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Assessing Strategies to Improve Participation of Men in HIV Services in the Buea Health District of Cameroon: A Literature Review

Melvis Bora Samba[1,*], Alfred Kongnyu. Njamnshi[2], Dickson Shey Nsagah[1], Verla Siysi Vincent[3]

[1]Department of Public Health and Hygiene, Faculty of Health Sciences, University of Buea, South West Region, Cameroon
[2]Department of Internal Medicine & Specialties (Dermatology and Neurology),
Faculty of Medicine & Biomedical Sciences, University of Yaounde I, Centre Region, Cameroon
[3]Departments of Medicine, Faculty of Health Sciences, University of Buea, South West Region, Cameroon
*Corresponding author: borathestar1@gmail.com, boramel@yaho.com

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Abstract **Background**: Men have been found to lag behind when it comes to seeking health care and this has also been evident in their response to HIV services, especially HIV testing which is the entry point in the prevention cascade. A number of studies carried on men have focused on men who have sex men or those partners to women at the antenatal clinics, but little is known about the majority of men who fall out of this group. Our aim here is to assess HIV strategies that can be used to scale up HIV Services uptake, especially HIV Testing, by men in the Buea Health District of Cameroon. To realize Sustainable Development Goal 3, especially target 3.3 which aims at ending the HIV epidemic by 2030, participation by men in HIV Services is imperative. **Method:** We used principal data bases like Google scholar, PubMed, Medline, EMBASE. Also, the website of the World Health Organization (WHO) and the Joint United Nations' Programme on HIV and AIDS (UNAIDS) were further searched. Our search used the keywords HIV Services, HIV Testing, men, male, and men testing. We included articles, journals and reports from international and national organizations, including non-governmental organizations that were published from 2010 to 2019 in English. **Results:** The review revealed that men are not only slow in testing but in some worst instances, because of fear to know their status, some refuse their women from carrying an HIV test. This contributes to increase the proportion of people with unknown HIV status. Strategies like community based testing; especially HIV self-testing, home testing and community outreach has great potential to reach more men. Also, community based dissemination of the right information on HIV through health education can be a great tool to change attitudes and perception so as to cause more men yet unreached to participate actively in HIV services. **Conclusion**: Taking health care to the men instead of waiting for them to come is required to increase their access and uptake of HIV services.

Keywords: *HIV services, HIV testing, men, male, and men testing*

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1. Introduction

HIV is still a major public health problem after being around for almost four decades, and poor engagement by men in HIV services and healthcare generally is an emerging concern in the fight against the epidemic [1,2,3]. It is observed that men are less likely than women to engage in HIV services across the care cascade, especially HIV testing and therefore resulting in poorer clinical outcomes in men [4]. This less engagement of men is also affecting the engagement of women, adolescent and children [5]. This is because some studies have revealed that cultural and gender norms give men more power than women in sexual decision-making with regards to abstaining, having concurrent sexual partners, and using condoms [6,7]. This makes it urgent for men to be involved as key players in the HIV care cascade if we hope to attain the HIV eradication target. Other studies revealed that in some women, the fear of rejection and violence from partners is a barrier to HIV testing, or if tested, they are afraid to return to the health care facility for test results and antiretroviral drugs [8]. The HIV/AIDS eradication is rooted in the sustainable development goal 3 which aims at achieving global health security by 2030 [9], and with this low engagement by men, how to reach this bold target is one of the majour question facing the public health community.

Despite all the intervention put in place to scale up HIV services utilization, HIV testing is still low in men. Only a small number of studies have addressed HIV testing among men in Africa despite the fact that Africa has a

generalized epidemic as opposed to other regions in the world with their Epidemic localized to certain groups or key populations [10]. The proportion of men aware of their HIV status has remained well below the levels required to substantially impact the pandemic. Some men have never tested and even those who had once tested cannot account for their current status. Therefore the importance of full engagement by men in the global HIV response is increasingly recognized. In Africa, heterosexual adults continue to be the most at-risk group for HIV infection but we see that HIV testing rates are persistently higher only among women and therefore focusing on investigating additional strategies to scale up testing among men is a critical in supporting men's sexual health and preventing HIV transmission [11]. The reason men are lagging behind when it comes to HIV testing which is the first step in the HIV and AIDS prevention process is necessary to be uncovered in every setting [12]. Health facilities alone have not been sufficient to achieve universal access and therefore with the universal testing and immediate treatment of HIV infected individuals, different strategies are being employed with hope to reach significantly more people. Many studies have been done on women and children [13,14] with men coming under the sub-set 'male as partners', or if the programs is focused on men, it is in most instances about men who have sex with men (MSM) [15,16,17,18] or intravenous drug users (IDU) which fall under key populations. Little is said of the men outside these groups who never benefit from these programs. What becomes of them?

