

IMPACT OF PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) PROGRAMS ON HIV PREVALENCE RATES IN JUBA, CENTRAL EQUATORIA STATE. A CROSS-SECTIONAL STUDY.

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Abstract.

Background.

The persistence of high HIV prevalence rates in Juba, despite ongoing health interventions, highlights a critical gap in the current response strategies. There is a pressing need for a renewed focus on tailored, sustainable solutions that address both the biomedical and socio-cultural dimensions of HIV prevention and care. This study determined the Impact of Prevention of mother-to-child transmission (PMTCT) programs on HIV prevalence rates in Juba, Central Equatoria State.

Methodology.

A cross-sectional study design was employed, utilizing qualitative and quantitative research methods. Data were collected through surveys and interviews with 142 participants, including healthcare providers and residents of Juba. Statistical analyses were conducted using regression models and correlation matrices to evaluate the impact of the HIV prevention strategies. The study was conducted in Juba, the largest city and capital of Central Equatorial State, South Sudan, an area with diverse demographics and significant HIV/AIDS challenges.

Results.

(78%) of the participants was male, the majority of participants (37%) fall within the 21-30 age group, a significant portion of the participants (32%) had known their HIV status for 2-5 years, 11.4% of respondents disagreed that they don't know that Mother to Child Transmission of HIV/AIDS is preventable, 93.2% of respondents agreed that they have heard about and have knowledge on PMTCT, 47% of respondents approved that HIV positive mothers in their community are a target for stigma and discrimination if they stop breastfeeding their children to Prevent MTCT.

Conclusion.

Prevention of mother-to-child transmission was found to be the least significant predictor affecting HIV/AIDS prevalence in Juba.

Recommendation.

HIV/AIDS service providers should embark on addressing the epidemic strategically from the root cause but not at the symptom level.

Keywords: Prevention of Mother to Child Transmission (PMTCT) programs, HIV prevalence rate, Juba.

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Background.

In South Sudan, the historical backdrop of HIV mirrors a complex interplay of epidemiological challenges and healthcare response capabilities that have evolved. Since gaining independence in 2011, the country has faced significant hurdles in addressing the HIV epidemic due to ongoing conflicts and limited healthcare infrastructure. The national prevalence rate has been consistently hovering around 2.7%, with certain states displaying higher rates due to varying socio-economic conditions and the mobility of populations (Jervase et al., 2018). Drilling down to the local

level, states, pajamas, and bomas in South Sudan show divergent patterns in the spread and management of HIV. In the state of Jonglei, towns like Bor have seen periodic spikes in HIV rates, particularly in populations affected by internal displacement and economic instability. In Central Equatoria, particularly in pajamas around Juba, efforts to curb the epidemic are frequently undermined by the transient nature of the population and logistical challenges in delivering consistent and comprehensive healthcare services. Focusing on Juba, the capital of Central Equatoria State, the city presents a unique case study due to its role as

both a political and economic hub. Historically, Juba has had fluctuating HIV prevalence rates, with current estimates suggesting that about 4.1% of the adult population is living with HIV (Nweze et al., 2017). The situation in Juba is complicated by high rates of urban migration, which often brings individuals into the city from rural areas with less access to HIV education and services. Despite these challenges, recent years have seen improved efforts in public health messaging, testing availability, and antiretroviral therapy coverage, which have begun to stabilize the situation (Taggart et al., 2021).

One critical gap is the absence of longitudinal data on the long-term health outcomes for children born to HIV-positive mothers, which limits the ability to assess the enduring effectiveness and safety of PMTCT interventions. Additionally, there are notable discrepancies in the implementation of PMTCT programs between urban and rural settings, suggesting an uneven distribution of resources and services that may hinder equitable access to these essential HIV prevention services. Furthermore, socio-economic barriers significantly restrict access to PMTCT services, indicating a need for interventions that address socio-economic issues alongside healthcare services to enhance the effectiveness of PMTCT programs. The lack of integration of PMTCT services with other maternal and child health services also presents a missed opportunity for providing comprehensive healthcare. The challenges posed by conflict in delivering effective PMTCT services highlight a critical area for improvement, with conflict severely undermining program outcomes and underscoring the need for robust mechanisms to sustain healthcare services during instability.

While the use of community health workers in rural areas is effective, the inconsistency in their training and support across different regions suggests that a more structured approach could enhance the reach and impact of PMTCT initiatives. Addressing these gaps could lead to more effective strategies for reducing HIV prevalence in South Sudan through enhanced, tailored PMTCT programs that are sensitive to the region's unique challenges. It is upon this complex background that this study aims to delve deeper into HIV preventive initiatives and prevalence rates in Juba, Central Equatoria State, South Sudan. This study determined the Impact of Prevention of mother-to-child transmission (PMTCT) programs on HIV prevalence rates in Juba, Central Equatoria State.

Methodology.

Research Design.

