muchiti kwete munofungidzira kuti pangaisiwe zvipi kana kuti pangachinjwe papi? | | | |
| 3 | Semaonero enyu mabasa aya arongwa anga simudzira kubatanidzwa kwe hurukuro yezvirongwa zveruzivo ne zvirongwa zvemazuva ano zvioona nezvehutano here | | | |
| 4 | Mazano arongwa kubetsera vana akakodzera here? Kana muchiti kwete munofungidzira kuti ndezvipi zvingachinjwe | | | |
| 5 | Nguva yarongwa kushandisa mazano arongwa yakakodzera kuvana nemi sevabatani | | | |
| 6 | Migumisiro irikuratidza zvinemusoro, nebudiriro kuti vana vanogona kuita migumisiro iyi kwenguva refu | | | |
| 7 | Migumisiro inoratidza kuziva, mafungiro, maonero, kuziva, unyanzvi hwevana | | | |
| 9 | Zvakakodzera uye zvinemusoro kuti chirongwa ichi ndicho chirikuita kuti tione budiriro yatsanangurwa pamusoro | | | |
| 10 | Migumisiro iyi yakananga uye ichinzwisisika, inoedzanekesa, Chiito chinotungamirirwa, inoitika uye inoshanda nenguva | | | |
| 11 | Migumisiro iyi yakanyorwa muzvinyorwa zvinoratidza kuchinja kwezvinhu, semuenzaniso, | | | |

| | | | | |
|---|---|---|---|---|
| | kuti zvinhu zvirikuwedzera, kuderera kana kufanana | | | |
| 12 | Migumisiro iyi inogoneka panguva dzarongwa nemari dzarongwa | | | |
| 13 | Kuitika, sezvataurwa hazvisati zvapfuura mazano kuti zvitiike | | | |
| 14 | Semaonera ako nezvizere unoti chi nezano rarongwa? | | | |

# **Appendix 31:** Author Guidelines; BMC's Journal of Reproductive Health

**Reproductive Health**

Research

Criteria

Research articles report the methods and results of an original study.

*Reproductive Health* requires that all datasets on which the conclusions of the paper rely should be available to readers. We encourage authors to ensure that their datasets are either deposited in publicly available repositories (where available and appropriate) or presented in the main paper or additional supporting files whenever possible. Please see Springer Nature's information on recommended repositories.

Please carefully review our Editorial Policies and our Standards of Reporting section before submitting.

Additional non-English language abstracts & full papers

BioMed Central can support German, Spanish, French, Norwegian and Portuguese abstracts and full papers.
To include a non-English language abstract only within the article, the additional abstract should be placed after the official English language abstract in the submitted paper file and should not exceed 350 words. Please ensure you indicate the language of your abstract.

Authors can also include a non-English version of their full paper to be published with their English language article. The non-English paper must be uploaded to Editorial Manager along with the other paper files at the time that the revised version of the paper is requested.

Plain English summary

All articles in *Reproductive Health* require a Plain English summary of no more than 250 words, in addition to the Abstract. This should be a summary of the article written in language suitable for patients and the wider public to easily understand. It should not contain technical terminology or complicated statistics. Please include this within the main body of your paper file. Please do not include the plain English summary as part of the official scientific abstract that is requested separately by the journal submission system. The plain English summary should be inserted immediately after the official scientific abstract within the paper file under the heading "Plain English summary".

By adding a plain English summary, we hope to broaden the reach of the article and bring it to the attention of a more general audience. Researchers are trained to be highly focused, specific, and conservative with extrapolation and speculation. These attributes are useful for scientific publications, but not for wider public understanding. Many non-scientists have difficulty understanding technical terms and jargon, and the public requires more context-setting by way of introduction and more help drawing a conclusion.

The following resources provide further information: INVOLVE Plain English summaries resource; The Plain English Campaign guide on medical writing; Cochrane Library.

### Additional non-English language abstract

An additional non-English language abstract can be included within the article. The additional abstract should be placed after the official English language abstract in the submitted paper file and should not exceed 350 words. Please ensure you indicate the language of your abstract. In addition to English, we can support German, Spanish, French, Norwegian and Portuguese abstracts.

## Preparing your paper

The information below details the section headings that you should include in your paper and what information should be within each section.

Please note that your paper must include a 'Declarations' section including all of the subheadings (please see below for more information).

### Title page

The title page should:

Present a title that includes, if appropriate, the study design e.g.:

"A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"

Or for non-clinical or non-research studies a description of what the article reports

List the full names and institutional addresses for all authors

If a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be searchable

through their individual PubMed records, please include this information in the "Acknowledgements" section in accordance with the instructions below

Indicate the corresponding author

## Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the CONSORT extension for abstracts. The abstract must include the following separate sections:

Background: the context and purpose of the study

Methods: how the study was performed and statistical tests used

Results: the main findings

Conclusions: brief summary and potential implications

Trial registration: If your article reports the results of a health care intervention on human participants, it must be registered in an appropriate registry and the registration number and date of registration should be in stated in this section. If it was not registered prospectively (before enrollment of the first participant), you should include the words 'retrospectively registered'. See our editorial policies for more information on trial registration

## Keywords

Three to ten keywords representing the main content of the article.

## Background

The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

## Methods

The methods section should include:

The aim, design and setting of the study

The characteristics of participants or description of materials

A clear description of all processes, interventions and comparisons. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses

The type of statistical analysis used, including a power calculation if appropriate

Results

This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.

Discussion

This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

Conclusions

This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.

List of abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations should be provided.