The importance of men in the global HIV response is increasingly recognized and the gender- based, social, economic, political, and institutional factors behind these patterns in a number of countries have been documented, but despite all that has been done so far on HIV, we found little has been done in order to assess whether prioritize the health of men just as it is done for women and children can help in improving the uptake of HIV services by men. This review focuses on the men, many who are partners, husbands or fathers as they can either contribute to felicitate or impede the eradication progress in women and children. To maximize the health outcomes for children and women, we must move beyond seeing men as simply "facilitating factors", to enable women to access health-care services, but view them as constituent parts of reproductive health policy and practice. We want to assess how a comprehensive system of prevention can be implemented in which the health of men is put on the same platform as that of the women and children. We will verify the HIV situation and testing uptake in men and analyze the strategies used to see which one has attracted more men to test for HIV. This can help to scale up testing uptake among men in the Buea Health District if implemented. Identifying contextual influences on men's testing behavior is critical to help address gender gaps in HIV testing uptake [12].

2. Method

In this literature review we used a structured search in principal data bases like PubMed, Medline, and EMBASE. The World Health Organization (WHO) and The Joint United Nations' Programme on HIV and AIDS (UNAIDS) websites were further searched. We searched for articles, journals and reports from international and national organizations, including non-governmental organizations that were published from 2010 to 2019 using the keywords HIV Services, HIV Testing, men, male, and men testing. The literature included both qualitative and quantitative research articles but excluded articles that focused only on men who have sex with men, those not geared towards the uptake of HIV services by men and those not in English.

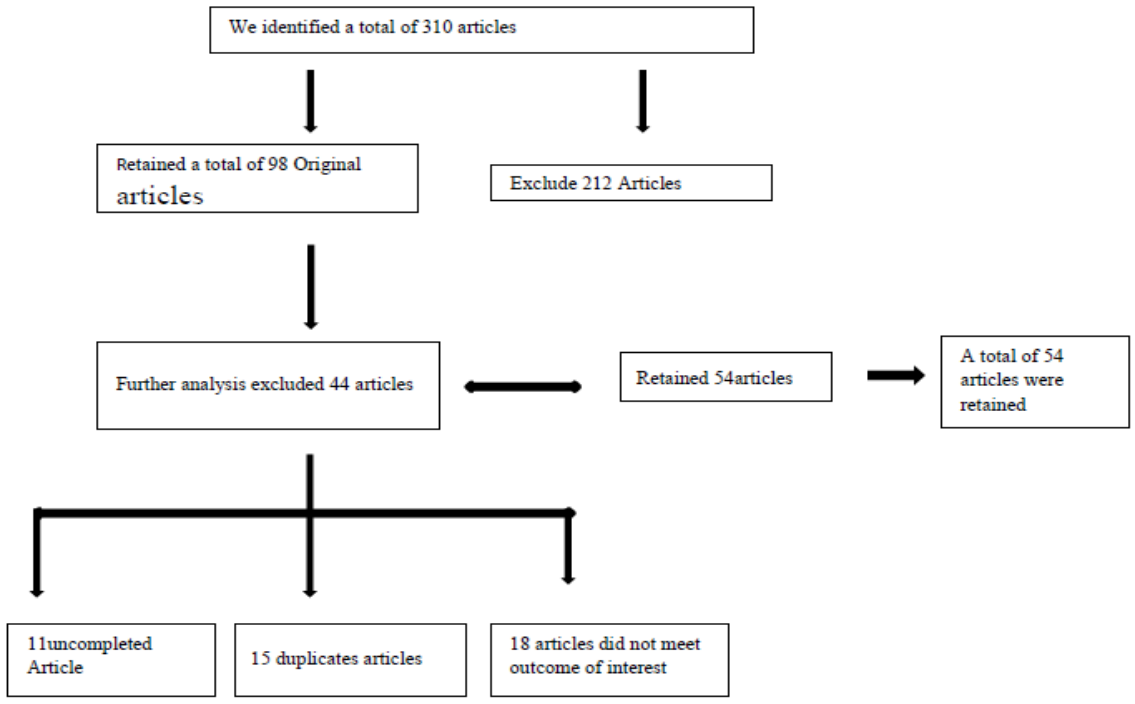

Figure 1. Flow Diagram for Inclusion and Exclusion Criteria for Articles in this Review

Limitation encountered in course of the search is that the search identified good journal published on HIV services uptake but very few relating to men in our exact age category. Most of the journal, and even WHO and UNAIDS documents consider adult as men from 15 years and above. So we 21 years for ethical legal reasons while literature and data reported on adult men put as from 15 and above were considered. Interventions to fight HIV were analyzed and the strategies used to improve participation by adult men in HIV services examined.