The research design adopted for this study was a mixed-method approach, integrating both quantitative and qualitative research methodologies to provide a comprehensive analysis of the phenomena under study. This design facilitated an extensive assessment of both the

measurable outcomes of HIV preventive initiatives and the qualitative experiences of individuals and communities affected by these programs. The quantitative aspect employed descriptive and inferential statistics to examine the relationships and impacts quantitatively. Conversely, the qualitative component utilized thematic analysis to delve into the contextual and experiential factors influencing these relationships, thus providing a deeper understanding of the underlying mechanisms and effects.

Research Approach.

The research approach was structured to be both exploratory and explanatory, aiming to uncover and clarify the dynamics between HIV preventive measures and their effectiveness in reducing prevalence rates. Initially, the exploratory facet helped in identifying significant patterns and trends within the collected data, guiding the subsequent explanatory investigation that sought to establish causal relationships and deduce the implications of the findings. This approach was instrumental in addressing the multifaceted nature of HIV prevention, which involves complex interactions between various stakeholders and elements within the healthcare system.

Study Population.

The study population comprised residents of Juba County, specifically targeting individuals directly affected by HIV, healthcare providers, and members of local non-governmental organizations involved in HIV preventive efforts. This population was chosen due to their firsthand experience and involvement in HIV prevention initiatives, making them crucial sources of both quantitative data and qualitative insights.

Sample Size Selection.

To ensure statistical significance and manageability, the sample size was calculated using the formula $n = \frac{N \cdot 1 + N \cdot (e^2)}{1 + N \cdot (e^2)}$, where N is the population size and the margin of error (presumed at 5%). Assuming an estimated population size of 1000 participants potentially available for the study, the sample size calculated was approximately 87 participants. This size was deemed sufficient to achieve a balance between statistical power and practical feasibility in data collection.

Sampling Techniques.

The sampling technique utilized was stratified random sampling, which involved dividing the entire population into different strata based on specific criteria such as age, gender, and role in HIV prevention. From each stratum, participants were randomly selected to ensure a representative sample that could adequately reflect the diverse perspectives and experiences within the community. This method not only enhanced the generalizability of the findings but also

ensured that all sub-groups within the population were fairly represented in the study.

Sources of Data.

Data for the study was collected from both primary and secondary sources to enrich the research outcomes. Primary data was obtained directly from the field through surveys, interviews, and direct observations, providing real-time, firsthand information from participants. Secondary data was gathered from existing records, academic journals, and reports from reputable organizations such as the World Health Organization and local health ministries. This dual-source approach was instrumental in validating the data collected and offering a comprehensive view of the subject matter.

Data Collection Tools/Instruments.

Various tools were employed to collect data, including structured questionnaires for quantitative data and semi-structured interviews for qualitative insights. Additionally, focus group discussions were conducted to facilitate an interactive sharing of views and experiences among participants, enhancing the depth of information obtained.

Research Procedure.

The data collection procedure was rigorously structured, beginning with a pilot study to test the effectiveness and clarity of the data collection instruments. Following refinements from the pilot feedback, the main data collection phase was executed, adhering strictly to the ethical guidelines established for the study. Participants were informed of the study's purpose, their role in it, and their rights, with all participants providing informed consent before participating.

Measurement of Variables.

The measurement of variables was carefully planned to align with the study's objective. The independent variable was gauged based on the coverage rate, program effectiveness, and support services for PMTCT programs. Dependent variables included HIV prevalence rates, the

incidence of new HIV infections, the rate of mother-to-child transmission, and community health outcomes. These measurements were quantified using scales and indexes developed through the study's preliminary research phase.

Validity and Reliability of Research Instruments.

The validity and reliability of the research instruments were thoroughly tested through a combination of pilot testing, peer review, and iterative feedback adjustments. The instruments were designed to ensure construct validity by accurately measuring the theoretical constructs they intended to measure. Reliability was ensured through test-retest methods, ensuring that the instruments were consistent and dependable over time.

Data Process and Analysis.

Data processing involved meticulous data entry, coding, and cleaning before analysis. Quantitative data analysis was performed using the statistical software IBM SPSS version 25, which facilitated the computation of descriptive and inferential statistics, including regression analysis and correlation coefficients. Qualitative data from interviews and focus groups was analyzed using NVIVO software, which supported thematic analysis to identify recurring patterns and themes within the data.

Results.

Demographic Data.

The study on HIV preventive initiatives and prevalence rates in Central Equatoria State, South Sudan, incorporated a demographic analysis to understand the background of the participants. This section provides insight into various personal attributes such as gender, age, religion, marital status, education level, occupation, and the duration of living with HIV or awareness of HIV status. The results from this analysis are critical for interpreting the impact of demographic factors on the effectiveness and reception of HIV preventive measures.