Declarations

All papers must contain the following sections under the heading 'Declarations':

Ethics approval and consent to participate

Consent for publication

Availability of data and materials

Competing interests

Funding

Authors' contributions

Acknowledgements

Authors' information (optional)

Please see below for details on the information to be included in these sections.

If any of the sections are not relevant to your paper, please include the heading and write 'Not applicable' for that section.

*Ethics approval and consent to participate*

Papers reporting studies involving human participants, human data or human tissue must:

Include a statement on ethics approval and consent (even where the need for approval was waived)

Include the name of the ethics committee that approved the study and the committee's reference number if appropriate

Studies involving animals must include a statement on ethics approval and for experimental studies involving client-owned animals, authors must also include a statement on informed consent from the client or owner.

See our editorial policies for more information.

If your paper does not report on or involve the use of any animal or human data or tissue, please state "Not applicable" in this section.

*Consent for publication*

If your paper contains any individual person's data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. All presentations of case reports must have consent for publication.

You can use your institutional consent form or our consent form if you prefer. You should not send the form to us on submission, but we may request to see a copy at any stage (including after publication).

See our editorial policies for more information on consent for publication.

If your paper does not contain data from any individual person, please state "Not applicable" in this section.

*Availability of data and materials*

All papers must include an 'Availability of data and materials' statement. Data availability statements should include information on where data supporting the results reported in the article can be found including, where applicable, hyperlinks to publicly archived datasets analysed or generated during the study. By data we mean the minimal dataset that would be necessary to interpret, replicate and build upon the findings reported in the article. We recognise it is not always possible to share research data publicly, for instance when individual privacy could be compromised, and in such instances data availability should still be stated in the paper along with any conditions for access.

Data availability statements can take one of the following forms (or a combination of more than one if required for multiple datasets):

The datasets generated and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS]

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

All data generated or analysed during this study are included in this published article [and its supplementary information files].

The datasets generated and/or analysed during the current study are not publicly available due [REASON WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

The data that support the findings of this study are available from [third party name] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [third party name].

Not applicable. If your paper does not contain any data, please state 'Not applicable' in this section.

More examples of template data availability statements, which include examples of openly available and restricted access datasets, are available here.

BioMed Central also requires that authors cite any publicly available data on which the conclusions of the paper rely in the paper. Data citations should include a persistent identifier (such as a DOI) and should ideally be included in the reference list. Citations of datasets, when they appear in the reference list, should include the minimum information recommended by DataCite and follow journal style. Dataset identifiers including DOIs should be expressed as full URLs. For example:

Hao Z, AghaKouchak A, Nakhjiri N, Farahmand A. Global integrated drought monitoring and prediction system (GIDMaPS) data sets. figshare. 2014. http://dx.doi.org/10.6084/m9.figshare.853801

With the corresponding text in the Availability of data and materials statement:

The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS].[Reference number]

If you wish to co-submit a data note describing your data to be published in *BMC Research Notes*, you can do so by visiting our submission portal. Data notes support open data and help authors to comply with funder policies on data sharing. Co-published data notes will be linked to the research article the data support (example).

For more information please email our Research Data Team.

*Competing interests*

All financial and non-financial competing interests must be declared in this section.

See our editorial policies for a full explanation of competing interests. If you are unsure whether you or any of your co-authors have a competing interest please contact the editorial office.

Please use the authors initials to refer to each authors' competing interests in this section.

If you do not have any competing interests, please state "The authors declare that they have no competing interests" in this section.

*Funding*

All sources of funding for the research reported should be declared. The role of the funding body in the design of the study and collection, analysis, and interpretation of data and in writing the paper should be declared.

*Authors' contributions*

The individual contributions of authors to the paper should be specified in this section. Guidance and criteria for authorship can be found in our editorial policies.

Please use initials to refer to each author's contribution in this section, for example: "FC analyzed and interpreted the patient data regarding the hematological disease and the transplant. RH performed the histological examination of the kidney, and was a major contributor in writing the paper. All authors read and approved the final paper."

*Acknowledgements*

Please acknowledge anyone who contributed towards the article who does not meet the criteria for authorship including anyone who provided professional writing services or materials.

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See our editorial policies for a full explanation of acknowledgements and authorship criteria.

If you do not have anyone to acknowledge, please write "Not applicable" in this section.

Group authorship (for papers involving a collaboration group): if you would like the names of the individual members of a collaboration Group to be searchable through their individual PubMed records, please ensure that the title of the collaboration Group is included on the title page and in the submission system and also include collaborating author names as the last paragraph of the “Acknowledgements” section. Please add authors in the format First Name, Middle initial(s) (optional), Last Name. You can add institution or country information for each author if you wish, but this should be consistent across all authors.

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*Footnotes*

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

References

Examples of the Vancouver reference style are shown below.

See our editorial policies for author guidance on good citation practice

Web links and URLs: All web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the paper. They should be provided in full, including both the title of the site and the URL, as well as the date the site was accessed, in the following format: The Mouse Tumor Biology Database. http://tumor.informatics.jax.org/mtbwi/index.do. Accessed 20 May 2013. If an author or group of authors can clearly be associated with a web link, such as for weblogs, then they should be included in the reference.

Example reference style:

*Article within a journal*

Smith JJ. The world of science. Am J Sci. 1999;36:234-5.

*Article within a journal (no page numbers)*

Rohrmann S, Overvad K, Bueno-de-Mesquita HB, Jakobsen MU, Egeberg R, Tjønneland A, et al. Meat consumption and mortality - results from the European Prospective Investigation into Cancer and Nutrition. BMC Medicine. 2013;11:63.