3. Results

3.1. Socio-demographic Characteristics

The study population reported in the studies constituted adult men 21 years and above. Some health reports classify men from 15 to 45 years or 15 to 65 years and they were included in this study because no database gave statistics strictly about men 21 years and above. Literature reveals that despite the fact that testing is generally low in men, it has been found to even be lower in men of low socio-economic status [19], but men with good information about HIV were more likely to have tested for HIV irrespective of economic status or their education level. Also the difference in testing with respect to education level was discovered to be as a result of the educated men being able to seek for other means of information through internet or work that can expose them to testing. In some countries, men with a good education from secondary school and above, being married or widower or having a history of TB and being above the age of 20 were more likely to have recently tested for HIV [20].

Table 1. Studies done in relation to HIV Services uptake by men

SN	Article Title	Author, Year and Location	Objective(s)	Method Used
01	A scoping review on the role of masculine norms in men's engagement in the HIV care continuum in sub-Saharan Africa	Sileo et al (2019) SSA	To identify how masculine norms influence men's HIV care engagement in sub-Saharan Africa.	A Review that yielded a total of 17 qualitative studies from 8 countries
02	An Exploration of Men's Knowledge, Attitudes, and Perceptions of HIV, HIV Risk, and Willingness to Test for HIV in Yendi District, Northern Ghana	Leblanc and Andes (2015) Ghana	To explored men's HIV knowledge, perceptions of HIV risk, and willingness to test for HIV	multi-method approach was used, -surveys, focus group discussions and interviews
03	Barriers to HIV Testing in Côte d'Ivoire: The Role of Individual Characteristics and Testing Modalities	Kevin J. et al (2012) Côte d'Ivoire	To investigated barriers to HIV testing in Côte d'Ivoire	Interviewer administered questionnaires
04	Community influences on married men's uptake of HIV testing in eight African countries	Stephenson et al (2013) 8 African Countries	To investigates community influences on HIV testing among men ages 15-54	Demographic and Health Survey (DHS) data from the countries involved
05	Community-based strategies to strengthen men's engagement in the HIV care cascade in sub-Saharan Africa	Sharma et al (2017) SSA		
06	Developing national strategies for reaching men with HIV testing services in Tanzania: results from the male catch-up plan	Conserve et al (2019) Tanzania	To develop the Male Catch-Up Plan strategies For Policy or Innovation	In-depth interviews
07	Factors contributing to men's reluctance to seek HIV counselling and testing at Primary Health Care facilities in Vhembe District of South Africa	Mambanga et al (2016) Vhembe District South Africa	To Explore the level of awareness of men regarding HCT services; the attitudes of men towards HCT services; the socio-cultural and political factors that prevented men from seeking HCT services and the gender and stigma-related factors that influenced men's level of utilization of the services	Mixed Method
08	Factors Associated With HIV Testing Among Men in Haiti: Results From the 2012 Demographic and Health Survey	Conserve et al (2017) Haiti	To examining men's HIV testing behaviors in the Caribbean	DHS using interview
09	Factors Associated with HIV-Testing and Acceptance of an Offer of Home-Based Testing by Men in Rural Zambia	Hensen et al , (2014) Rural Zambia	To describe HIV-testing among men in rural Lusaka Province, Zambia	a population-based survey using questionnaires
10	Factors influencing the uptake of voluntary HIV counseling and testing in rural Ethiopia: a cross sectional study	Teklehaimanot et al (2016) Ethiopia	To understand factors influencing the utilization of VCT among rural adults in Ethiopian.	cross sectional
11	HIV Testing and Health Care Utilization Behaviors Among Men in the United States: A Latent Class Analysis	Dangerfield et al (2017) USA	To explore underlying profiles of U.S. men regarding HIV testing and health care utilization	Using data from the 2014 National Health Interview Survey.
12	HIV testing is associated with increased knowledge and reductions in sexual risk behaviours among men in Cape Town, South Africa	Scott-Sheldon et al (2015) South Africa	To evaluated the impact of testing on HIV knowledge and sexual risk among men in South Africa.	A survey that assessed testing history, knowledge, and sexual behaviors
13	Men "missing" from population-based HIV testing: insights from qualitative research	Camlin et al 2016 SSA	To identify cultural factors and community processes that influence men's HIV testing uptake	Mixed Method: participant observation; focus group discussions and in-depth interviews