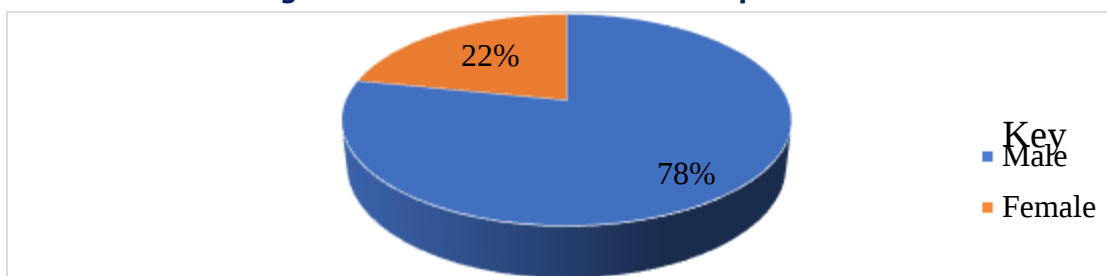
Gender.

Table 1: Gender Distribution of Participants.

Gender	Frequency	Percentage (%)
Male	111	78
Female	31	22
Total	142	100

Source: Survey data (2024)

Figure 1: Gender Distribution of Respondents.



The gender disparity is evident, with a significantly higher number of male participants (78%) compared to female participants (22%). This finding indicates a possible gender bias in accessibility or willingness to participate in HIV-related studies and initiatives. The underrepresentation of

females might impact the effectiveness of the preventive measures, as women often face unique challenges in health access and education, which are critical in the fight against HIV.

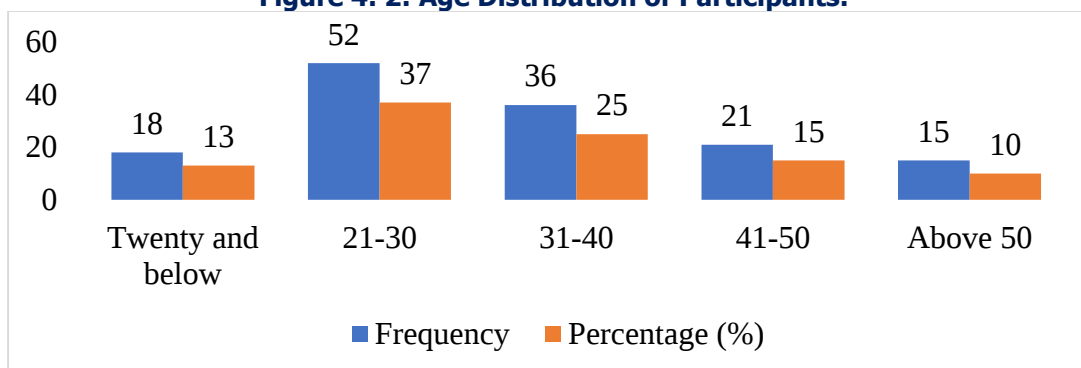
Age.

Table 2: Age Distribution of Participants.

Age Group	Frequency	Percentage (%)
Twenty and below	18	13
21-30	52	37
31-40	36	25
41-50	21	15
Above 50	15	10
Total	142	100

Source: Survey data (2024)

Figure 4. 2: Age Distribution of Participants.



The majority of participants fall within the 21-30 age group, making up 37% of the sample. This age group is notably significant in the context of HIV as it typically represents a highly active demographic in terms of mobility and sexual

activity, potentially increasing risk exposure to HIV. The data shows lesser participation from the older age groups, especially those above 50, who account for only 10% of the sample.

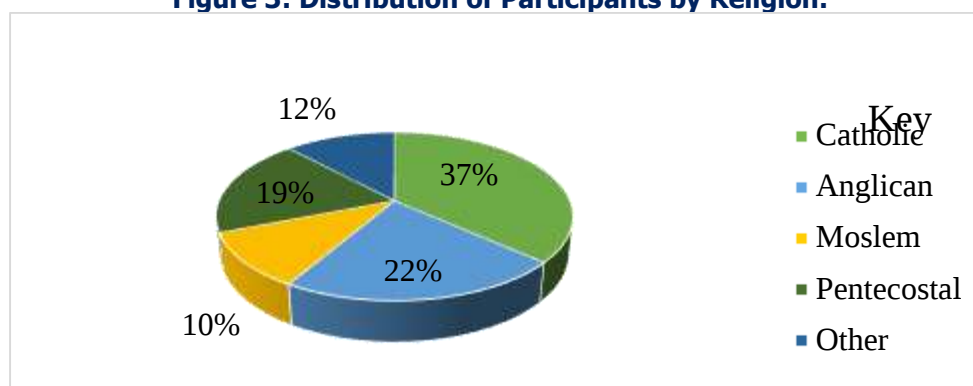
Religion.

Table 3: Distribution of Participants by Religion.

