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Procreation / Negotiating Parenthood's Challenges Faced by Persons Living with HIV/AIDS in the Southwest Region of Cameroon: Patients' Perspectives

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ABSTRACT

It is over three decades now that HIV/AIDS has emerged beyond sundry conspiracy suspicions as a global epidemic. Since its onset in the early 1980s, an estimated 79.3 million people got infected with HIV; 36.3 million people died; a plethora of people have been in pain, grief, and living with chronic disease worldwide. Since then, enormous advancement has been made in terms of perception and treatment making procreation no more a myth. The study aimed at providing in-depth understanding on procreation / negotiating parenthood's challenges faced by persons living with HIV/AIDS (PLWHAs) in the Southwest region of Cameroon with focus on patients' perspectives while recommending resort measures. Theoretically, this study is anchored on the Social Learning / Cognitive Theory (SCT), theory of Reasoned Action/Planned Behaviour (TRA/TPB), Health Belief Model (HBM), the Stages of Change (SoC) and Social Ecological Model (SEM). The study employs an ethnography design with dominantly a qualitative approach in data gathering and analysis whereby data were gathered through focus-group-discussions and interviews with persons living with HIV-AIDS. Data were analysed qualitatively using thematic analysis for textual data from focus-group discussion and interviews. The findings unfold number of barriers among which uncertainty about the source and genuineness of the disease financial constraints, challenging having a procreation partner, beliefs as divine intervention, stigmatization, medication phobia / psychological trauma of long term medication, enclave nature of some localities / inadequate accessibility / high transportation cost, feeding challenge / cost of alternative or milk feeding, discordant partners, dilemma faced with portrayed efficiency and non-formalization of traditional medicine, and confused with source of infection / doubt of source of infection / doubting of the realistic nature of the illness. It was recommended counseling / health education, adherence to treatment, exploiting the potential of traditional medicine, more research and scientific clarity on the pandemic, pre-marital checks, life style adjustment, faithfulness, good medical care, gradual disclosure, protected sex, scientific / research communication, adequate availability of drugs, support group and ethical consideration.

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KEYWORDS: *Procreation, Negotiation, Parenthood, Persons Living with HIV/AIDS, Challenges, Patients' perspectives.*

INTRODUCTION

Sexually transmitted infections (STIs) / HIV and AIDS continue to be a significant public health problem in Cameroon and the world at large with scientific ambiguity and alleged conspiracy surrounding some of them. The burden of HIV is disproportionately higher among women of reproductive age contributing more than half of the global share (Worku et al., 2022). While research,

programmatic, and policy communities have often taken as their point of departure that HIV positive women do not wish to or should not become pregnant, HIV-positive women have long advocated for recognition and fulfilment of their sexual and reproductive rights, including the ability to decide if and when to have children (Holmes, 2007; International Community of Women living with HIV/AIDS (ICW), 2002; Kaufman and Messersmith, 2005). Despite challenges, an HIV diagnosis does not preclude dating, marrying, or having a family. The advent of highly active antiretroviral therapy transformed the HIV experience of illness, restoring individuals' ability to live normal lives managing HIV as a chronic illness. Research has extensively documented the experiences of illness of people living with HIV/AIDS. However, while these studies mostly document negative experiences, such as stigma and discrimination, little is known about the social adaptations to living with HIV in everyday life, particularly with regard to dating, marriage, and parenthood.

Background

The HIV pandemic has played a major role in shaping the current understanding of human sexuality and sexual behaviour and has increased willingness to address sexual health in a frank and direct manner. Sexual health, the state of physical, emotional, mental and social well-being in relation to sexuality, is an important and integral aspect of human development and maturation throughout the life cycle. In many areas of the world, most HIV infections are transmitted sexually or associated with pregnancy, childbirth, and breastfeeding. Women of childbearing age constitute nearly half of the estimated 32 million adults living with HIV worldwide (GBD, 2015). Mother-to-child transmission (MTCT) is the dominant mode of acquiring HIV type 1 in children, resulting in approximately 1800 of the 16,000 new infections occurring each day, mostly in sub-Saharan Africa. Each year, in low-resource regions such as sub-Saharan Africa, over half a million newborns are infected with HIV through MTCT due to increasing desire for fertility (UNICEF, 1990). It is over three decades now that HIV/AIDS has emerged as a global epidemic. Since its onset in the early 1980s, an estimated 79.3 million people got infected with HIV; 36.3 million people died; a plethora of people have been in pain, grief, and living with chronic disease worldwide (UNAIDS, 2021; Vagiri et al., 2018; Weldsilase et al., 2018). In 2020, an estimated 37.7 million people were living with HIV globally while a total of 1.5 million people acquired the virus. Of these, women accounted for 50% (UNAIDS, 2021; WHO, 2021). Sub-Saharan Africa (SSA) remains among the regions hit hard by the infection contributing for nearly two-thirds of the global total HIV cases (Kibret et al., 2019; Rasmussen et al., 2020). New HIV infections dropped in five of the eight regions, and AIDS deaths declined in six of eight regions between 2010 and 2018 ((Mahy et al., 2018). Cameroon is one of the countries with a generalized HIV epidemic. The adult HIV prevalence (ages 15-49) was estimated at 4.5% with women of reproductive age accounting for over half (54%) of adults living with HIV in 2015 (UNAIDS, 2016, Global AIDS Update, 2016). Fertility desire refers to people's intention to have more children despite having HIV or the need to have a child in the future, whereas intention refers to a determination to carry out that desire (National Collaborating Centre for Women's and Children's Health (UK), Royal College of Obstetricians & Gynecologists, 2013). In many areas of the world, most HIV infections are transmitted sexually or associated with pregnancy, childbirth, and breastfeeding. Women of childbearing age constitute nearly half of the estimated 32 million adults living with HIV worldwide (GBD, 2015). Mother-to-child transmission (MTCT) is the dominant mode of acquiring HIV type 1 in children, resulting in approximately 1800 of the 16,000 new infections occurring each day, mostly in sub-Saharan Africa. Each year, in low-resource regions such as sub-Saharan Africa, over half a million newborns are infected with HIV through MTCT despite increasing the desire for fertility (UNICEF, 1990). The advancements in HIV treatment, management, and support over the past three decades have contributed to tremendous shifts in people's lives with HIV in Ethiopia and around the world (Gesesew et al, 2017). Over 80% of people living with HIV are of reproductive age. As people with HIV live longer, questions regarding their potential for marriage and/or having children have become increasingly important. Furthermore, effective therapies have improved the prognosis for women infected with HIV, and these individuals are frequently considered for childbearing and parenthood (Foley, 2014; Bharat et al., 2007). While the country has registered significant gains in its overall Prevention of Vertical Transmission of HIV/AIDs (PVT), a recent study on the reproductive health needs of women living with HIV in the national capital noted that over 50% of pregnancies among post-partum HIV positive women was unplanned in 2014 (Mbu et al., 2014). Furthermore, data from a national survey on the fertility desires of seropositive women revealed that 55% of women living with HIV in 2010 desired to or have children (Marcellin et al., 2010). Yet there is limited evidence on how these seropositive women and men define