*Article within a journal by DOI*

Slifka MK, Whitton JL. Clinical implications of dysregulated cytokine production. Dig J Mol Med. 2000; doi:10.1007/s801090000086.

*Article within a journal supplement*

Frumin AM, Nussbaum J, Esposito M. Functional asplenia: demonstration of splenic activity by bone marrow scan. Blood 1979;59 Suppl 1:26-32.

*Book chapter, or an article within a book*

Wyllie AH, Kerr JFR, Currie AR. Cell death: the significance of apoptosis. In: Bourne GH, Danielli JF, Jeon KW, editors. International review of cytology. London: Academic; 1980. p. 251-306.

*OnlineFirst chapter in a series (without a volume designation but with a DOI)*

Saito Y, Hyuga H. Rate equation approaches to amplification of enantiomeric excess and chiral symmetry breaking. Top Curr Chem. 2007. doi:10.1007/128_2006_108.

*Complete book, authored*

Blenkinsopp A, Paxton P. Symptoms in the pharmacy: a guide to the management of common illness. 3rd ed. Oxford: Blackwell Science; 1998.

*Online document*

Doe J. Title of subordinate document. In: The dictionary of substances and their effects. Royal Society of Chemistry. 1999. http://www.rsc.org/dose/title of subordinate document. Accessed 15 Jan 1999.

*Online database*

Healthwise Knowledgebase. US Pharmacopeia, Rockville. 1998. http://www.healthwise.org. Accessed 21 Sept 1998.

*Supplementary material/private homepage*

Doe J. Title of supplementary material. 2000. http://www.privatehomepage.com. Accessed 22 Feb 2000.

*University site*

Doe, J: Title of preprint. http://www.uni-heidelberg.de/mydata.html (1999). Accessed 25 Dec 1999.

*FTP site*

Doe, J: Trivial HTTP, RFC2169. ftp://ftp.isi.edu/in-notes/rfc2169.txt (1999). Accessed 12 Nov 1999.

*Organization site*

ISSN International Centre: The ISSN register. http://www.issn.org (2006). Accessed 20 Feb 2007.

*Dataset with persistent identifier*

Zheng L-Y, Guo X-S, He B, Sun L-J, Peng Y, Dong S-S, et al. Genome data from sweet and grain sorghum (Sorghum bicolor). GigaScience Database. 2011. http://dx.doi.org/10.5524/100012.

Figures, tables and additional files

See General formatting guidelines for information on how to format figures, tables and additional files.

Submit paper

Annual Journal Metrics

Speed
135 days to first decision for reviewed papers only
74 days to first decision for all papers
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20 days from acceptance to publication

Citation Impact
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2.836 - 5-year Impact Factor
1.407 - Source Normalized Impact per Paper (SNIP)
1.223 - SCImago Journal Rank (SJR)

Usage
1,102,036 Downloads
1,502 Altmetric mentions

More about our metrics

Reproductive Health

ISSN: 1742-4755

**Appendix 32:** Author Guidelines; Elsevier's Journal of Adolescent Health

# JOURNAL OF ADOLESCENT HEALTH

Official Publication of the Society for Adolescent Health and Medicine

ELSEVIER

AUTHOR INFORMATION PACK

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ISSN: 1054-139X

## DESCRIPTION

*The Journal of Adolescent Health* is a multidisciplinary scientific Journal dedicated to improving the health and well-being of adolescents and young adults. The Journal publishes new research findings in the field of **Adolescent and Young Adult Health** and **Medicine** ranging from the basic biological and behavioral sciences to public health and policy. We seek original manuscripts, brief reports, review articles, clinical case reports, letters to the editor, and commentaries from our colleagues in Anthropology, Education, Ethics, Global Health, Health Services Research, Law, Medicine, Mental and Behavorial Health, Nursing, Nutrition, Psychology, Public Health and Policy, Social Work, Sociology, Youth Development, and other disciplines that work with or are committed to improving the health and well-being of adolescents and young adults. In addition we seek poetry, personal narratives, images, and other creative works from young people, family and community members, and health professionals that deepen our insights into the lived experiences of **adolescents** and **young adults** in a way that can augment scientific peer-reviewed research.

The Journal is the official publication of the Society for Adolescent Health and Medicine (SAHM), a multidisciplinary organization committed to improving the health and well-being of adolescents and young adults. One of the Society's primary goals is the development, synthesis, and dissemination of scientific and scholarly knowledge unique to the health needs of young people. To meet this goal, the Society established *The Journal of Adolescent Health* in 1980.

## AUDIENCE

Pediatricians, General Practitioners, Family Practitioners, Nurses, Preventive Medicine Specialists, Psychologists, Public Health Professionals, Obstetricians and Gynecologists, Epidemiologists, Nutritionists, Anthropologists, Sociologists, and Psychiatrists.

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2019: 3.945 © Clarivate Analytics Journal Citation Reports 2020

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Current Contents - Social & Behavioral Sciences
Social Services Abstracts
Biochemistry & Biophysics Citation Index
Cumulative Index to Nursing and Allied Health Literature
Embase
PsycINFO
PubMed/Medline
Applied Social Science Index and Abstracts
Current Contents - Clinical Medicine
Reference Update
Behavioral Medicine Abstracts
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"Submission Checklist"

### Types of articles

The *Journal of Adolescent Health* publishes the following types of articles. Word count limits apply only to the main body of the manuscript and do not include the title, references, or figure and table captions.