Religion	Frequency	Percentage (%)
Catholic	52	37
Anglican	31	22
Moslem	15	11
Pentecostal	27	19
Other	17	12
Total	142	100

Source: Survey data (2024)

Figure 3: Distribution of Participants by Religion.



The majority of the participants identified as Catholic (37%), followed by Anglican (22%) and Pentecostal (19%). This reflects the religious landscape in Central Equatoria State, where these denominations hold significant influence.

The participation of individuals from the Muslim community, though lower (11%), is crucial as it represents a different cultural and religious perspective within the area.

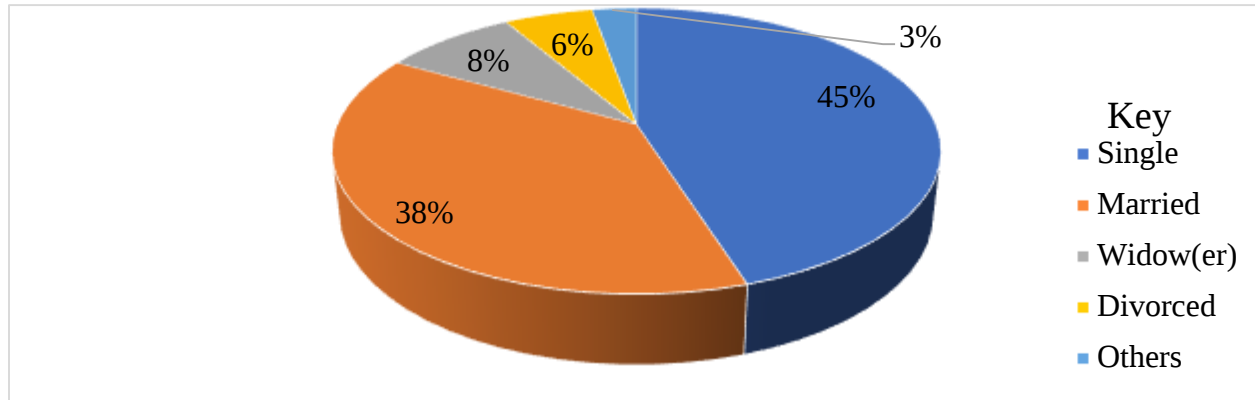
Marital Status.

Table 4: Distribution of Participants by Marital Status.

Marital Status	Frequency	Percentage (%)
Single	64	45
Married	54	38
Widow(er)	12	8
Divorced	8	6
Others	4	3
Total	142	100

Source: Survey data (2024)

Figure 4: Distribution of Participants by Marital Status.



The results show a higher frequency of singles (45%) and married individuals (38%) within the study sample. Singles, often younger, may have different exposure levels and attitudes towards HIV compared to their married counterparts, who may have more stable sexual behaviors

but also different prevention needs, such as couple counseling and testing. The presence of widowed and divorced individuals, though smaller, highlights groups that might be particularly vulnerable due to social and economic factors influencing their health-seeking behaviors.

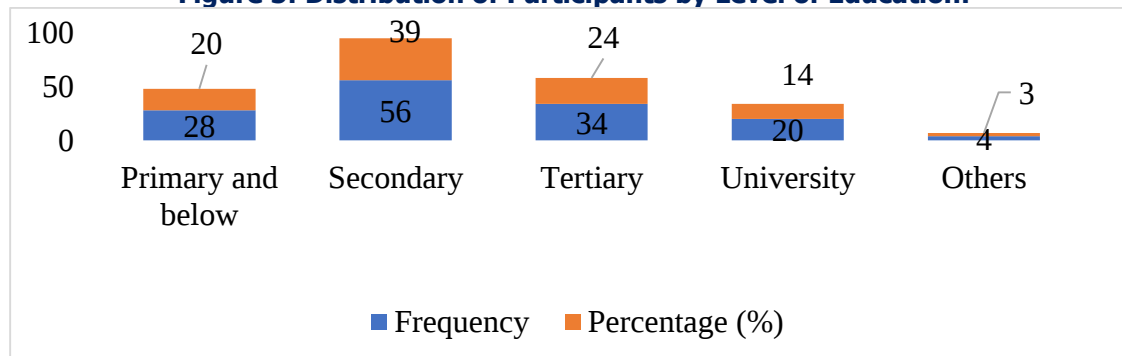
Level of Education.

Table 5: Distribution of Participants by Level of Education.

Level of Education	Frequency	Percentage (%)
Primary and below	28	20
Secondary	56	39
Tertiary	34	24
University	20	14
Others	4	3
Total	142	100

Source: Survey data (2024)

Figure 5: Distribution of Participants by Level of Education.



participants predominantly had secondary education (39%), followed by those with tertiary (24%) and primary or below (20%) levels of education. The presence of participants with

university education (14%) and a small number categorized under 'Others' (3%) provides a broad spectrum of

educational backgrounds, enriching the understanding of how educational attainment impacts health behaviors.