these childbearing intentions or go about fulfilling them. According to the demographic health Survey of 2018 by the Ministry of Public Health of Cameroon, the Southwest Region ranked sixth with a high HIV prevalence rate of 3.2% amongst the ten Regions in Cameroon with 3.7% prevalence for women and 2.6% for men. This high prevalence rate might be as a result of the fact that the Region is situated on the coast of the Atlantic Ocean. It shares long international frontiers with Nigeria and Equatorial Guinea. It is therefore a frontier Region with a lot of cross frontier activities. It equally has a lot of important tourist attractions such as the Limbe beach, the Muaneguba twin lakes, the Cameroon Mountain, the Mbakwasupe fly over just to name but these. More so, the presence of the University of Buea with a student population of a highly sexual age group attracts people from far into the Region. The main economic activity of the Southwest Region is farming most of which is mechanized by the Cameroon development Cooperation (CDC). This is the biggest plantation estate in the country and thus attracts human labor from all over the country. These plantation workers are called upon to live in camps with high levels of promiscuity which very much favor the spread of STIs/ HIV infection. There are a lot of economic activities going on in the Region with commercial activities in towns like Kumba, Tiko, Ekondo Titi dealing in goods mainly from the neighboring country Nigeria. The Southwest Region has the petrol refinery in the country and this is the terminal where the whole country converges to get fuel. It thus brings in hundreds of long-distance truck drivers on a weekly basis thus exposing this community to a higher risk of HIV and other STIs. Presently, other projects of road maintenance, and construction of new toll gates (electronic toll gates) along the high ways are also a call for concern. These projects have brought a lot of non-resident workers and this to an extent promotes promiscuity in the communities that host such projects. The socio-political crisis in the region has also brought in a lot of internally displaced persons (IDPs) and this has also led to a high sexual promiscuity exposing the community to a high risk of HIV and AIDs. In the Southwest Region there are (19) Health Districts and 117 Health areas. Each health area is equipped at least with a unit charged with the Prevention of Mother to Child transmission (PMTCT) and also carries out voluntary counseling and testing (VCT). Each of the Health Districts has at least a treatment center and other health facilities that offer HIV/AIDS prevention and management services (UPEC). Such services include but not limited to counseling, testing, treatment, reproductive health services, care and prevention of STIs/HIV. The Southwest region as of December 2023 has 41912 estimated number of persons living with HIV (SPECTRUM; statistical software used by National AIDs Control Committee). Of these numbers, 36867 are on ARV treatment, among which are 25715 female on ART and 11152 male on ART. The region has a total of 116 functional health facilities providing services to HIV positive clients (National AIDs Control Committee, 2023).

Statement of the Problem

In contemporary times, studies have shown that HIV infection may affect fertility by influencing desires and intentions for having children. On the one hand, studies of fertility intentions among HIV-positive individuals have found some ambivalence and mixed results. On the other hand, some studies have reported a strong desire to have children among sero-positive women, consistent with the high social value placed on children while others have not. The relative strength of these conflicting findings varies according to individual and contextual factors. For instance, unmarried women express more confidence in their ability to stop childbearing than married women, whom in many contexts report pressure from husbands to have children (Cooper, Harries, Myer, Orner, Bracken et al., 2007). The decision whether or not to have children is often complex and influenced by many factors. HIV-positive individuals in Africa have additional considerations to take into account when deciding whether or not to have children. These include the possibility of passing HIV from mother-to-child and the likelihood that one or both parents could die before the child reaches adulthood (Newell, et al, 2004). The sexual and reproductive health (SRH) rights of women embodied in the Cairo Declaration (International Conference of Parliamentarians on Population and Development; (ICPD) Bangkok, Thailand. 1994) and the Beijing Platform of Action (Beijing Declaration, 2007) set the stage for recognizing that sexuality and fertility, provision of information about sexuality and access to counseling services, STI treatment, the right to choose whether or not to reproduce, and involvement of partners in reproductive decision-making, are essential human rights for people living with HIV (Gruskin et al., 2007). So, this study aims to assess barriers to the desire of negotiation of parenthood among persons living with HIV/AIDs who are on ART.

Research objective

The study aimed at providing in-depth understanding on procreation / negotiating parenthood's challenges faced by persons living with HIV/AIDS in the

Southwest region of Cameroon from patients' perspectives while recommending resort measures.

Methodology

Research Approach

It was an ethnography study employing essentially a qualitative approach in data gathering and analysis whereby data were gathered using focus-group-discussion guide and interviews with persons living with HIV-AIDS. Focus-group discussion (FGD) is important because when people are interviewed individually they can contrast their viewpoints in an interactive discussion, and by so doing unfolding their mind and enriching their ideas. Ethnography design is appropriate when studying the culture of a group of people. The goal of ethnography research is to study in detail a group's life, to identify from participants the cultural meanings and beliefs they attach to activities, events, behaviors, knowledge, rituals and life style (Nana, 2018).

Study Site

It is a hospital-based study that was carried out in two urban treatment units notably Buea and Limbe regional hospitals and two rural treatment units which are CMA Ntam and CDC Cottage Hospital Tiko.

Sample Size Determination

This is a qualitative study dealing with non-probabilistic sampling and generally with nominal sample size . In this context, probabilistic approaches to determine sample size are not applied but it is generally recommended sample sizes 15 or above targeting key informants or participants that profile predisposes them to provide in-depth and appropriate information that can adequately inform the problematic under study. Altogether, 8 focus-group discussions were carried out with patients, 2 in each of the four health facilities whereby one was for male and the other one for female; so four focus-group discussions were carried out in rural area and the other four in urban area. As for the in-depth interview, 10 of them were sampled per health facility making a total of 40.

Sampling Technique

Patients were sampled conveniently, that is according to how available they were and consented to participate in the study.

Data collection Method

Different qualitative research approaches were employed among different target groups in order to obtain multiple perspectives on the fertility intentions, contraceptive preferences and decisions of women living with HIV. Focus-group discussions were conducted with patients as well as individual interviews. The interviews were carried out by the researcher herself while for the focus groups she was assisted by a trained animator.

Focus Group Discussions

The focus-group discussion involved 6-7 people and was stratified between male and female, rural and urban areas. Topics explored included parenthood intentions prior to and after HIV diagnosis, motivations or concerns for pregnancy, and influences on their decision-making process as well as relevant issues identified during FGDs. At the end of group discussions, participants were asked if they would be willing to be interviewed. In addition, snowball sampling was considered if recruitment via FGDs was not successful. This approach and method enabled the research team to gain deeper understanding on the inner forces that influence the parenthood intentions for persons living with HIV and AIDS. It also afforded us the chance to further explore sensitive issues that come up during group discussions (Ritchie & Lewis, 2003).

In-depth Interviews

In the same perspective of in-depth probing of information, in-depth interviews were conducted with HIV / AIDS patients. This was done by the research using face-to-face approach. Each interview was recorded using a smart phone.

Focus group discussions were conducted in a hall assigned by the heads of HIV Care and Treatment Centers while a feasible and confidential site for in-depth interviews were decided upon after negotiating with study participants.

Data Processing and Analysis Plan

This research yielded essentially qualitative data, which are textual data generated from group-discussions and interviews. These data were analyzed qualitatively following the thematic approach with the support of Atlas.Ti 5.2 software (Atlas.ti Scientific Software Development GmbH, Berlin, Germany) whereby concepts or ideas were grouped under umbrella terms or key words and summarized in code-quotation tables. The code-quotation table ensures the objectivity and reliability of qualitative analysis in the sense that if code/concepts/umbrella terms and their descriptions can be subjective to relative error, the quotations are grounded and real and thus helps compensate for potential bias . A conceptual diagram concluded the analytical stage which consists in relating concepts or ideas in a meaningful and logical manner, what is termed concept-building in qualitative analysis.

Quality Assurance and Validity

In order to ensure that any research is meaningful and useful to other educators and researchers, the

knowledge it produces has to be trustworthy. The following criteria were used to ensure that the study is as trustworthy as possible: consent and privacy, competence, credibility, transferability and conformability.

Ethical Considerations

Ethical considerations in research are critical. Ethics are the norms or standards for conduct that distinguishes between right and wrong. They help to determine the difference between acceptable and unacceptable behaviors in research. The ethical considerations here guided the relationship with respondents. They were not to be compelled to participate and shall abide to the assent form, and their privacy were respected at all levels.

Validity and Reliability of Instrument

Reliability and validity are bases of confidence in research findings (Hammersley, 1990). Validity refers to the measurement of what is supposed to be measured. The construct, content and concurrent validity were assured by pre-testing with a small sample at the CMA Muea before final administration. Therefore, validity and reliability of the instruments were ensured through pre-test or a trial run (pilot study), to determine whether the questionnaires were clearly worded and free from major biases and whether they solicited the type of information envisioned. In this dimension, revisions of some questionnaire items were made. Problems arising in some questions not explicit to respondents were also adjusted to their understanding as requested.