SN	Article Title	Author, Year and Location	Findings	Recommendation	Reference
01	A scoping review on the role of masculine norms in men's engagement in the HIV care continuum in sub-Saharan Africa	Sileo et al 2019 SSA	Six major themes emerged that demonstrated how norms of masculinity create both barriers and facilitators to care engagement. Barriers included the exacerbating effects of masculinity on HIV stigma, the notion that HIV threatened men's physical strength, ability to provide, self-reliance, and risk behavior, and the belief that clinics are spaces for women. However, some men transformed their masculine identity and were motivated to engage in care if they recognized that antiretroviral therapy could restore their masculinity by rebuilding their strength. These findings demonstrate masculinity plays an important role in men's decision to pursue and remain in HIV care	Need to tailor HIV messaging and counseling to better engage men is an agenda for future research in this area.	[44]
02	An Exploration of Men's Knowledge, Attitudes, and Perceptions of HIV, HIV Risk, and Willingness to Test for HIV in Yendi District, Northern Ghana	Leblanc and Andes 2015 Ghana	History of condom use, perception of risk, paying for an HIV test, and age were all significantly associated ($p < .05$) with willingness to test. An aversion to the hospital was the most prominent theme among participants. Aversion was due to perceived lack of confidentiality, preference for traditional healers, perceived costs, and fear of testing.	VCT should target men for HIV prevention and VCT patronage, and more locations outside of hospitals should provide testing services.	[38]
03	Barriers to HIV Testing in Côte d'Ivoire: The Role of Individual Characteristics and Testing Modalities	Jean K. et al (2012) Côte d'Ivoire	Recent HIV testing was reported by 6.1% of men and 9.5% of women (including 4.6% as part of antenatal care). Among men, having a low socioeconomic status, having a low HIV-related knowledge level and being employed [compared to those inactive: adjusted Odds Ratio (aOR) 0.46; 95% confidence interval (CI) 0.25-0.87] were associated with lower proportions of recent HIV testing		[27]
04	Community influences on married men's uptake of HIV testing in eight African countries	Stephenson et al (2013) 8 African Countries	After controlling for individual and household level factors, community level factors of demographics, economics, and behavior and knowledge remain significantly associated with HIV testing among men	Design programs aimed at encouraging the uptake of HIV testing among men in Africa	[12]
05	Community-based strategies to strengthen men's engagement in the HIV care cascade in sub-Saharan Africa	Sharma et al (2017) SSA	Monica Sharma and colleagues discuss evidence-based approaches to improving HIV services for men in sub-Saharan Africa		[40]
06	Developing national strategies for reaching men with HIV testing services in Tanzania: results from the male catch-up plan	Conserve et al (2019) Tanzania	Barriers of HTS were fear of a positive test result, and low HIV risk perception. Proposed strategies from the Male Catch-Up Plan to address these barriers included non-biomedical and biomedical approaches. Non-biomedical strategies are social and cultural approaches to promote an enabling environment to encourage health seeking behavior, safe behavior, and providing peer education programs and social marketing to promote condoms. Biomedical approaches consisted of expanding targeted HIV testing, HIV self-testing, and integrating HIV services with other health services	Countries should develop strategies to address these barriers, guide national Test and Treat campaign focusing on increasing HTS uptake in men	[49]
07	Factors contributing to men's reluctance to seek HIV counselling and testing at Primary Health Care facilities in Vhembe District of South Africa	Mambanga et al (2016) Vhembe District South Africa	The response rate per question was 100% with all 15 participants willing to answer all the raised questions, though with different views and opinions. The majority of the interviewees indicated that they were aware of HCT services. Stigma as a societal reaction to disease, governmental policies, and attitudinal factors made men refrain from seeking counselling and testing from public health facilities political barriers, stigma, and cultural practices such as circumcision were cited as the reasons for the low level utilization of HCT services		[41]
08	Factors Associated With HIV Testing Among Men in Haiti: Results From the 2012 Demographic and Health Survey	Conserve et al (2017) Haïti	Few men (35%) reported having ever been tested for HIV. Logistic regression analyses revealed that HIV testing increased with education and wealth. Marital status was associated with HIV testing, with married men more likely to have been tested (adjusted odds ratio: 2.57, 95% CI [2.07, 3.19]) than unmarried men. Positive attitudes toward people living with HIV, indicated by willing to care for a relative who has HIV/AIDS, was also correlated with higher odds of having been tested (adjusted odds ratio: 1.28, 95% CI [1.08, 1.51]). Men who reported condom use during last sex were more likely to have been tested (odds ratio: 1.58, 95% CI [1.33, 1.88). The findings indicate that HIV testing rates remain low among men in Haiti	More efforts are needed to increase HIV testing among men who are not married, have low level of education, and engage in unprotected sex.	[32]