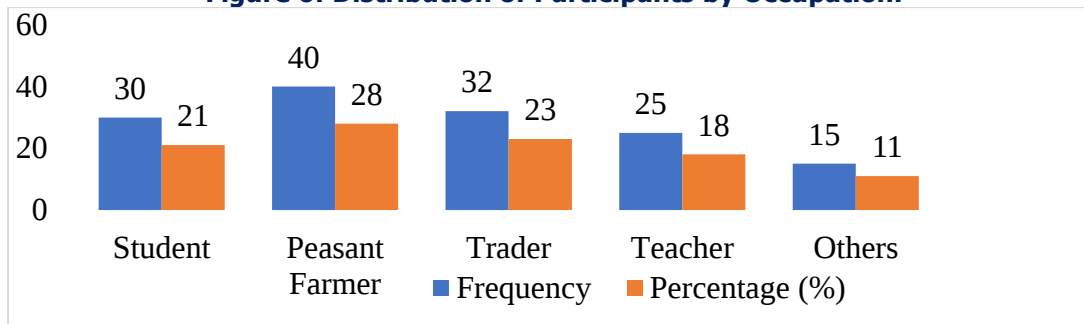
Occupation.

Table 6: Distribution of Participants by Occupation..

Occupation	Frequency	Percentage (%)
Student	30	21
Peasant Farmer	40	28
Trader	32	23
Teacher	25	18
Others	15	11
Total	142	100

Source: Survey data (2024)

Figure 6: Distribution of Participants by Occupation.



The occupational distribution indicates a significant representation of peasant farmers (28%) and traders (23%), followed by students (21%) and teachers (18%). The category 'Others' comprises 11% of the participants,

reflecting a variety of less common professions within the community. This diverse occupational background suggests varying levels of exposure and access to HIV information and services.

Number of Years Lived with HIV or Known HIV Status.

Table 7: Distribution of Participants by Years Known HIV Status.

Years Known HIV Status	Frequency	Percentage (%)
Less than 1 year	20	14
2-5 years	45	32
5-10 years	40	28
10-15 years	22	15
15-20 years	15	11
Total	142	100

Source: Survey data (2024).

Figure 7: Distribution of Participants by Years Known HIV Status.



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This distribution highlights that a significant portion of the participants (32%) have known their HIV status for 2-5 years, followed closely by those who have been aware for 5-10 years (28%). These figures suggest ongoing engagement with healthcare services and possible stability in managing

their health condition. Those who have known their status for less than a year represent a newer group, possibly indicating recent diagnoses and the ongoing effectiveness of HIV testing campaigns.

Table 8: The descriptive analysis of respondent's views on PMTCT and HIV/AIDS prevalence.

Table 4.7 Prevention of Mother-to-Child Transmission (PMTCT)	Mean	Std Dev (σ)	PERCENTAGE RESPONSES				
			SD (1)	D (2)	N (3)	A (4)	SA (5)
Government health centers in my community provide HIV/AIDS preventive services.	4.22	.416	0% (0)	0% (0)	0% (0)	78% (103)	22% (29)
The NGOs in my community provide HIV/AIDS preventive services	3.92	.742	0% (0)	10.6% (14)	0% (0)	76.5% (101)	12.9% (17)
I easily access HIV prevention services in my community.	3.80	.878	0% (0)	16.7% (22)	0% (0)	69.7% (92)	13.6% (18)
I have heard about mother-to-child HIV transmission.	4.04	.670	0% (0)	6.8% (9)	0% (0)	75.8% (100)	17.4% (23)
I know that mother-to-child transmission of HIV/AIDS is preventable.	3.89	.754	0% (0)	11.4% (15)	0% (0)	76.5% (101)	12.1% (16)
I know where to get services for the Prevention of mother-to-child transmission of HIV.	3.89	.650	0% (0)	9.1% (12)	0% (0)	84.1% (111)	6.8% (9)
PMTCT services are available in health centers	3.89	.542	0% (0)	6.8% (9)	0% (0)	90.2% (119)	3% (4)
Pregnant women in our community seek ante-natal & post-partum care in our health centers	4.02	.390	0% (0)	2.3% (3)	0% (0)	91.7% (121)	6.1% (8)
Preventing Mother-to-child transmission of HIV can be done during pregnancy, labor, and delivery at health centers.	3.89	.807	0% (0)	11.4% (15)	4.5% (6)	68.2% (90)	15.9% (21)
Preventing Mother to child transmission of HIV can be done through safer infant feeding and the use of antiretroviral drugs	3.89	.650	0% (0)	7.6% (10)	4.5% (6)	79.5% (105)	8.3% (11)
It's easy for me and other people living with HIV to access Septrin or Dapson for prophylaxis from our health centers anytime we need them.	2.52	1.007	6.8% (9)	64.4% (85)	0.8% (1)	26.5% (35)	1.5% (2)
HIV-positive mothers in our community have access to knowledge on formula feeds and how to prepare them.	3.17	1.099	9.1% (12)	25.8% (34)	4.5% (6)	60.6% (80)	0% (0)