*Original Articles*
Original Articles are full-length scientific reports on the results of original research. Text is limited to 3500 words with a 250-word structured abstract, 5 tables/figures, and 40 references. Original articles should include a 50-word Implications and Contribution summary statement.

*Adolescent Health Briefs*
Adolescent Health Briefs are brief scientific reports of original research that represent preliminary findings, small samples, and newly described associations in unique populations. Briefs are limited to 1000 words, with a structured abstract of 150 words or less. A combined total of 2 figures and/or tables and a maximum of 20 references will be accepted. Briefs should include a 50-word Implications and Contribution summary statement.

*Review Articles*
Review Articles provide a high-quality summary of existing science in a specific area. Systematic reviews and meta-analyses are preferred, though strong, evidence-based integrative and narrative reviews will be considered for publication. All review articles are subject to a rigorous peer-review process. The format of the review article should include the introduction, review of the relevant literature, discussion, summary and implications section. Each review article must have a 200-word summary abstract. Review articles are limited to 4500 words, 5 tables/figures, and an unlimited number of references. Review articles should include a 50-word Implications and Contribution summary statement.

*Clinical Case Reports*
Case Reports represent rare and new observations in the clinical arena. Papers in this format are limited to 1000 words and should include an introduction, concise discussion of the clinical observation, and discussion. Clinical observations should include a 200-word summary abstract. A combined total of 1 figure, table, or illustration and 10 references will be accepted.

*Letters to the Editor*
Letters to the Editor typically represent correspondence regarding articles published in the Journal within the preceding 6 months. The author(s) of the article that is the subject of the correspondence will be invited to respond. Letters to the Editor may also be utilized to notify the Journal audience about reports, events, organizations, or other announcements that may be relevant to the international adolescent and young adult health community. Letters should not exceed 400 words. If appropriate, Letters can be accompanied with up to 5 references. This correspondence is published at the discretion of the Editor-in-Chief and the Associate Editors.

*Commentaries*
Commentaries serve as a forum for thoughtful discussions of critical issues in adolescent and young adult health, placed within the context of the scientific literature. Topics may include changes in relevant healthcare training and guidelines, governmental health policies and reports, international health, medical/scientific ethics, and meeting reports. Commentaries should not exceed 1,000 words and 10 references. Commentaries are published at the discretion of the Editor-in-Chief and the Associate Editors.

*Editorials*
Editorials are invited by the Editor-in-Chief and are linked to an original research article published in the same Journal issue. Editorials aim is to highlight important research findings and to place findings within a broader context for a wide audience. Editorials should not exceed 1,000 words and 20 references. Editorials are published at the discretion of the Editor-in-Chief and the Associate Editors.

*JAH Intersection*
*JAH Intersection* Section is a platform for sharing creative and artistic work by young people, family and community members, and health professionals. *JAH Intersection* intends to deepen our insights into the health and well-being of adolescents and young adults that can augment scientific peer-reviewed research. *JAH Intersection* amplifies the intersection of childhood with adulthood, and art

with science. Submitted work may take the form of written word (e.g., poetry, personal narratives), or images (e.g., photographs or two-dimensional artwork). Submissions from persons under the age of 18 years must be accompanied by written permission to submit from a legal guardian. If the submission involves a true patient story or image, the patient must be adequately de-identified or the author/artist must obtain the patient's written permission for publication and current contact information. This should be provided in a cover letter to the editorial team upon submission. Items accepted for publication in *JAH Intersection* Section may also be used by the Society for Adolescent Health and Medicine for professional educational and awareness purposes, and the person who submitted the work will always be acknowledged. Submissions are reviewed and selected by the *JAH Intersection* Section Committee, and published at the discretion of *The Intersection* Section Editor(s), Editor-in-Chief, and Associate Editors.

## The editorial process

*Acceptance for review*

Manuscripts submitted to the *Journal of Adolescent Health* are reviewed internally for interest and relevance. Approximately two thirds of all submitted manuscripts are returned to the authors following this internal review by the Editors; the remaining one-third are subjected to full peer-review. This decision is made quickly, within 10 days of submission.

*Peer review and decision*

Manuscripts accepted for peer review are sent to three external reviewers. Reviewers are anonymous; authors' names are revealed. The Journal's goal is to complete peer review and reach a decision within six weeks of submission.

Manuscripts will either be declined based on reviewer comments or referred back to the authors for revision. A Revise and Resubmit decision is an invitation to present a carefully revised draft for further peer review; it is not an acceptance.

Authors are asked to complete revisions within 30 days. If the authors do not respond within 30 days, the editors may decline to consider the revision. The editors reciprocate by providing a final decision quickly upon receipt of the revision.

*Appeal process*

Authors may appeal decisions. All appeals are reviewed by the Editor-in-Chief, on a case-by-case basis, or a designated Associate Editor if the Editor-in-Chief is recused from the review. This appeal must: (1) be submitted by the primary author in writing, (2) rebut the negative decision, and (3) be submitted within 30 days after the decision is rendered. Consideration of the appeal will be based on the appeal letter and the version of the manuscript that was peer reviewed. The decision of an appeal is final.

*Acceptance for publication*

All manuscripts accepted for publication will require a written assignment of the copyright from the author(s) to the Society for Adolescent Health and Medicine. Elsevier Inc. will maintain all records of the copyright for the Society for Adolescent Health and Medicine. No part of the published material may be reproduced elsewhere without written permission from the publisher.

Authors will receive typeset galley proofs via e-mail from the Journal Manager at Elsevier. Proofs should arrive approximately four to six weeks following acceptance. It is the corresponding author's responsibility to carefully review typeset galley proofs for accuracy.