The Pilot Study

An important stage of the research design is the piloting phase. All data gathering instruments should be piloted to test how long it takes recipients to complete them; to check that all questions are clear, and to enable one to remove any items which do not yield usable data. The pilot study was conducted at the CMA Muea. The reliability of social research mostly relies on the extent to which respondents are trustworthy because it is often assumed at this level that a thorough content, construct and face validity are done. Given that we are dealing with essentially qualitative data, the panel of judge method of reliability was employed. The method is a palliative to most of test-retest methods problems. Rather than submitting people to the same questionnaire in two different occasions, this method allow two or more judges to appraise the data collection instrument, the indicators or the codes and then check for level of agreement. This method although safe from some disadvantages of the test-retest method, depends highly on the level conceptual reasoning, the background and the sense of logical and systematic reasoning of the judges. Generally, the judges should have the suitable background meeting the inclusive criteria of the study. The approach of analysis of panel of judge method is similar to that of parallel method in qualitative studies. The parallel method generally applies when dealing with quantitative studies. However, this method can be used in qualitative research as it is the case in this study, whereby reliability was appraised not mathematically but conceptually which is termed conceptual parallel method (Nana, 2018). The responses of the judges were appraised as to make sure that they had the same interpretation or understanding of the questions; this was an indication that the questions were well framed and were understandable. This approach is similar to content validity but the difference lies to the fact that the respondents here shall meet the profile of the study participants, and another difference lies to the fact that the responses are appreciated by a third party-judge, generally the lead researchers and the statistician. In this perspective, for each interview guide, coupled to the content and construct validity from the lead investigators and the statistician, two respondents meeting the inclusion criteria of the study were given the interview guide for responses. Generally, comprehension and vocabulary challenges were raised and they were sorted out, adjusted and verified for cross-validations. A focus-group discussion was organized and its dynamism coupled with inputs from the participants help in fine tuning the instrument.

Findings

Demographic characteristics

Table 1: Demographic characteristics of patients

Health facility (n=32)	n	%
Regional Hospital Limbe	7	21.0
Regional Hospital Buea	10	31.0
CMA Ntam	8	25.0
CDC Cotage	7	21.0
Age (N=32)	**n**	**%**
20-24	1	3.0
25-29	3	9.0

30-34	12	37.0
35-39	4	12.0
40-44	8	25.0
45-49	3	9.0
50+	1	3.0
Sex (N=32)	**n**	**%**
Male	3	9.4
Female	29	90.6
Occupation (N=32)	**n**	**%**
Self-employed	19	59.0
Private sector employee	6	18.0
Unemployed	4	12.0
Housewife	2	6.0
Student	1	3.0
Literacy	**n**	**%**
Literate	31	96.0
Illiterate	1	3.0
Level of school attained (N=32)	**n**	**%**
Primary school	14	43.0
Up to high school	14	43.0
University	4	12.0
Have participated in counseling or training (N=32)	**n**	**%**
Yes	27	84.0
No	5	15.0
Mode of treatment (N=32)	**n**	**%**
Anti-retroviral drugs	30	93.0
Traditional medicine	1	3.0
Not specified	1	3.0
Duration of disease (N=32)		

N	Mean	SEM	Median	Minimum	Maximum	SD
32	8.4	0.9	7.5	0.5	20.0	5.1

CD4 Count / Viral load (N=32)	**n**	**%**
Yes	28	87.5
No	3	9.4
Not specified	1	3.1
Source of contamination (N=32)	**n**	**%**
Don't know	26	81.3
Sex	6	18.8
Nature of pregnancy (N=29)	**n**	**%**
Planned	20	69.0
Unplanned	8	27.6
Both	1	3.4
Delivery method (N=29)	**n**	**%**
Normal delivery	23	79.3
Cesarean section	4	13.8
Miscarriage	2	6.9
Type of gestation (N=27)	**n**	**%**
Single	26	96.3
Twins	1	3.7
Weeks of gestation (N=27)	**n**	**%**
>37 weeks	24	88.9
Not specified	3	11.1

Place of antenatal care (N=28)	**n**	**%**
This hospital	17	58.6
Somewhere else	12	41.4
Place of antenatal care (N=28)	**n**	**%**
District hospital	1	8.3
Sub-divisional health center	1	8.3
Integrated health center	3	25.0
Community health center	1	8.3
Private health center	6	50.0
Number of children (N=27)	**n**	**%**
1	5	18.5
2	8	29.6
3	4	14.8
4	6	22.2
5	2	7.4
7	2	7.4
Survived children (N=26)	**n**	**%**
0	4	15.4
1	2	7.7
2	8	30.8
3	6	23.1
4	3	11.5
5	3	11.5
Dead children (N=26)	**n**	**%**
0	15	57.7
1	8	30.8
2	3	11.5
Survival rate		
Number of children	**Survived children**	**Survival rate**
81	63	77.8%
Infected child	**n**	**%**
Yes	1	3.8
Not specified	25	96.2
Parity (N=27)	**n**	**%**
2-3	4	14.8
4-6	13	48.1
7+	10	37.0
Child weighted at birth (N=27)	**n**	**%**
Yes	27	100
No	0	0.0
Child birth's weight in grams (N=27)	**n**	**%**
Normal (2.500-4,000)	26	96.3
Macrosomia (>4000)	1	3.7
First pregnancy experience encouraged the second one (N=29)	**n**	**%**
Yes	19	65.5
No	10	34.5
Marital status	**n**	**%**
Currently married	15	46.9
Never married	7	21.9
Formerly married	2	6.3
Concubines (come-we-stay)	6	18.8
Widowed	2	6.3

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Marital regime (N=19)	**n**	**%**
Monogamy	18	94.7
Non-specified	1	5.3
Perceived household wealth quintile	**n**	**%**
Poorest	1	3.1
Poorer	11	34.4
Middle	19	59.4
Richer	1	3.1
Residence	**n**	**%**
Rural	19	59.4
Urban	13	40.6
Child sex (N=27)	**n**	**%**
Male	4	14.8
Female	7	25.9
Both	16	59.3
Number of children(N=57)	**n**	**%**
Number of male children	30	52.6
Number of female children	27	47.4
Wantedness of child	**n**	**%**
Wanted	23	79.3
Mistimed	4	13.8
Unwanted	2	6.9
Highest level of delivery attendant (N=27)	**n**	**%**
Doctor / Non-physician clinician	7	25.9
Other (Specialized Birth Attendant/Midwife/Nurse)	20	74.1
Breastfed within one hour of delivery (N=27)	**n**	**%**
Breastfed within one hour of delivery	10	37.0
Breastfed after one hour of delivery	15	55.6
Never breastfed	2	7.4

Duration of disease in years (N=27)						
N	Mean	SEM	Median	Minimum	Maximum	SD
32	8.4	0.9	7.5	0.5	20.0	5.1

Was satisfied with post-partum care (N=27)	**n**	**%**
Yes	22	81.5
No	1	3.7
Undecided	4	14.8

Health facility

Patients were sampled in four health facilities namely Regional Hospital 21.0% (7), Regional Hospital Buea 31.0% (10), CMA Ntam 25.0% (8), and CDC Cotage Hospital 21.0% (7). Both frontline and referral health facilities were involved in the sample and this stratification was good for the representativeness of the sample.

Age

The mode here was 30-34 years with proportion of 37.0% (12). This was followed by those aged 40-44 years 25.0% (8), then 35-39 years in the third position with proportion of 12.0% (4). Patients' ages was clustered around 31-34 years.

Sex

Patients were dominantly female with a proportion of 90.6% (29) as against 9.4% (3) for the male.

Occupation

Majority was self-employed 59.0% (19), followed by the 18.0% (6) that were private sector employee, 12.0% (4) that were unemployed, 6.0% (2) that were housewife, and students 3.0% (1).