HIV-positive mothers in our community can buy baby formula feeds.	2.13	.469	0% (0)	92.4% (122)	2.3% (3)	5.3% (7)	0% (0)
HIV-positive mothers in our community have access to clean water for preparing baby formula feeds safely.	2.45	850	0% (0)	78% (103)	0% (0)	21.2% (28)	0.8% (1)
There is widespread availability and safe use of breast milk substitutes in our community.	2.08	.533	4.5% (6)	89.4% (118)	0% (0)	6.1% (8)	0% (0)
Lactating mothers living with HIV/AIDS in our community face pressure from others to breastfeed their children as choosing not to breastfeed & use formula feeds reveals their HIV status.	2.76	1.005	4.5% (6)	51.5% (68)	7.6% (10)	36.4% (48)	0% (0)

(Source: primary data 2024)

Results in Table 8: noted that most respondents know HIV prevention services within their community. Analysis showed that 78% (103) of the respondents indicated that government health centers in Juba provided HIV/AIDS preventive services, On the provision of HIV/AIDS preventive services by NGO's in Juba 78.5% agreed with the statement compared to 10.8% that disagreed, findings revealed that NGOs in Juba provide HIV/AIDS preventive services as 89.4% of respondents agreed or strongly agreed that the NGOs in their community provide HIV/AIDS preventive services, and only 10.6% of respondents disagreed on the above, 78.5% agreed that they had been sensitized about Mother to Child HIV transmission, On the attitude of women towards going for antenatal services, findings revealed that most expectant women go for pregnancy tests in health centers as all the respondents (100%) agreed that most expectant women in their community go for pregnancy tests in health centers. This therefore shows that there was a high number of expectant women going for pregnancy tests in health centers. On hearing about mother-to-child HIV transmission, 93.2% of respondents agreed that they have heard about and have knowledge of PMTCT and only 6.8% of respondents disagreed that they do not know PMTCT. This therefore reveals that the majority of people in Juba have knowledge of PMTCT which is so critical for the success of PMTCT in the fight against HIV/AIDS.

The researcher further sought the respondents' views on whether PMTCT is preventable or not in the fight against HIV/AIDS and statistics revealed that the majority of people in Juba know that the strategy is preventable as only 11.4% of respondents disagreed that they don't know that Mother to Child Transmission of HIV/AIDS is preventable while 88.6% of respondents agreed that they know that Mother to Child Transmission of HIV/AIDS is preventable. This therefore means that the community has a high level of knowledge that mother-to-child transmission of HIV/AIDS is preventable. Only knowing that the strategy is preventable is of very limited use if people don't know where to access such services from so the researcher asked respondents whether they know where to access such services from or not. The study findings showed that the majority of people

in Juba knew where to access such services (PMTCT) as 90.9% of respondents agreed that they knew where to get services for the Prevention of Mother-Child Transmission of HIV and only 9.1% of respondents disagreed that they don't know where to get such services from. This suggests that community members in Juba know where to get services for the Prevention of mother-to-child transmission of HIV. The study also found out that that PMTCT services are readily available in the health centers within Juba as 93.2% of respondents agreed that the PMTCT services are readily available in their health centers and only 6.8% disagreed that they are not readily available.

The analysis noted that it's not easy for people living with HIV to access Septrin or Dapson for prophylaxis from their health centers anytime they need them as 71.2% of respondents disagreed on the above and only 28% of respondents agreed to the above leaving out 0.8% of respondents who were undecided. This means that it's not easy for people living with HIV in Juba to access Septrin or Dapson for prophylaxis from their health centers anytime they need them and yet this is so critical in the reduction of HIV/AIDS prevalence rate. A respondent expressed his concern on the above issue when he said,

"We don't have medical doctors in most of our health centers here and the majority of people heading our health centers are clinical officers most of whom lack proper knowledge on how to treat certain kinds of diseases that affect us people who are HIV positive".

Another disgruntled respondent confessed this during an interview

"HIV/AIDS affects our memory at later stages thus making the services of psychiatrists so critical but do we have any in our health centers here? Not even one of my daughters, yet our brothers and sisters are suffering from mental problems but there are no specialists to help treat them".

Findings further revealed that HIV-positive mothers in Juba have access to knowledge on formula feeds and how to prepare them as 60.6% of respondents agreed on the above and only 34.9% disagreed that they don't have access to knowledge on formula feeds and how to prepare them whereas 4.5 % of the respondents neither agreed nor disagreed with the statement that;

“HIV-positive mothers in their community have access to knowledge on formula feeds and how to prepare them.”