09	Factors Associated with HIV-Testing and Acceptance of an Offer of Home-Based Testing by Men in Rural Zambia	Hensen et al , (2014) In Rural Zambia	After questionnaire completion adults were offered home-based rapid HIV-testing. Of the 2,828 men, 53 % reported ever-testing and 25 % recently-testing. Factors independently associated with ever- and recent-testing included age 20+ years, secondary/higher education, being married or widowed, a history of TB-treatment and higher socioeconomic position. 53 % of never-testers and 57 % of men who did not report a recent-test accepted home-based HIV-testing. Current HIV-testing approaches are inadequate in this high prevalence setting	Alternative strategies, including self-testing, mobile- or workplace-testing, may be required to complement facility-based services.	[20]
10	Factors influencing the uptake of voluntary HIV counseling and testing in rural Ethiopia: a cross sectional study	Teklehaimanot et al (2016) Ethiopia	Overall, men (28 %) were relatively more likely to get tested for HIV than women (23.7 %) through VCT. Rural men and women who were young and better educated, who perceived having small risk of HIV infection, who had comprehensive knowledge, no stigmatization attitude and discussed about HIV/AIDS with their partner, and model-family were more likely to undergone VCT. Regional state was also strongly associated with VCT utilization in both men and women. Rural women who belonged to households with higher socio-economic status, non-farming occupation, female-headed household and located near health facility, and who visited health extension workers and participated in community conversation were more likely to use VCT. Among men, agrarian lifestyle was associated with VCT use. Utilization of VCT in the rural communities is low, and socio-economic, behavioral and health service factors influence its utilization.	Need to target the less educated, poor and farming families to improve knowledge and reduce HIV and AIDS related stigma. Promote partner and community conversations training, and use of alternative modes of testing.	[30]
11	HIV Testing and Health Care Utilization Behaviors Among Men in the United States: A Latent Class Analysis	Dangerfield et al 2017 USA	Most men were in the No HIV Testing/Some Health Care Utilization class (46%), with a 0% chance of ever having had an HIV test but an 89% chance of seeing a general practitioner in the previous year. Research should include qualitative measures to capture information on facilitators and barriers to HIV testing for men who see general practitioners.		[42]
12	HIV testing is associated with increased knowledge and reductions in sexual risk behaviours among men in Cape Town, South Africa	Scott-Sheldon et al (2015) Cape Town South Africa	Among the 820 participants, 516 (63%) reported being tested (82% tested negative, 6% tested positive, and 12% unknown). Compared to those who had never been tested for HIV, men who tested for HIV were more knowledgeable about HIV transmission but did not differ on sexual risk behavior. Knowledge moderated the effect of testing on sexual risk such that men reported fewer sexual partners (IRR = 0.91, 95% CI = 0.84, 0.98) and fewer unprotected anal sex events (IRR = 0.81, 95% CI = 0.66, 1.00) if they had been tested for HIV and were knowledgeable about HIV transmission. For men testing HIV-negative, knowledge predicted fewer sexual risk behaviors. Having been tested for HIV is associated with enhanced knowledge, which moderates sexual risk behavior among South African men living in Cape Town		[48]
13	Men “missing” from population-based HIV testing: insights from qualitative research	Camlin et al 2016 SSA	Structural and cultural barriers, including men’s mobility and gender norms valorizing risk-taking and discouraging health-seeking behavior, were observed, and contributed to men’s lower participation in HIV testing relative to women. Men’s labor opportunities often require extended absences from households: during planting season, men guarded fields from monkeys from dawn until nightfall; lake fishermen traveled long distances and circulated between beaches. Men often tested “by proxy”, believing their wives’ HIV test results to be their status. Debates about HIV risks were vigorous, with many men questioning “traditional” masculine gender norms that enhanced risks. The promise of antiretroviral therapy (ART) to prolong health was a motivating factor for many men to participate in testing	multiple convenient locations can be facilitating factors enhancing male participating in HIV testing. transformations in gender norms related to HIV testing and care-seeking should be supported	[1]