*Articles Online First*

The *Journal of Adolescent Health* publishes articles online ahead of print publication in the Articles Online First section of our web site. Articles are published online approximately six to eight weeks following the galley proofs. The online article is identical to the version subsequently published in the print journal and is citable by the digital object identifier (DOI) assigned at the time of online publication.

*Fast-tracking for critical issues in adolescent health and medicine*

Manuscripts accepted for a fast-track review will receive a two-week expedited review. The Journal will notify authors of the outcome of the review within three weeks of submission. If the review is favorable, fast-track authors will be asked to complete any necessary revisions within two weeks.

Upon acceptance, fast-track manuscripts are prioritized for publication and should appear in print within two months.

Fast tracking is a rare event intended for high-priority findings and should not be viewed simply as a mechanism for an expedited review. The article should be prepared in the same manner as an Original Article.

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Until the time of publication on the *Journal of Adolescent Health*'s website, it is a violation of the copyright agreement to disclose the findings of an accepted manuscript to the media or the public. If you require an embargo date for your article, please contact the editorial office.

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Studies of human subjects must document that approval was received from the appropriate institutional review board. When reporting experiments utilizing human subjects, it must be stated in writing, in the Methods section, that the Institution's Committee on Human Subjects or its equivalent has approved the protocol. The protocol for obtaining informed consent should be briefly stated in the manuscript. The Editor-in-Chief may require additional information to clarify the safeguards about the procedures used to obtain informed consent. Within the United States, the authors should verify compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) prior to submission. When reporting experiments on animal subjects, it must be stated that the institution's animal care and use committee has approved the protocol.

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## Conflict of interest

According to the World Association of Medical Editors (WAME):

*"...a conflict of interest (competing interest) is some fact known to a participant in the publication process that if revealed later, would make a reasonable reader feel misled or deceived (or an author, reviewer, or editor feel defensive). Conflicts of interest may influence the judgment of authors, reviewers, and editors; these conflicts often are not immediately apparent to others. They may be personal, commercial, political, academic, or financial. Financial interests may include employment, research funding (received or pending), stock or share ownership, patents, payment for lectures or travel, consultancies, nonfinancial support, or any fiduciary interest in the company. The perception of a conflict of interest is nearly as important as an actual conflict, since both erode trust."*

Authors are required to disclose on the title page of the initial manuscript any potential, perceived, or real conflict of interest. Authors must describe the role of the study sponsor(s), if any, in (1) study design; (2) the collection, analysis, and interpretation of data; (3) the writing of the report; and (4) the decision to submit the manuscript for publication. Authors should include statements even when the sponsor had no involvement in the above matters. Authors should also state who wrote the first draft of the manuscript and whether an honorarium, grant, or other form of payment was given to anyone to produce the manuscript. If the manuscript is accepted for publication, the disclosure statements may be published. See also https://www.elsevier.com/conflictsofinterest. Further information and an example of a Conflict of Interest form can be found at: https://service.elsevier.com/app/answers/detail/a_id/286/supporthub/publishing.

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Note shortened form for last page number. e.g., 51–9, and that for more than 6 authors the first 6 should be listed followed by 'et al.' For further details you are referred to 'Uniform Requirements for Manuscripts submitted to Biomedical Journals' (J Am Med Assoc 1997;277:927–34) (see also Samples of Formatted References).

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The *Journal of Adolescent Health* accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 50 MB. Video and animation files supplied will be published online in the electronic version of your article on JAHOnline.org and Elsevier's ScienceDirect: http://www.sciencedirect.com. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages at https://www.elsevier.com/artworkinstructions. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

## Supplementary data

The *Journal of Adolescent Health* accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article on JAHOnline.org and Elsevier's ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at https://www.elsevier.com/artworkinstructions.

## Research data

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Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

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## Submission checklist

checklist The following list will be useful during the final checking of an article prior to sending it to the *Journal* for review. Please consult this Guide for Authors for further details of any item.
**Ensure that the following items are present:**

**Cover letter**

- Disclosure of any prior publications or submissions with any overlapping information
- A statement that the work is not under consideration elsewhere
- Disclosure of any potential conflict of interest, real and perceived, for all named authors
- Names and contact information for 5 potential reviewers

**Statements of Authorship**

•Please submit a separate statement for each named author

**Title page**

- Article title

• Full names, academic degrees (Masters level and above), and affiliations of all authors
• Name, address, e-mail address, telephone and fax number of the corresponding author
• Sources of funding and acknowledgements of support and assistance
• Disclosure of potential conflicts, real and perceived, for all named authors
• Clinical trials registry site and number
• List of abbreviations

**Manuscript**
• Please double-space
• BR>• Abstract in the appropriate format: Structured for Original Articles and Briefs or Summary for Review Articles and Clinical Observations
•BR>• List of keywords
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# **Appendix 33:** Author Guidelines; BMC's Journal of Public Health

## Research article

### Criteria

Research articles should report on original primary research, but may report on systematic reviews of published research provided they adhere to the appropriate reporting guidelines which are detailed in our editorial policies. Please note that non-commissioned pooled analyses of selected published research will not be considered. Studies reporting descriptive results from a single institution will only be considered if analogous data have not been previously published in a peer reviewed journal and the conclusions provide distinct insights that are of relevance to a regional or international audience.

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### Preparing your manuscript

The information below details the section headings that you should include in your manuscript and what information should be within each section.

Please note that your manuscript must include a 'Declarations' section including all of the subheadings (please see below for more information).