Knowing formula feeds and how they are prepared is of limited or no use at all if someone can't acquire the feeds so the researcher had to find out information on the ability of HIV-positive people to buy these alternative feeds for their children. On the ability to buy baby formula feeds by HIV-positive mothers in Juba, 92.4% of the respondents disagreed that HIV-positive mothers in their community can't buy baby formula feeds whereas 5.3 % of respondents agreed that HIV-positive mothers can buy the feeds living out 2.3 % who were undecided. This indicates clearly that HIV-positive mothers in Juba can't buy baby formula feeds. Statistics also revealed that HIV-positive mothers in Juba don't have respondent's community access to clean water for preparing baby formula safely as 78 % of respondents disagreed on the above leaving only 22 % of respondents who agreed that people in their community have access to clean water. This therefore suggests that community members in Juba don't have access to clean water for preparing baby formula feeds safely. On HIV-positive mothers in Juba having access to fuel for preparing replacement feeds safely, 80.3% of respondents disagreed that HIV-positive mothers in their community don't have access to fuel to prepare replacement feeds safely while 17.4 % of respondents agreed on having easy access to fuel and 2.3% of the respondents were undecided. This was further confirmed when one of the respondents during the focus group discussions said,

“We face problems with the collection of as collecting only two heaps of firewood is hard work.

This means that the community members (including HIV-positive mothers) in Juba don't have access to fuel for preparing replacement feeds safely. The study however noted that there is no widespread availability and safe use of breast milk substitutes in Juba as 93.9% of respondents disagreed that there is no widespread availability and safe use of breast milk substitutes in their community and only

6.1% of respondents agreed on availability and safe use of breast milk substitutes. This therefore means that there is no widespread availability and safe use of breast milk substitutes in Juba.

The analysis further indicated that 47% of respondents approved that HIV-positive mothers in their community are a target for stigma and discrimination if they stop breastfeeding their children to Prevent MTCT and 50.7% of respondents disagreed with this statement while only 2.3% of respondents were undecided. This means that stigmatization of HIV-positive people still takes place in Juba although its rate is on the decline as indicated by the statistics above. The study also found that 56% of respondents disagreed with the statement that “lactating mothers living with HIV/AIDS in Juba face pressure from others to breastfeed their children as choosing not to breastfeed & use formula feeds reveal their HIV status”. Only 36.4% of respondents agreed with the above statement whereas 7.6 % were undecided. This therefore confirms the decline in the rate of stigmatization of people living with virus in the Juba. One of the respondents affected by stigmatization during the focus group discussions said that; *“Stopping breastfeeding is not easy for people like us. Can you believe that some of our husbands tear our medical forms (books) and even confiscate our drugs if they come across them? That habit makes some of us keep our drugs like spectrin, ART, and prophylaxis at our neighbors' homes for safety”.*

Correlation Results for Prevention of Mother to Child Transmission (PMTCT) and HIV Prevalence in Juba.

The researcher went ahead to establish whether there was a relationship between PMTCT and HIV/AIDS prevalence rate. The analysis was guided by the following null hypothesis. *“There is no relationship between PMTCT and HIV/AIDS prevalence rate in Juba.*

Table 9: Correlation results for PMTCT and HIV/AIDS Prevalence.

		PMTCT	HIV Prevalence
PMTCT	Pearson Correlation	1	.020**
	Sig. (2-tailed)		.819
	N	142	142
HIV Prevalence	Pearson Correlation	.020**	1
	Sig. (2-tailed)	.819	
	N	142	142

**** Correlation is significant at the 0.05 level (2-tailed).**

Results in Table 9: indicate that there is no significant relationship between PMTCT and HIV prevalence given the very small correlation coefficients of 0.02 with an observed significance level of 0.819 which is far above the critical

0.05 level of significance. This implies that the null hypothesis is accepted, meaning that there is no sufficient evidence at the 5% level to support the research hypothesis

that a relationship exists between PMTCT and HIV prevalence in Juba.

The contribution of Prevention of Mother to Child Transmission (PMTCT), on HIV/AIDS prevalence in Juba was assessed by the use of regression analysis.

Regression Results between Prevention of Mother to Child Transmission (PMTCT) and Prevalence in Juba.

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Table 10: Model Summary on Prevention of Mother-to-Child Transmission and HIV/AIDS Prevalence.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.020 ^a	.000	0.0004	.39148

a. Predictors: (Constant), PMTCT

R² of 0.000 in table 10: means that PMTCT does not in any way explain the variations in the HIV prevalence rates in Juba. There are other factors other than PMTCT that explain HIV/AIDS prevalence.

Table 11: Analysis of Variance (ANOVA).

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.008	1	.008	.053	.819 ^a
	Residual	19.924	130	.153		
	Total	19.932	131			

a. Predictors: (Constant), PMTCT

b. Dependent Variable: Prevalence

The Analysis of variance (ANOVA) shown in table 11, indicates that there is no significant relationship between PMTCT and prevalence rates. Hence the null hypothesis was accepted and the research hypothesis rejected. In conclusion, therefore, based on the findings of this study, the provision of PMTCT does not explain the prevalence rates of HIV/AIDS in Juba.