3.2. HIV in Adult Men

Epidemiological data of HIV in adult men reveals that HIV was first discovered in the 1980s among a group of gay men in USA and later in 1983, it was discovered the diseases could spread to men in heterosexual relationships which now accounts for 85% of all HIV-1 infections [21]. Looking at how the diseases trend has been in adult men, in 2017, out of the estimated 35.1 million adults aged 15 and above who were living with HIV globally, 16. 8 million occurred in men and 850 000 were new infection from a total of 1 600 000 new infections in adult [22]. HIV prevalence in adult men 15 to 49 years was 0.7% [22] and mortality figures shows that of the 830, 000 deaths due to AIDS among adults aged 15 and above in that year, 480, 000 occurred in men alone [22]. Mortality figure among men due to HIV in Cameroon in 2017 stood at 9000 of all total mortality of 21000 in adult 15 years and above [23]. Men aged 15 to 49 HIV prevalence rate 2.5 [23], revealing an urgent need to address men’s health,

especially as it relates to the spread of HIV among men and their lag of engagement in HIV services [24]. The fast track aim to reduce new HIV infections to fewer than 500 000; reduce AIDS-related deaths to fewer than 500,000 and eliminate HIV-related stigma and discrimination globally [25], seems unrealistic as data reveals that from 2010, the annual number of new infections in adults age 15+ has remained almost static [26] and this will be worse if men continue to lag behind.

3.3. Sex Disaggregate Data of HIV Services Uptake

It has been sown that men are less likely than women to engage in HIV services across the care cascade, especially HIV testing and therefore resulting in poorer clinical outcomes as revealed by studies done in Ivory Coast and South Africa. In Ivory Coast, recent HIV testing was reported by 6.1% of men and 9.5% of women [27], while the study in South Africa to understand population-level gaps in HIV identification, linkage, retention in care, and viral suppression, reported that among those HIV positive, 48.4% of men and 75.7% of women were aware of their serostatus; 44.0% of men and 74.8% of women reported ever linking to HIV care; 33.1% of men and 58.4% of women were retained in care; and 21.6% of men and 50.0% of women had dried blood spots viral loads less than 5000 copies per milliliter [28]. The proportion of women that test for HIV compared to men is always higher, which in turn also reflects in treatment retention and adherence when compared by gender and this also tally with a study carried in Ghana to describe sex differences in the utilization of HIV services [29], but only a study in Ethopia found men (28 %) were relatively more likely to get tested for HIV than women (23.7 %) through VCT [30].

3.4. HIV Situation in Cameroon

Although progressive improvements have been made in the coverage and quality of prevention of HIV/AIDS in Cameroon, the national coverage remained persistently low in men [23]. For men in Cameroon, HIV prevalence is highest in the 45-49 age range (6.3%), and is more prevalent in urban areas, which are home to slightly more than 50% of the population [31]. In a study carried out in Haiti, few men (35%) reported having ever been tested for HIV [32]. This implies the men are not supposed to be left out but need to be given attention and encouraged to participate more in HIV services. Also, the 2017 global AIDS monitoring report affirms the importance of countries obtaining disaggregated data, breaking it down by sex and age and not in summary so as to make monitoring the breadth and depth of the response to the epidemic [33]. There is need for the provision of HIV services that will enable an equal commitment from men, women and children so as to reduce HIV global morbidity and mortality. As revealed by the Cameroon UNAIDS 2017 Country profile estimate [23], looking at how HIV is distribution by main segregate groups in Cameroon, it is realize that HIV has indiscriminately affected men, women and children. HIV among men in Cameroon is a big concern just as in other parts of Africa. According to UNAIDS 2017 country profile reports, the trend from 1990 to 2017 of people living with HIV age 15+ by sex in Cameroon is not different from the trend in people Age 50+ living with the virus.