Literacy

Patients were generally literate 96.0% (31) while only one was illiterate 3.0% (1).

Level of school attained
Patients had mostly attained primary school and up to high school with proportion of 43.0% (14) respectively. As for those that have attained University they were 12.0% (4).

Have participated in counseling or training
Patients generally have participated in counseling with a proportion of 84.0% (27) as against 15.0% (5) for those that have not.

Mode of treatment
The mode of treatment was generally anti-retroviral drugs 93.0% (30) while 3.0% (1) take traditional medicine and the same proportion did not specify the mode of treatment.

Duration of disease
The duration of treatment was in average 8.4 years with the median at 7.5 years, thus implying that half of the patients had duration of treatment of 0.5 to 7.4 years and the other half 7.5 years to 20.0 years.

CD4 counts / Viral load
Patients generally have done their CD4 count / viral load 87.5% (28), 9.4% (3) did not while 3.1% (1) did not specify.

Source of contamination
Patients generally said not to really know the source of contamination with a very high proportion of 81.3% (26) as depicted by their statements *("I can't tell", "don't know", "no clue"; "can't ascertain the cause, don't know if it is witchcraft because I have always been careful"; just know, just I am surprised"*) Only 18.8% (6) attributed to it to sexual intercourse as they stated *("sexual intercourse", "sexual from husband"; "sex.)*. As for those that stated not to really know how it came about that they are HIV positive, their mostly argued that they had taken all the precautionary measures but still wander how they are tasted positive.

Nature of pregnancy
Pregnancy was planned for a strong majority 69.0% (20), followed by the 27.6% (8) for which it was unplanned while 3.1% (1) said both as she had children through planned and unplanned pregnancy.

Delivery method
Delivery method was mostly normal 79.3% (23), followed by cesarean section 13.8% (4) while 6.9% (2) complained of miscarriage.

Type of gestation
As for the 27 that had gone through with their pregnancy, type of gestation was generally single 96.3% (26), while one had twins.

Weeks of gestation
The weeks of gestation was generally >37 weeks 88.9% (24) while 11.1% (3) did not specify.

Place of antenatal care
The place of antenatal care was their current hospital for majority the 58.6% (17) as against 41.4% (12) for those that said it was somewhere else.

Place of antenatal care if elsewhere
As for those that stated that their place of antenatal care was somewhere else, the places ranged from private health center 50.0% (6), followed by integrated health centers 25.0% (3), while the rest was equally distributed among district hospital, sub-divisional health center, and community health center. Cumulatively, 79.3% (23) did their antenatal care in public health centers.

Survival rate
The number of children ranged from 1 to seven with the median at 3, while the number of survived children ranged from 0 to 5 with the median at 2. The survival rate was 77.8%.

Infected child
As for the infect children, this was specified only by 1 mother who ascertained that the child was infected.

Parity
As for the parity, the mode was 4-6 children 48.1% (13), followed by 7+ with proportion of 37.0% (10), while 2-3 children had a proportion of 14.8% (4). This therefore indicates quite a low rate of new recruits.

Child weighted at birth
Children were all weighted at birth 100% (27).

Child birth's weight in grams
Child birth's weight was generally normal (2.500-4,000), 96.3% (26), while just one of them had macrosomia (>4000).

First pregnancy experience encouraged the second one
First pregnancy experience actually encouraged the second one with proportion of 65.5% (19) while 34.5% (10) said no.

Marital status
Out of the three males, two were currently married and the other one not.

As for the female, 46.7% (14) was currently married, 20.0% (6) never married, the same proportion were concubines (come we stay), 6.7% (2) were formerly married and the same proportion were widowed.

Marital regime
Out of the 20 that were married, all except one were under monogamous regime.

Perceived household wealth quintile
The mode here was middle being the majority 59.4% (19), followed by poorer 34.4% (11), 3.1% (1) felt under the poorest category and the same proportion under the richer.

Residence
The stratification was good here with 59.4% (19) being from rural area and 40.6% (13) from urban area.

Child sex
As for the 27 that had children, majority of them had both male and female 59.3% (16), 25.9% (7) had female children only while 14.8% (4) had male children only. The number of male children range from 1 to 4 with median at 1, while the number of female children ranged from 0 to 3 with median at 1 as well. The proportion of male children was 53.6% while that of female children was 46.4%. As for the male parents, two have children and one did not.

Wontedness of child
Patients in their strong majority wanted the child 75.0% (24). Those that mistimed were 12.5% (4) while those that unwanted the child were 6.3% (2), while the rest did not specify.

Highest level of delivery attendant
The highest level of delivery attendant was dominantly specialized Birth Attendant/Midwife/Nurse 74.1% (20), while where it was doctor / non-physician the proportion was 25.9% (7).

Breastfed within one hour of delivery
Majority breastfed within one hour of delivery 55.6% (15), followed by the 37.0% (10) that Breastfed within two hour of delivery, while 7.4% (2) never breastfed.

Duration of stay in the hospital in days
Duration of stay in the hospital was in average 8.4 days, with the median at 7.5 days, thus implying that half have stayed 0.5 to 7 days and the other half 7.5 to 20 days.

Satisfaction with post-partum care
Patients in their strong majority were satisfied with post-partum care 81.5% (22), one of them making 3.7% was not satisfied while 14.8% (4) did not take stance.

Procreation intention between people persons living with HIV
Couple intends to have child if not yet having
All the 5 patients including two miscarriages that did not yet have a child intended to have one.

Degree of motivation to have a child
All of them were very motivated.

Want to have more children
As for those that already had a child, majority of them 63.0% (17) intended to have more children as against 37.0% (10) that said no.

Degree of motivation to have more children

Mothers were in their majority very motivated to have more children 58.8% (10), 11.8% (2) were motivated, one of them not motivated at all making up 5.9% while 23.5% (4) refused to take stance.