### Title page

The title page should:

present a title that includes, if appropriate, the study design e.g.:

"A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"

or for non-clinical or non-research studies a description of what the article reports

list the full names and institutional addresses for all authors

if a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be searchable through their individual PubMed records, please include this information in the "Acknowledgements" section in accordance with the instructions below

indicate the corresponding author

### Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the CONSORT extension for abstracts. The abstract must include the following separate sections:

**Background:** the context and purpose of the study

**Methods:** how the study was performed and statistical tests used

**Results:** the main findings

**Conclusions:** brief summary and potential implications

**Trial registration:** If your article reports the results of a health care intervention on human participants, it must be registered in an appropriate registry and the registration number and date of registration should be in stated in this section. If it was not registered prospectively (before enrollment of the first participant), you should include the words 'retrospectively registered'. See our editorial policies for more information on trial registration

### Keywords

Three to ten keywords representing the main content of the article.

### Background

The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

### Methods

The methods section should include:

the aim, design and setting of the study

the characteristics of participants or description of materials

a clear description of all processes, interventions and comparisons. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses

the type of statistical analysis used, including a power calculation if appropriate

### Results

This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.

### Discussion

This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

### Conclusions

This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.

### List of abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations should be provided.

## Declarations

All manuscripts must contain the following sections under the heading 'Declarations':

Ethics approval and consent to participate

Consent for publication

Availability of data and materials

Competing interests

Funding

Authors' contributions

Acknowledgements

Authors' information (optional)

Please see below for details on the information to be included in these sections.

If any of the sections are not relevant to your manuscript, please include the heading and write 'Not applicable' for that section.

### *Ethics approval and consent to participate*

Manuscripts reporting studies involving human participants, human data or human tissue must:

include a statement on ethics approval and consent (even where the need for approval was waived)

include the name of the ethics committee that approved the study and the committee's reference number if appropriate

Studies involving animals must include a statement on ethics approval and for experimental studies involving client-owned animals, authors must also include a statement on informed consent from the client or owner.

See our editorial policies for more information.

If your manuscript does not report on or involve the use of any animal or human data or tissue, please state "Not applicable" in this section.

### *Consent for publication*

If your manuscript contains any individual person's data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. All presentations of case reports must have consent for publication.

You can use your institutional consent form or our consent form if you prefer. You should not send the form to us on submission, but we may request to see a copy at any stage (including after publication).

See our editorial policies for more information on consent for publication.

If your manuscript does not contain data from any individual person, please state “Not applicable” in this section.

### *Availability of data and materials*

All manuscripts must include an ‘Availability of data and materials’ statement. Data availability statements should include information on where data supporting the results reported in the article can be found including, where applicable, hyperlinks to publicly archived datasets analysed or generated during the study. By data we mean the minimal dataset that would be necessary to interpret, replicate and build upon the findings reported in the article. We recognise it is not always possible to share research data publicly, for instance when individual privacy could be compromised, and in such instances data availability should still be stated in the manuscript along with any conditions for access.

Data availability statements can take one of the following forms (or a combination of more than one if required for multiple datasets):

The datasets generated and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS]

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

All data generated or analysed during this study are included in this published article [and its supplementary information files].

The datasets generated and/or analysed during the current study are not publicly available due [REASON WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

The data that support the findings of this study are available from [third party name] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [third party name].

Not applicable. If your manuscript does not contain any data, please state 'Not applicable' in this section.

More examples of template data availability statements, which include examples of openly available and restricted access datasets, are available here.

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Hao Z, AghaKouchak A, Nakhjiri N, Farahmand A. Global integrated drought monitoring and prediction system (GIDMaPS) data sets. figshare. 2014. http://dx.doi.org/10.6084/m9.figshare.853801

With the corresponding text in the Availability of data and materials statement:

The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS].[Reference number]

If you wish to co-submit a data note describing your data to be published in *BMC Research Notes*, you can do so by visiting our submission portal. Data notes support open data and help authors to comply with funder policies on data sharing. Co-published data notes will be linked to the research article the data support (example).

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All financial and non-financial competing interests must be declared in this section.

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Please use the authors initials to refer to each authors' competing interests in this section.

If you do not have any competing interests, please state "The authors declare that they have no competing interests" in this section.

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All sources of funding for the research reported should be declared. The role of the funding body in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript should be declared.

### *Authors' contributions*

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### *Acknowledgements*

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Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

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Always use footnotes instead of endnotes.

## References

Examples of the Vancouver reference style are shown below.

See our editorial policies for author guidance on good citation practice

**Web links and URLs:** All web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the manuscript. They should be provided in full, including both the title of the site and the URL, as well as the date the site was accessed, in the following format: The Mouse Tumor Biology Database. http://tumor.informatics.jax.org/mtbwi/index.do. Accessed 20 May 2013. If an author or group of authors can clearly be associated with a web link, such as for weblogs, then they should be included in the reference.

**Example reference style:**

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Smith JJ. The world of science. Am J Sci. 1999;36:234-5.

*Article within a journal (no page numbers)*

Rohrmann S, Overvad K, Bueno-de-Mesquita HB, Jakobsen MU, Egeberg R, Tjønneland A, et al. Meat consumption and mortality - results from the European Prospective Investigation into Cancer and Nutrition. BMC Medicine. 2013;11:63.

*Article within a journal by DOI*

Slifka MK, Whitton JL. Clinical implications of dysregulated cytokine production. Dig J Mol Med. 2000; doi:10.1007/s801090000086.