3.5. HIV Services Delivery in Cameroon

HIV testing in Cameroon is provided by the government, private sector and other organizations through health facilities, stand-alone facilities as well as outreach services. Under the leadership of the Ministry of Public Health, there are key organizations both national and international offering HIV Services, especially HIV testing, in Cameroon. The National AIDS Control Committee (NACC) which is the Department in the Cameroon Ministry of Public Health is committed to fight HIV and works in collaboration with partner organizations in the fight and final eradication of HIV. NNACC has as partners and most of these organizations have branches all over the national territory. In addition, all of the 10 regions of Cameroon have NACC branches offices called the Regional Technical Group for HIV (RTG) which carries and coordinates HIV and AIDS activities at the regional level and reports to the National AIDS Control Committee. HIV service delivery in Cameroon ranges from HIV Prevention services; facility-based HIV testing services; community-based HIV testing services; linkage to treatment services and finally programs to ensure adherence to treatment. Apart from facility based testing which has suffered setback with regards to testing coverage like in most countries, Cameroon has also implement the World Health Organization community based approaches to reach the unreached with HIV testing services. These services ranges from Stand-alone voluntary testing and counselling; Mobile counselling and Testing; Outreach testing in the community; Moonlight testing and Test for triage. Cameroon moved from an estimated population of 17.1 million in 2005 with 8.5 million men to 20.0 million in 2010 with 9.9 million men and is now estimated to be above 24,360,803 million. The low life expectancy in which only approximately 4% of the population are 55 years and above is directly linked to high morbidity and mortality with HIV and AIDS being one of the major cause. Cameroon has therefore recognizes that additional targeted efforts is needed to ensure 80% coverage of all sex and age disaggregation to achieve epidemic control.

3.6. Uptake of HIV Services by Men

HIV testing services are an essential component of HIV/AIDS control programs globally and an entry point of the HIV care and treatment cascade because it helps in early detection and initiation of those positive in HIV care and treatment. Reports reveal that around 21% of people with HIV are unaware of their infection and so the only way to determine a person's HIV status is for them to have an HIV test [34]. A study done in South Africa revealed 11% of men who participated in the study were testing for HIV for the for the time [35] and in Lusaka Zambia 53% of never testers were reported [20]. There is the presence of a range of HIV testing and counseling services which are voluntary counseling and testing (VCT), couples voluntary counseling and testing (CVCT),

mobile voluntary counseling and testing (MVCT), community testing, outreach , home based counselling and testing (HBCT), HIV self-testing (HST) and more recently, provider initiated testing. All HIV testing services are expected to be provided in line with the World Health Organizations essential 5Cs which are Consent, Confidentiality, Counselling, Correct test results, and Connection/linkage to prevention, care and treatment. Several studies on HIV Prevention have not only documented poor uptake of HIV testing services by adult men but it was further revealed that this low uptake in some countries affect the engagement of women, adolescent girls and children because these men are social leaders. Looking at treatment figures, of the 253 961 adults receiving ART in 2017, only 69809 were men [23] and this lead to more men developing AIDS and dying. Also of the 73996 adult that were initiated on ART that year, only 23715 constituted men 15 years and above [23].

3.7. Predictors of HIV Services Uptake by Men

The literature revealed that HIV services utilization by men is poor and some studies have revealed a number of contributing factors, some of which are lack of correct information on HIV; Service related, Cultural, Socioeconomic; Environmental and Political Factors. Various regions are exposed to a particular factor different from others and therefore prevalent context specific factors that hinder men from seeking HIV services in a particular setting must be identified so as to know the intervention to use in ensuring a scale up in uptake. Some studies have made use of focus group discussions and interviews to identify these factors [36].

3.7.1. Demographic

Socio-demographic factors like age, education, occupation, religion, marital status greatly influences health seeking and HIV testing. A study done in South Arica reveal that the number of older adults who are HIV-infected or at risk of becoming infected is clearly increasing, but older adults remain less likely to test for HIV than younger adults and it was reported that 54% of person 50+ and 78% of those aged 25 to 49 of reported having ever tested for HIV. When older persons do test, it is often initiated by the provider because the patient is symptomatic and most of this occurs at a late stage of HIV infection [37], and also married men were more likely to have tested for HIV than non-married men.

3.7.2. Information on HIV

Access to accurate Health Information on HIV is important to help people take the right decision regarding their health if they have good source of information about HIV, good knowledge on importance of testing, risk perception and the importance of VCT according to the Health Belief Model. Education is key to changing men's perspectives and improving HIV knowledge. Health services utilization by men is poor and some studies have revealed a number of contributing factors to the current HIV situation in men and lack of the right information is reported to be among the leading causes of low voluntary counselling and testing especially among men [38]. In a study to assess male spousal engagement with prevention of mother-to-child transmission (PMTCT) programs in western Kenya, community health education regarding HIV-related services offered at the health facilities were recommended as one of the ways to get men more involved in HIV services [39]. But since very few men come to the health facilities, community health education targeting men can be an important tool to reach men and make them engage. Access to information is reported to be higher rate among urban than rural men but this is linked to the availability of social amenities that determinate information in urban areas than in rural. There are limited studies on the impact of giving men information about HIV using a face to face health education approach in the comfort zones of men, like their community groups.