PROCREATION / NEGOTIATING PARENTHOOD CHALLENGES FACED BY PERSONS LIVING WITH HIV/AIDS AND RESORT MEASURES

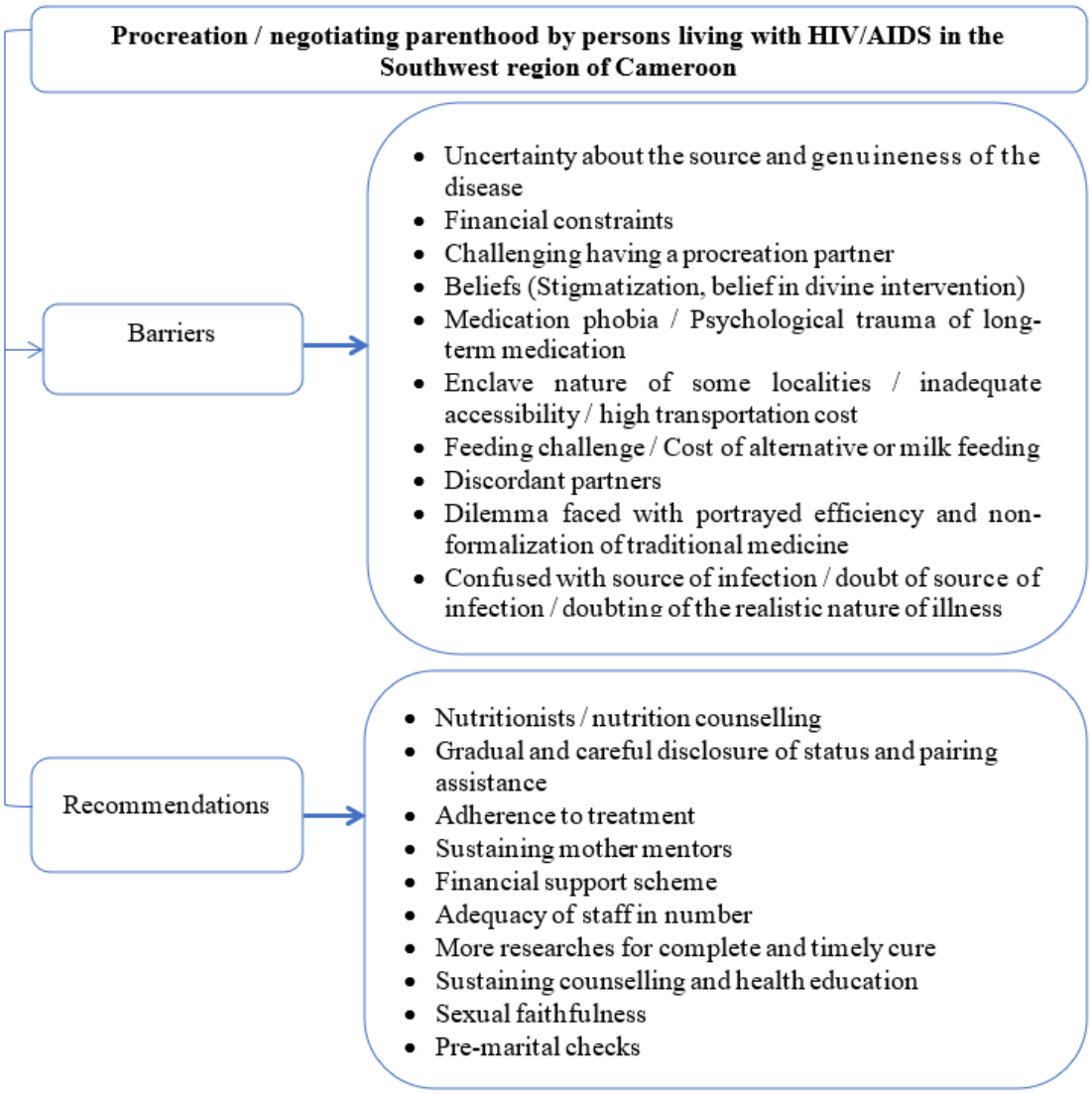

Figure 1: Grounded and operationalized diagram depicting procreation / negotiating parenthood's challenges faced by persons living with HIV/AIDS in the Southwest region of Cameroon and resort measures

Challenges

Challenges faced by female patients (table 2) without a child were among others partner not adequately available thus contradicting earlier studies that suggested that unmarried women express more confidence in their ability to stop childbearing than married women, whom in many contexts report pressure from husbands to have children but nuanced that the relative strength of these conflicting findings varies according to individual and contextual factors (Cooper et al., 2007), which sound logical as we are faced specifically with HIV / AIDS patients in this study context with their related contextual socio-economic and cultural realities as unfolded in this analysis; among them are financial constraints given the inability to finance for health, challenge in having a husband or getting married, fertility issue, cannot conceive, challenge in having a steady partner and defy in disclosing status. As for female patient with child(ren), challenges ranged from fear of child being infected, constraints in having a husband or getting married, financial difficulties given the inability to finance for health, challenge in getting married, experience of depression, needs for a steady follow up of the baby till one year six months, fear of infecting the baby, fear of contaminating husband, fear of disclosure to husband / partner, challenging knowing husband / partner status, challenge in collecting drugs in the hospital, compliance to time prescribed to take drugs, psychological blockage for child bearing, feeling of abandonment, inferiority complex,

post-disclosure problem as issues arise with husband after knowing the status, family fun of mocking at love ones thus fear of family stigmatization, community stigmatization and abandonment, stigmatization and abuse from husband, chronic health issues, transportation / distance issues to treatment centre, challenge in feeding properly, difficulty in affording artificial milk, challenge in appraising the importance of traditional medicine, confused whether negative viral load ends treatment and false PCR results. With respect to fear of infected child specifically, it was earlier reported that the decision whether or not to have children is often complex and influenced by many factors. HIV-positive individuals in Africa have additional considerations to take into account when deciding whether or not to have children. These include the possibility of passing HIV from mother-to-child and the likelihood that one or both parents could die before the child reaches adulthood (Newell et al, 2004). This could justify this fear as it was equally argued that the majority of new HIV infections that occur in children worldwide were among children born to HIV positive mothers, who acquire HIV infection from their mothers (Newell, 2000). Poverty-related constraints with as main corollaries raised by this study being inability to care for health, to feed or to afford artificial milk align with Omari et al. (2003) and Kiarie et al. (2004) who depicted that in resource-poor settings, particularly in Africa, where requirements may be lacking, many HIV positive women are either choosing to breastfed or feel they have little actual choice due to lack of clean water, affordable milk powder or both. In these regions, lack of access to quality primary health care is also an issue that hinders the appropriate management of frequent and often severe replacement feeding related morbidity. A study in Burkina Faso, Cambodia and Cameroon also acknowledged economic constraints faced by HIV-positive women, thus the dilemma between replacement feeding or exclusive breastfeeding with early weaning (Desclaux and Alfieri, 2009). A woman's decision-making process regarding whether or not to breastfeed, in light of social norms, biomedical recommendations and access to antiretrovirals, among other factors, remains highly personal and individualized (Tijou et al., 2009). While HIV-positive women in high-resource settings are generally advised to forego the benefits of breastfeeding so as to avoid potential HIV transmission to their infants, the World Health Organization (WHO) currently recommends that HIV-positive women in resource-limited settings breastfeed exclusively for six months, unless they fulfil the conditions for safe replacement feeding (WHO. 2010). Feeding challenges highlighted in this study context was earlier source of concern as it was reported that people living with HIV/AIDS face increased challenges in maintaining proper nutrition. Despite developments in medical treatment, nutrition remains a key component in managing this condition. The question of stigmatization unfold by the findings is a broadly contemporary challenge faced by HIV / AIDS patients that earlier drew attention. Stigma has been shown to operate differently in different contexts: studies in Zimbabwe have demonstrated that women may wish to become pregnant but do not feel safe enough to realize this decision, fearing potential backlash from the community in particular because of potential transmission of HIV to their children (Feldman and Maposhere, 2002). Other studies in Cote d'Ivoire and South Africa have shown that some women want to become pregnant precisely to avoid the stigma associated with childlessness, predicated not only on social expectations that women should become mothers but also on the ways in which avoiding pregnancy might be interpreted as a statement of being HIV-positive (Cooper et al., 2007; Aka-Dago-Akribi et al., 1999). The negative impact of stigmatization as it make PLWAs not feel free in the society and then the positive impact of child insult associated with cultural norms that may foster the intention to procreate align with the Theory of Reasoned Action (TRA) that suggests that behavioral intensions come before action (Fishbein and Middlestadt, 1989). Therefore, instead of action being guided by knowledge, actions are guided by intentions. Intentions could be influenced by attitude and norms that exist in our society or by relationship with peers and parents. In fact, marriage and childbearing for instance are norms in African communities as they are established indicators for a good wife and successful couple. These societal norms triggered psychological pressures that foster the intention to procreate thereby the mechanism to attain such objective. The favorable outcome of care and successful role model join to this to create a more favorable cultural system for the intention to procreate thus backing the Stage of Change (SoC) theory that argues that, in order to change behavior, an individual must pass through five stages: pre-contemplation, contemplation, preparation, action, and maintenance (Prochaska and DiClemente, 1983). People at different stages have different informational needs and benefit from interventions tailored to their particular stage (National Cancer Institute, Theory at Glance, 2005). The input of counseling highly emphasized actually substantiates the SoC. This patent influence of the cultural context aligns with the Social Learning / Cognitive Theory (SCT) that posits that people acquire and maintain particular behavioral patterns through a constant interaction between three factors: environment, personal factors, and behavior (Bandura, 1997). The theory argues that behavior is not simply the result of the environment and the person, just as the environment is not merely a function of the person and behavior (Glanz, Rimer and Lewis, 2002).