*Article within a journal supplement*

Frumin AM, Nussbaum J, Esposito M. Functional asplenia: demonstration of splenic activity by bone marrow scan. Blood 1979;59 Suppl 1:26-32.

*Book chapter, or an article within a book*

Wyllie AH, Kerr JFR, Currie AR. Cell death: the significance of apoptosis. In: Bourne GH, Danielli JF, Jeon KW, editors. International review of cytology. London: Academic; 1980. p. 251-306.

*OnlineFirst chapter in a series (without a volume designation but with a DOI)*

Saito Y, Hyuga H. Rate equation approaches to amplification of enantiomeric excess and chiral symmetry breaking. Top Curr Chem. 2007. doi:10.1007/128_2006_108.

*Complete book, authored*

Blenkinsopp A, Paxton P. Symptoms in the pharmacy: a guide to the management of common illness. 3rd ed. Oxford: Blackwell Science; 1998.

*Online document*

Doe J. Title of subordinate document. In: The dictionary of substances and their effects. Royal Society of Chemistry. 1999. http://www.rsc.org/dose/title of subordinate document. Accessed 15 Jan 1999.

*Online database*

Healthwise Knowledgebase. US Pharmacopeia, Rockville. 1998. http://www.healthwise.org. Accessed 21 Sept 1998.

*Supplementary material/private homepage*

Doe J. Title of supplementary material. 2000. http://www.privatehomepage.com. Accessed 22 Feb 2000.

*University site*

Doe, J: Title of preprint. http://www.uni-heidelberg.de/mydata.html (1999). Accessed 25 Dec 1999.

*FTP site*

Doe, J: Trivial HTTP, RFC2169. ftp://ftp.isi.edu/in-notes/rfc2169.txt (1999). Accessed 12 Nov 1999.

*Organization site*

ISSN International Centre: The ISSN register. http://www.issn.org (2006). Accessed 20 Feb 2007.

*Dataset with persistent identifier*

Zheng L-Y, Guo X-S, He B, Sun L-J, Peng Y, Dong S-S, et al. Genome data from sweet and grain sorghum (Sorghum bicolor). GigaScience Database. 2011. http://dx.doi.org/10.5524/100012.

**Figures, tables and additional files**

See General formatting guidelines for information on how to format figures, tables and additional files.

Submit manuscript

**Appendix 34:** Author Guidelines; Elsevier's International Journal of Nursing Studies

# INTERNATIONAL JOURNAL OF NURSING STUDIES

ELSEVIER

AUTHOR INFORMATION PACK

## TABLE OF CONTENTS




ISSN: 0020-7489

## DESCRIPTION

The *International Journal of Nursing Studies* (IJNS) provides a forum for original research and scholarship about **health care** delivery, organisation, management, workforce, policy and research methods relevant to **nursing**, **midwifery** and other health related professions. The *IJNS* aims to support evidence informed policy and practice by publishing research, systematic and other scholarly reviews, critical discussion, and commentary of the highest standard.

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The journal has been publishing original peer-reviewed articles of interest to the international health care community since 1963, making it one of the longest standing repositories of scholarship in this field. The IJNS offers authors the benefits of:

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- Rapid initial screening for suitability and editorial interest
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Nurses, midwives, educators, administrators and researchers in all areas of nursing and caring sciences.

## IMPACT FACTOR

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# GUIDE FOR AUTHORS

## 1. Introduction

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Papers should address issues of international interest and concern and present the study in the context of the existing international research base on the topic. Studies that focus on a single country should identify how the material presented might be relevant to a wider audience and how it contributes to the international knowledge base.

### *1.1 Types of papers and word limits*

The IJNS publishes original research, reviews, and discussion papers. Full papers can be a maximum of 7000 words in length (excluding references and text in tables or figures), although shorter papers are preferred. In addition we publish shorter editorials and letters, which comment on current or recent journal content.

#### 1.1.1 Research Papers — 2,000–7,000 words

IJNS publishes original research that matches the aims and scope of the journal. Research papers should adhere to recognised standards for reporting (see guidance below and the Author Checklist). Instrument development or validation papers are only considered if accompanied by a copy of the full instrument, included as a supplementary file at submission stage so it can be published as an appendix online if accepted.

#### 1.1.2 Reviews and Discussion Papers — 2,000–7,000 words

We publish systematic reviews (addressing focused research questions) and broader literature reviews (such as scoping reviews). We also publish discussion papers, which are scholarly articles of a debating or discursive nature. In all cases, there must be engagement with and critical analysis of a substantive body of research or other scholarship. Systematic reviews should adhere to recognised standards for reporting (see guidance below and the Author Checklist).

#### 1.1.3 Letters to the editor — up to 1000 words

Designed to stimulate academic debate and discussion, the Editor invites readers to submit letters that refer to and comment on recent content in the journal, introduce new comment and discussion of clear and direct relevance to the journal's aim and scope or briefly report data or research findings that may not warrant a full paper. Letters are restricted to a maximum of 10 references, from up to 5 authors

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Authors who have ideas for editorials which address issues of substantive concern to the discipline, particularly those of a controversial nature or linked directly to current/forthcoming content in the journal, should contact the Editor in Chief (ijns@kcl.ac.uk).

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Selection of papers for publication is based on their scientific excellence, distinctive contribution to knowledge (including methodological development) and their importance to contemporary nursing, midwifery or related professions. We strongly recommend prospective authors to consult our editorial on common reasons papers are rejected, which outlines avoidable pitfalls as well as the types of articles we prefer https://doi.org/10.1016/j.ijnurstu.2016.03.017.
We are unlikely to publish studies of new instruments unless the instrument is useful for directly guiding clinical practice (e.g. diagnostic/ screening instruments) and there is validation against a robust criterion. Preliminary instrument development studies indicating the need for further development, translations from one language to another and other pilot studies are unlikely to be accepted. We do not publish studies undertaken on animals.