Discussion of findings.

Prevention of Mother-to-Child Transmission and HIV/AIDS Prevalence.

Regression results showed that Prevention of mother-to-child transmission was the least significant predictor affecting HIV/AIDS prevalence in Juba according to the ranking of all the predictor variables used in this study. Factor analysis was carried out and some of the factors of PMTCT that affected the prevalence rate of HIV/AIDS in the district were; awareness in the form of knowing HIV prevention services, awareness about government health centers and NGOs that provide HIV/AIDS preventive services, having access to HIV/AIDS prevention services, hearing about Mother to Child HIV transmission, knowing that Mother to Child Transmission of HIV/AIDS is

preventable, having knowledge of where to get services for the PMTCT, availability of PMTCT services in health centers, having knowledge that PMTCT of HIV can be done during pregnancy, labor and delivery at health centers in addition to safer infant feeding and the use of antiretroviral drugs. Other PMTCT critical factors affecting HIV/AIDS prevalence in Juba were having access to knowledge on formula feeds and how to prepare them, care and support (infant feeding inclusive) of mothers living with HIV, having the ability to buy baby formula feeds and availability and safe use of breast milk substitutes.

Other critical factors included having access to fuel and clean water to prepare replacement feeds, access to medical workers, access to Septrin or Dapson for prophylaxis, and finally happy provision of PMTCT services by health workers. These results were in line with earlier findings that Mother-to-child transmission (MTCT) is when an HIV-infected woman passes the virus to her baby and this can occur during pregnancy, labor, and delivery, or breastfeeding World Health Organization, United Nations Children's Fund and UNAIDS, (2009) mentioned that the coverage for services to prevent mother-to-child HIV transmission rose from 10% in 2004 to 45% in 2008 leading to a drop in infections and the drop in new HIV infections

among children in 2008 suggests that these efforts are saving lives. Muzaaya, (2009) also presented that, Mother – To – Child – Transmission (MTCT) takes place during late pregnancy, labor, delivery, and in pauperism, and is influenced by various factors namely; viral, maternal, obstetric, fetal, and infant. He advised that in the implementation of PMTCT, behavioral, therapeutic, and obstetric, modification of infant feeding, intrapartum care, and postnatal care must be put into consideration and both husband and wife are important in PMTCT.

The Well Project, (2010) advised women to get tested if they are pregnant or considering pregnancy as HIV+ mothers can pass the virus to their babies while pregnant, during birth, or by breastfeeding. Well Project, (2010) further noted that advances in treatments (including Septrin and dapson for prophylaxis among others) have significantly reduced the risk of a baby getting HIV from its mother when precautions are taken. Jotham, (2009) further advanced that strengthening HIV testing and counseling of pregnant women, the use of ARVs during and after delivery, and safe infant feeding practices have seen developed countries reduce HIV transmission to children from 25% to between 1% and 5% in recent years.

UNAIDS, (2004) holds the view that; the response to HIV/AIDS must contain comprehensive prevention and treatment strategies to prevent new infections while providing critically needed care and treatment for those already living with HIV. WHO website, (2009) states that; Prevention is enhanced when delivered alongside treatment and care. AVERT (2010) advances that without treatment, around 15-30% of babies born to HIV-positive women will become infected with HIV during pregnancy and delivery and a further 5-20% will become infected through breastfeeding. According to AVERT, (2010), PMTCT has been virtually eliminated in high-income countries due to effective voluntary testing and counseling, access to antiretroviral therapy, safe delivery practices, and the widespread availability and safe use of breast-milk substitutes. They further advanced that if these interventions were used worldwide, they could save the lives of thousands of children each year.

Conclusion.

Prevention of mother-to-child transmission was found to be the least significant predictor affecting HIV/AIDS prevalence in Juba. This implies that HIV/AIDS prevalence in Juba could be reduced if the significant factors (indicated by factor analysis) under PMTCT that are affecting the prevalence rate are improved upon.

Limitations of the Study.

The study acknowledged potential limitations such as sampling bias, response bias, and operational constraints that could impact the findings.

Recommendation.

HIV/AIDS service providers should aim at addressing the epidemic strategically from the root cause but not at the symptom level.

A participatory Radio Campaign model would have a greater impact in changing the behavior and attitude of intended beneficiaries towards PMTCT.

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List of abbreviations.

PMTCT:	Prevention of mother-to-child transmission of HIV.
MTCT:	Mother to Child Transmission.
AIDS:	Acquired Immune Deficiency Syndrome
ANOVA:	Analysis of variance.
WHO:	World Health Organization.
UNAIDS:	Joint United Nations Programme on HIV/AIDS.
NGO:	Non-Governmental Organization
ARV:	Antiretroviral

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