As for male patients (table 3) with children, the challenges highlighted were problem with child health, financial constraints given the inability to finance for health, and medication phobia as one is tired taking drug over a long period. As for those without children, challenge in disclosing to partner, the fact that the disease hinders social life, confusion about alternative treatment, confusion with vaccination and confusion with possibility of complete cure. Issues related to medication has been source of concern as it was corroborated that medications used to treat common opportunistic and co-infections such as Rifampin are widely recognized to alter levels of circulating hormonal contraceptives (WHO, 2010) with the potential to exacerbate side effects of HIV therapy including metabolic syndromes (Womack et al., 2009). In some instances, the marital ambition of some males was shattered by unstable relationship and partner not suitable for marriage, due to the discordance nature of the couple *"I do not have a stable girlfriend. Recently I have a girl about a month now who is always with me, so I am just watching to see how it goes"*.

Comparing between differentiated groups

The common points between male and female were financial constraints and confusion with traditional medicine, and challenge in getting married.

Comparing between those having children and those without children, the common points were financial constraints and lack of partner or unsteady partner.

Table 2: Thematic analysis depicting challenges faced by female HIV / AIDS persons and how they overcome the challenges

Challenges				Response measures			
Code	**Code description**	**Grounding**	**Quotation**	**Code**	**Code description**	**Grounding**	**Quotation**
No child							
Partner's availability	Problem with partner not adequately available	11	*"I have a boyfriend who is not always around" "Steady partner"*	Helpless	Helpless as having not option	4	*"I have no option than to wait"*
				Striving for partner	Striving to have a partner	6	*"Just struggling to see if I can have even just one man"*
Financial constraints	Financial constraints given the inability to finance for health	11	*"After operation I am not menstruating and have no money to follow up" "Financial challenges since I am pregnant and sometimes sick like now"*	Family assistance	Family assistance	5	*"It is my family that gives me assistance"*
				Employer's health support	Employer's health support	7	*"Since I work in CDC, my bed fees is free"*
No husband / Marriage challenge	Challenge in having a husband or getting married	9	*"Getting married is difficult so if I have a husband I can have children"*	Lucrative activities	Involvement in lucrative activities to be self-sustained	8	*"As such I am working hard to have something doing so that any man who comes I will not be totally depending on him"*
				Family pressure	Family pressurizing for marriage	4	*"Pressure from my family to get married and have children especially my uncle, so I tell them I can't*

							force myself into a man"
Fertility issue	Fertility issue, cannot conceive	7	*"Fertility issue" "Difficulty in getting pregnant"*	Gynecologist	Visit gynecologist to handle fertility issue	5	*"Visit gynecologist"*
				Taking ART	Compliance to ART	5	*"I had to continuously take my ARTs" ".*
				Traditional medicine and ART	Combine traditional medicine and ART	2	*"Took traditional medicine together with my drugs but at different hours / time…it is not easy but I succeeded to have this man with whom I am pregnant"*
Steady partner	Having a steady partner	9	*"To get a steady man"*	Strived and had a partner	Strived and had a procreation partner	5	*"It is not really easy but I succeeded to have this man with whom I am pregnant though he too has abandoned me"*
Disclosure	Challenge in disclosing status	8	*"Disclosure"*	Protected sex	Protected sex	2	*"Keep to myself and ensure I protect myself during sexual intercourse"*
				Lubrication	Ensure adequate lubrication during sex	3	*"I ensure I am well lubricated*
				Limited sex	Limited sex	3	*"I also have sex when I know I am fertile and have limited sex to say twice a month"*
Have child(dren)							
Fear positive child	Afraid of child being infected	11	*"Afraid of my child being infected" "Fear of child being positive"*	Health personnel awareness	Inform health personnel about one's status for proper care	5	*"I make sure that the nurses know I am positive to take proper*

							care"
No husband / Marriage challenge	Challenge in having a husband or getting married	13	*"No husband" "Getting a husband to married"*	Proper care	Proper care of the child	6	*"Take care of my child"*
				Compliance to treatment	Compliance to treatment by taking drugs as prescribed	7	*"Take my drugs in time"*
Financial constraints	Financial constraints given the inability to finance for health	19	*"Financial challenges" "Financially we are not very viable" "Financial issue, transportation, feeding, caring for child health, not support from CDC cottage due to crisis as the hospital was closed down"*	Lucrative activities	Engaging in lucrative activities to raise income	11	*"Doing petit businesses to take care of my two children alone" "We are trying to do business" "Do farming to earn a living"*
Marriage	Challenge in getting married	9	*"I do not have challenge when it comes to procreation. I take it normal because my husband knows I am positive. We all met at the treatment center and I fell in love. We met in the hospital and I needed to give someone's number and so he came and gave his and that is how we started and he showed interest in me and we are now having children though not married" "Marriage"*				
Depression	Experience depression	9	*"Depression"*	Self-consolation	Console oneself that the disease is not a dead sentence	5	*"I console myself that it is not a dead sentence"*
Bay health care	Needs for steady follow up of the baby till one year six months	8	*"Care for the baby; Needs constant follow up till one year six months"*	Job abandonment	Job abandonment to care for the baby	6	*"Had to stop my work to care for my baby to ensure she gets the right food and eats well"*
Fear of infecting baby	Fear of infecting the baby	9	*"Fear of infecting my baby; I make sure I keep sharp object away" "Fear of passing infection to offspring"*	Compliance to treatment	Compliance to treatment (medication and viral load test)	2	*"Take medication regularly and do viral load as required"*
Fear of	Fear of	9	*"Fear of*	Compliance	Compliance	5	*"Take my*

infecting partner / husband	contaminating husband		*contaminating my husband"*	to treatment	to treatment by taking drugs as prescribed		*drugs regularly"*
				Test	Husband makes tests regularly as to monitor one's status	5	*"My husband does his test regularly"*
Disclosure	Fear of disclosure to husband / partner	19	*"Disclosure; I do not know if he is positive but will try to ask him when he comes"* *"I did not have the courage to disclose my status to my husband"* *"I have decided to keep it from my husband even though he keeps accusing me because he can sell me out to the public"* *"Secretive; I do not want my partner to know"* *"I tell my partner to use condom each time we have sex"*	Compliance to treatment	Believe by complying to treatment the husband will not be infected	7	*"I believed taking my drugs well he will not be infected though he discovered through my medications"*
				Tricky game	Tricky game as health personnel to deceive partner not to suspect her status, taking drugs when husband is not available	8	*"but since I am working in the hospital and he does not know what I am doing, I have made him understand that I give drugs to people so if he sees in my bag, he will take is normal"* *"I take my drugs when he is not available"*
Hidden partner / husband status	Challenging knowing husband / partner status	8	*"Disclosure problem as I suspect my partner because I head he had a girl friend who died of HIV"*	Striving for HIV test	Struggling for the husband to make HIV test as to know the status	5	*"I am struggling that he does the test so that I am sure he is taking treatment"*
Collecting drugs	Challenge in collecting drugs in the hospital	8	*"Collecting drugs from the hospital*	Bulk collection	Collecting drugs for a longer period	5	*"When I finally make up my mind to go and collect, I ask the nurses to give me the quantity that will take me for three months"*
Compliance to drug time	Compliance to time prescribed to take drugs	9	*"Time prescribed to take drugs"* *"Taking my drugs regularly"*	Self-discipline	Self-discipline to make sure drugs is	8	*"I sometimes fail to take my drugs. So I make sure the*

					taken at the right time		*next day I take it the right time" "I have to set my alarm clock to wake me at 5:00 AM"*
Psychological problems	Psychological blockage for child bearing, feeling of abandonment, inferiority complex	9	*"Did not want a child after my first son" "Inferiority complex" "Feeling of abandonment"*	Research and awareness	Research and awareness help to overcome the blockage after realizing that one could get married without infecting husband and having negative children	5	*"Through research I discovered that I could get married and took the courage to accept a man"*
Post-disclosure problem	Post-disclosure problem as issues arise with husband after knowing the status	8	*"Serious problem with my husband after he discovered"*	Counseling	Counseling husband about compliance to treatment hindering transmission and child's infection	8	*"To manage this I explain to him that I was positive and I am taking my drugs so that he will not be infected as well as the children. I quoted to him that since I am with him he is not infected likewise the children"*
Family stigmatization	Family fun of mocking at love ones thus fear of family stigmatization	7	*"Mockery, my family is the type that mocks people a lot"*	No disclosure	No disclosure to family	8	*"If they know they will cause a lot of stigma and you will die before time"*
Community stigmatization	Community stigmatization and abandonment	11	*"Stigma, when someone discovered that you are positive he abandons you" "Insult from community" "Stigma and what people say about the disease"*	Powerless	Powerless in front of such situation and take it as such	4	*"We just take it as such"*
				Devine justice	Relying on divine justice	8	*"Leave it in God's hands"*
				Endurance	Endurance or self-control	6	*"I do all to endure"*
				Compliance to treatment	Simply follow one's treatment	4	*"I take my drugs"*
Fertility /		5	*"Difficulty to get*	Following	Following	2	*"I am just*