### *1.3 Submission system*

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## 2. Before You Begin

### 2.1 Ethics in publishing

The IJNS is a supporter of the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals, issued by the International Committee for Medical Journal Editors (ICMJE), and to the Committee on Publication Ethics (COPE) code of conduct for editors. Our guidelines should be read in conjunction with this broader guidance. The ICJME requirements can be found at http://www.icmje.org/ and the COPE's guidelines at http://publicationethics.org.

The work to be described in your article must have been carried out in accordance with The Code of Ethics of the World Medical Association for experiments involving humans (Declaration of Helsinki) and research on health databases (Declaration of Taipei) https://www.wma.net/what-we-do/medical-ethics/. Further information on Ethics in Publishing and Ethical guidelines for journal publication can be found at: https://www.elsevier.com/authors/journal-authors/policies-and-ethics

### 2.2 Reporting guidelines

The editors require that manuscripts adhere to recognized reporting guidelines relevant to the research design used and require authors to submit a checklist verifying that essential elements have been reported for all primary research and systematic reviews. We suggest that you consult the guidelines at an early stage of preparing your manuscript. You can search for the correct guideline for your study using the tools provided by the EQUATOR network: http://www.equator-network.org/

The guideline used must be indicated in the journal's Author Checklist, which is to be submitted with every paper.

### 2.3 Study Registration

We encourage the prospective registration of studies and require it for clinical trials (as defined by the International Committee of Medical Journal Editors). Registration should occur by the time of patient enrolment. Where a study has been registered, please give the registration number within at the end of the abstract and in the body of the paper. Authors seeking to publish a prospective intervention study (other than clinical trials) that has not been registered in advance are encouraged to register at the earliest opportunity before submitting for publication.

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Informed consent must be sought from participants who are able to give it and this should be documented in the paper. Where informed consent is not obtained, consistent with recognised ethical principles and local legal frameworks this must also be documented in your paper. Ethical approval must be stated at an appropriate point in the article. The approving body and approval number should be identified in the manuscript. If the study was exempt from such approval the basis of such exemption and the regulatory framework must be described.

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All submissions (except letters and editorials) should include an abstract of 400 words or less.

In general, the following detail is required: Background, Objectives, Design, Settings (including geographical location if important), Participants; Methods; Results; and Conclusions, which should relate to study aims and hypotheses. Abstracts for Discussion Papers should provide a concise summary of the line of argument pursued and conclusions.

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'What the paper adds' should summarise new knowledge (outcomes) as opposed to offering process statements of what the paper does. eg. *"This review demonstrates that nurse-led intermediate care reduces hospital stay but increases total inpatient stay" (outcome) NOT "This review considers the impact of nurse-led intermediate care on acute stay and total inpatient stay" (process).*

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*3.3.5. Main manuscript text*
up to 2000 words

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Wherever possible give both point estimates and 95% confidence intervals for all parameters estimated by the study (e.g. group differences, frequency of characteristics). Exact p values should be given to no more than three decimal places. Do not interpret non-significant results as evidence that there is no difference / relationship. Please refer to the journal's position paper on reporting statistical significance and p-values https://doi.org/10.1016/j.ijnurstu.2019.07.001

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## **Appendix 35:** Letter of Editing by Copy Editor

Admire Ndlovu
Lecturer
National University of Science and Technology
P.O. Box AC 939
Ascot
Bulawayo
Zimbabwe

25 January 2021

TO WHOM IT MAY CONCERN

**REF: CONFIRMATION OF EDITING WILFRED NJABULO NUNU'S PhD THESIS**

I hereby acknowledge and confirm that I edited a PhD Thesis by Wilfred Njabulo Nunu titled **"STRATEGIES TO FACILITATE SAFE SEXUAL PRACTICES IN ADOLESCENTS THROUGH INTERGRATED HEALTH SYSTEMS IN SELECTED DISTRICTS OF ZIMBABWE".** I confirm that I did language editing as well as structural editing on the mentioned thesis.

Yours Sincerely

Admire Ndlovu (Mrs)
Phd Student (UNISA)
MSc in Publishing Studies (Moi University, Kenya)
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## **Appendix 36:** Letter from the Independent Coder

Nicholas Mudonhi
Lecturer and Researcher
National University of Science and Technology
P.O. Box AC 939
Ascot
Bulawayo
Zimbabwe

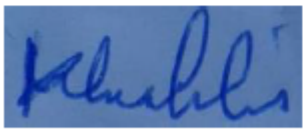
10 April 2021

TO WHOM IT MAY CONCERN

**REF: CONFIRMATION OF INDEPENDENT THEMATIC CODING FOR WILFRED NJABULO NUNU'S PhD THESIS**

I hereby acknowledge and confirm that I coded and generated themes that I compared to the themes that the above-mentioned Candidate generated for his two qualitative manuscripts for his PhD Thesis titled **"STRATEGIES TO FACILITATE SAFE SEXUAL PRACTICES IN ADOLESCENTS THROUGH INTEGRATED HEALTH SYSTEMS IN SELECTED DISTRICTS OF ZIMBABWE".** I confirm that I independently coded and did thematic analysis for the qualitative manuscripts associated with this PhD thesis.

Yours Sincerely



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