pregnancy issue			*pregnant"*	fertility	fertility issues as to resolve them and get pregnant		*still trying following my fertility period"*
Husband's stigmatization	Stigmatization and abuse from husband	2	*"The challenge I have is that I am positive and my husband is negative and he uses it as an insult"*	Threats	Threatens husband for prosecution if exposure of status	3	*"I try to manage it in the sense that I also threaten him that he will be lock up if he exposes me"*
				Acceptance of status	Acceptance of status which enhances coping	4	*"I have equally accepted my status and no matter what he says it does not worry me"*
Chronic health issues	Chronic health issues	4	*"Ill health, I often consult for treatment"*				
Transportation / distance issues	Transportation / distance issues to treatment centre	11	*"Challenge in getting viral load done and PCR of the baby dues to transportation from Mukonje in Kumba to CDC Cottage hospital. Close down of our hospital (CDC Mukonje hospital) due to crisis"*	Advanced post nurse	Drugs supplied by a post nurse	2	*"So we collect our drugs from a post nurse who collects drugs from CDC Cottage"*
				Lucrative activities	Do lucrative activities to raise money	3	*"Work job to have transport to go and do my test at our central hospital cottage and viral load"*
Feeding	Challenge in feeding properly, of affording artificial milk	13	*"It is not easy for the child to have good nutrition especially when you wean the child from breast milk" "My own challenge is feeding the baby because I always give artificial milk. So what I do is as am pregnant now, I start buying milk at least a tin each time I come to clinic so by the time I put to birth I already have at least one carton". "My child was premature, so it was not easy for*				

			me to leave from the maternity to breast feed him and so started formula feeding even though I still had to be going there to give him the milk and it was not easy at all and till date he is two years six months, he is still taking milk".				
Child's ill health		7	"Illness, since my child is positive, when sick it is really challenging, because the percentage of reduction in health care services provided to use at the CDC centers is not available, so going to sick health care in another hospital challenging"				
Traditional medicine	Challenge in appraising the importance of traditional medicine	8	*"." there is another one that I heard ooo one of my friend called me and said she knows if she tells me something I will be angry so I said she should go ahead and she said she is taking medicine in and that if I drink the medicine all, everything will finish from my body, so I was angry and asked her who told her I was positive? So I told her to go and drink her medicine and that I am fine". "Yes, there was a woman who came and sat in the hospital here until she gave me her number, I wanted to report her in this hospital, she gave me a number that I should call and that she is working with the people and they are giving the medicine in 5 litres and when you drink it the illness will disappear from your*	Continue with ART	5	Simply continue with ART	"*So I told her to go and drink her medicine and that I am fine"*

			body, she said she was also positive and she drank the medicine and got well, that it is only 15000frs". *"I for one, I have been hearing of traditional medicine, but I have never taken because it is still money that you will spend meanwhile these ARVs are free of charge and you will be fine, with God we believe that one day there will be treatment and we will be fine". " for the traditional medicine I have also heard from a girl who said ERU, common leaves, vegetables and so on cures HIV but I have never seen someone who has taken it until got healed". "I have heard but the issue here is the dosage, but medically they know the dose for the different ages so I cannot attempt even though I have heard people talking about it"*				
End of treatment	Confused whether negative viral load ends treatment	1	*"Apart from that, I also heard one man said he did his viral load and he was told there is nothing again and he said he will not take medicine again so I do not know if the hospital is giving that kind of advice to people ".*				
False PCR results	False PCR results	1	*"My own challenge almost made me went mad, when I was pregnant I did everything possible until I opted for CS to prevent the child but when the first PCR was done, I was informed the baby was positive I could*				

			not believe I said it was a lie because I did all to ensure the baby is not infected so how come, so I became emaciated and was so paled. the child was placed on medication and every month he was taken to the hospital for checkup, so when viral load was just introduced my son was the first to do the test, one day while at home, I was called by the doctor to come to the hospital immediately with the child which I did and he took him to the mini lad and his test don and he came out negative he was tested again in the main Lab and he was still negative. He had taken medication for a year plus. After the results the doctor called me in his office and apologized. He then asked what the child likes to eat and I said Phospatine and he gave me 10,000frs to buy it. So there was a mix up and I thank God it was discovered and he is fine".				

Table 3: Thematic analysis depicting male HIV / AIDS patients' perceptions of challenges faced by HIV / AIDS persons and how they overcome the challenges

Challenges				Response measures			
Code	**Code description**	**Grounding**	**Quotation**	**Code**	**Code description**	**Grounding**	**Quotation**
Have child(ren)							
Child' ill health	Problem with child health	5	*"My last child had a lot of medical issues"*	Halting procreation	Couple halted procreation for a while before resuming	4	*"We decided to stop"*
Financial constraints	Financial constraints given the inability to finance for health	4	*"Financial difficulties; not been paid by CDC" "Raising the children is not easy at all. All are going*	Joint effort	Joint effort to generate income	3	*I am a tailor and my wife a farmer"*
				Family planning	Family planning during crisis	2	*"Gave my wife family planning methods due to*

			to school but not enough income"		period		*the crisis as we are not working."*
				Natural improvement	Natural improvement of the crisis situation as things are getting better	2	*"It is now that things are getting better and we resumed the method and she is now pregnant"*
Medication phobia	Medication phobia as one is tired taking drug over a long period	2	*""Not easy to take medication every day. People become tired taking drugs on daily basis and at a particular time. Even I am tired already. Why can researchers not come out with drugs that can cure HIV?"*				
No child							
Marriage challenge	Difficulty in having a partner and getting married	6	*"Marriage challenge…I and so looking at a very beautiful girl that I can even get married"*	Devine intervention	Committing to God for divine intervention	4	*"I am committing myself to God and following up my treatment to be healthy to reduce my viral load"*
How to get a wife	How to get a wife with respect to HIV status	7	*"How to go about getting a wife"*	Confused	Confusion or dilemma whether to have a wife who is also positive	2	*"Looking as to whether to have a wife who is also positive"*
Disclosure	Challenge in disclosing to partner	5	*"Disclosure"*	Haphazard disclosure	Expecting more of haphazard disclosure	2	*"Don't yet know what to do, except something happens for my partner to know"*
				Health personnel support	Relating with the health personnel to help getting a partner	3	*"I try also to negotiate with a nurse to get a girl for me and we can then negotiate our relationship because I see that only a lady who is like me that we can pull well. If one is not positive it might bring disrespect and insults. At times some will even start dating*

							even insulting one"”
Social life	Hinders social life	7	*"Can't enjoy my social life like clubbing and being with friends because I have to take my drugs"*				
Traditional medicine	Confusion about alternative treatment	5	*"I have heard of a treatment though I have not seen anyone treated "said a participant. "yes of course many people talked about it, but I have not yet tried. So I do not know whether it, has treated someone" said another, " well, I have also heard, tsuip….but it is like , you know, that focus , that is to know that what they are saying is not a fabricated story is difficult, hahaha".*	ART	Continue with ART		
Vaccination	Confusion with vaccination	i	*"I have heard of vaccination that is being implemented in other African countries but I do not know if it is true and how effective it is".*	ART	Continue with ART		
Complete cure	Confusion with complete cure	i	*"I have also heard about a treatment in Germany and that when you take it for six month you will be fine but do not know how effective it is".*	ART	Continue with ART		

Resort measures

Table 4: Thematic analysis depicting patients' recommendations to be implemented in order to help HIV positive persons in relation to procreation and parenthood

Code	Code description	Grounding	Quotation
Counseling / health education	Counseling, advising or educating on various aspect of HIV	6	*"Counseling"; "For those who are in need of a wife and a child , the man should be open and get advise on how he can mate with her and get her pregnant and the woman followed up and the child is negative"; "For couples who are already positive and want a child, they should seek advice from the professionals so that they are followed up and their baby is not infected"; "More*

			lectures given to the patients by the healthcare providers so that they can go home and explain to their partners what he is going through"; "Look for more strategies on how to educate the clients"
Adherence to treatment	Adherence to treatment	6	*"To me, I will recommendation, people should adhere to their treatment"; "Adhere to treatment so that the virus should not be transmitted to the other partner"* *"Mixture of medication is not good and so patient's drugs should be maintained and not changed. Especially when there is drug stock out and that of children given to adults."*
Research	More researches to be carried out	3	*"More research should be done by the health experts"* *"More research should be done by the medical expert so that the treatment can be available"*
Pre-marital checks	Pre-marital checks	2	*"Partner should do test before marriage and seek advice from health personnel"*
Life style	Adjusting life style	2	*"regulate their life style"* *"Give more health talk and do follow up of clients with respect to lifestyle"*
Faithfulness	Faith to partner	2	*"People should stay only with their partners in order not infect another person or be re-infected with the virus"; "Faith to you partner and take you drugs well. Condom is no guarantee"*
Good medical care	Good medical care from health care workers, which should be sustained by adequate motivation, number of staff and good working conditions	2	*"The staff should continue with the good care rendered to the clients which has led to positive results which we can testify"* *"The government should improve on the working condition of the care givers/ providers as this will motivate them to continue to render quality services to the clients"* *"The government should employ more workers in the HIV unit so that they can handle clients effectively"*
Gradual disclosure	Gradual and careful disclosure to partner	2	*"Disclosure to partners should not be done in a hurry but encouraged"* *"The hospital should take proper percussions before disclosing the status of partners"*
Protected sex	Protected sex, for instance using condom	1	*"Use condom in order not to infect someone or re-infect yourself or pick up another sexually transmitted infection"*
Research communication	Research communication to get patients updated on the evolvement and changes	1	*"Research work being done in the domain of treatment for HIV should be constantly announced so that people should be aware that something is being done in the direction of eradication of HIV/AIDS"*
Adequate availability of drugs	Adequate availability of drugs in quantity and timely	1	*"Drugs should be available at all times"*
Support group	Club/support group	1	*"Reinstitute the adolescent club/support group. It was very helpful because youth we met others"*
Ethical consideration	Ethical consideration as Health personnel should maintain confidentiality	1	*"Health personnel should maintain confidentiality ethics"*

Response-measures

To resolve these challenges, couples halted procreation for a while before resuming; joint effort to generate income; family planning during crisis period and natural improvement in the crisis situation as things are getting better; patients expressed concerns about the inability of the health system to provide them with a complete cure, which triggered their quest for alternative sources of treatment; growing interest in traditional medicine by some patients aligns with the HBM as they were not actually satisfied given the inability of the current therapy to provide complete care, and in this very perspective, the weaknesses of current treatment and fear as a major corollary equally resulted to discordant-couples making it difficult for people to take risk with a contaminated partner; some were just helpless as having not option; some strive to have a partner; family assistance; employer's health support; involvement in lucrative activities to be self-sustained; family pressurizing for marriage; visit gynecologist to handle fertility issue; compliance to ART; combining traditional medicine and ART; strived and had a procreation partner; protected sex; ensure adequate lubrication during sex and limited sex. They also coped by committing to God for divine intervention but were in a confusion or dilemma whether to have a wife who is also positive. Some were expecting more of haphazard disclosure which is a sort of belief in miracle while others were relating with the health personnel to help getting a partner (table 2 & 3).

As for the recommendations (table 4) that patients thought could be implemented in order to help HIV positive persons in relation to procreation and parenthood, the following were highlighted: Counseling, advising or educating on various aspect of HIV; adherence to treatment; more researches to be carried out. With respect to life style adjustment, it was earlier argued that the majority of new HIV infections that occur in children worldwide were among children born to HIV positive mothers, who acquire HIV infection from their mothers (Newell, 2000). Additionally, HIV positive patient's may manifest high-risk sexual behavior characterized by fertility intentions, multiple sexual partners, non-use of contraceptives and non-disclosure of HIV status to their sex partners (Kline et al, 1995). So, the desire of HIV infected person to have children in the future has significant implication for the transmission of HIV to their sexual partners and new born (Chen et al., 2001). Excess fertility which is the difference between wanted total fertility and actual total fertility is greater among the HIV-positive population than the overall population (Bankole, et al, 2009). Consequently, the desire and intent to have children among HIV-infected individuals may increase because of improved quality of life and survival following commencement of Anti-retroviral Treatment (ART) and reproductive health service (Harries et al., 2007). Despite the growing importance of fertility issues for HIV-infected men and women, little is known about their actual fertility desires and intentions (Bankole et al., 2011) and how they negotiate parenthood. Most of the studies conducted in Cameroon on fertility desire among PLWHIV are not consistent in different parts of the country because fertility varies by different characteristic like religion, culture, educational status and residence urban/rural. More so, people living with HIV/AIDs encounter many challenges in the interactions with reproductive health services, often impacting their pregnancy decisions (Gombachika et al, 2013). This study also recommended faith to partner and in this vein, a study carried out at the University of Douala revealed that both male and female students constitute a high-risk group because of multiple partners due to the adoption of several supposedly emotional/financial safe strategies (Njikam Savage, 1998). Therefore, to avoid being left in the lurch, it was prudent while having a (primary) regular boyfriend/girlfriend to still keep one on the side (secondary relationship) in case one was jilted (Njikam Savage, 1998). To these sponsors, the girls could not impose condom usage lest they in annoyance left and withdrew their financial support. Other recommendations were good medical care from health care workers, which should be sustained by adequate motivation, number of staff and good working conditions; gradual and careful disclosure to partner; protected sex, for instance using condom; research communication to get patients updated on the evolvement and changes; adequate availability of drugs in quantity and timely; club/support group and ethical consideration as health personnel should maintain confidentiality. To palliate to economic challenges, in line with this study context, it was suggested the strengthening of women's formal education; empowering women in all spheres of life (especially improving their economic standing that prevents women from engaging in risky sexual practices); educating women about HIV transmission methods and HIV prevention and control strategies using behavior change intervention strategy prepared for women to reduce their vulnerability; advocating for the use of family planning to reduce unsafe abortions and syphilis; as well as regular screening and testing for syphilis are recommended (Worku et al., 2022).

Conclusion

Though number of barriers to procreation and parenthood of PLWHAs were highlighted, the commonly shared ones were financial constraints, dilemma with traditional medicine, challenge in getting married as stemming from lack of partner or unsteady partner. However, studies suggest that PLWHAs desire and continue to have children equally like those without HIV infection (Cooper et al, 2007; Ogilvie, 2007), thus highlighting the ultimate need to foster mechanisms that will enhance procreation and parenthood to PLWHAs while frustrating the barriers is capital. It is in this perspective that this study unfolded number of response-measures to barriers to procreation of PLWHAs with substantial recommendations in this prospect.

Suggestions for Further Research

PLWHAs generally were confused with source of infection / doubt of source of infection / doubting of the realistic nature of illness. A bold step should be taken to think out of the box as to throw objective light on the real nature of this disease which is more and more considered as a conspiracy and manipulation of the immune system than an actual viral infection. Also, the inability to provide treatment for a common viral disease is suspicious and is likely to back most of the conspiracy theories surrounding HIV / AIDS.

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