3.7.3. Health Service Related

Some studies have documented Health care provider influence on HIV service uptake in men and literature reported that Health Care facilities have achieved limited HIV testing and treatment coverage in men, with barriers including social norm of male masculinity, poor behaviour of health workers, stigmatization by health care providers, confidentiality concerns, distance to the facility, inconvenient hours, and perceptions that facilities provide women-centered services [40,41]. While the health facility has been found to play an important role in diagnosis and treatment of diseases, these barriers have contributed to low male engagement [40,42].

3.7.4. Environmental

These involve access to health care services by men. Some reports stated that some men could not find time to visit health care centers as they struggle during the day to make income for the family. Also, the physical environment have been reported to have a strong influence on men's decision to do an HIV test. Some studies have document HIV uptake by men at the community level to be more than that observed at the health facility level in Africa [12,40]. It is therefore realized that men feel more comfortable testing at the community than facility level. If all other factors like distance to the health facility, waiting time and financial aspect, which are found to be some determining factors to male uptake of HIV services are adjusted for at both facility and community level, it is realized that men value confidentiality and will not want anything that will tarnish their male ego. At the community level, a door to door testing has reported more uptake than testing at mobile units where the community members gather in groups.

3.7.5. Socioeconomic

Testing has been found to be influenced by socioeconomic position of men. This has been evident at health facilities in situations where money had to be used to access services. It has therefore been revealed that though testing is generally low in men, it has been found to even be lower in men of low socio-economic status [19,43]. To destroy this barrier, many interventions have been implemented in which HIV testing is done for free so as to increase uptake by men of lower socioeconomic status.

2.7.6. Cultural

Studies have reported masculine norms influence men's HIV care engagement in sub-Saharan Africa [44]. Decision making, income, fears, stigma, social beliefs, sexual behaviour, gender differentiation relating to masculinity are rooted in culture. These factors vary from region to region across the globe. Some factors are more prominent in some regions than others and can positively or negatively impact men's health seeking behaviour. Theories relating to masculinity can enable the public health expert to understand masculinity and health seeking in men. Approaches to create a more responsive health services have been employed, however, a focus on developing theory-informed interventions and evaluations on improving the understanding of specific populations of men is necessary. Social theories relating to masculinity helps in the clear understanding and interpretation of certain behaviour in men. It can explain the way men seek health and clues to improve their involvement in HIV services especially testing.

i) Conflict Theory: According to conflict theory, society is a struggle for dominance among social groups like women versus men. When sociologists examine gender from this perspective, we can view men as the dominant group and women as the subordinate group. Social problems are usually created when dominant groups decides to exploit or oppress subordinate groups. In the area relating to the provision of health services, women and children dominate the health care system and men take the position of the subordinate group.

ii) Labeling theory: This theory, focus on the reactions of members in society towards certain people or group by giving them labels. This notion of social reaction or response by others to individual or group of persons is central to labeling in HIV and stigmatization that follows. Also this is central in the way men are looked at when it comes to HIV response. In most cases they have been made to look like perpetuators. So as members in society begin to treat these individuals on the basis of their labels, the individual begins to accept this label and this causes the individual to engage in behavior deemed by others as inappropriate and eventually the individual internalizes and accepts this label.

3.7.7. Socio-Political

The socio-political context in which men are found will determine their ability to seek health care. A society with social unrest prevents the frequency of community outreach and therefore reduces the chances of testing men who do not yet know their HIV status. This has been the situation in the Buea Health District where social unrest has prevented most HIV community-based testing. Also majority of men fled to the bushes and even those on ARVs.

3.8. Public Health Control and Management of HIV in Men

There is progress in implementing programmes to treat and prevent HIV infection. To guide prioritization of efforts, the metric by which a country can declare its HIV epidemic as controlled has become increasingly relevant. Intervention for HIV is carried at the various levels following the public health approach to diseases prevention. In primordial prevention, public health experts focus on preventing HIV from occurring at all. In any case, if the diseases have already occurred, they fight to see to it that it is identified as early as possible so as to prevent it from getting worse. If residual effects of the diseases remain, special interventions are implemented to minimize the effect of the disease and prevent disability. This public health approach is applied in prevention and control of HIV in men and each level of action represent a level of intervention (Figure 2).

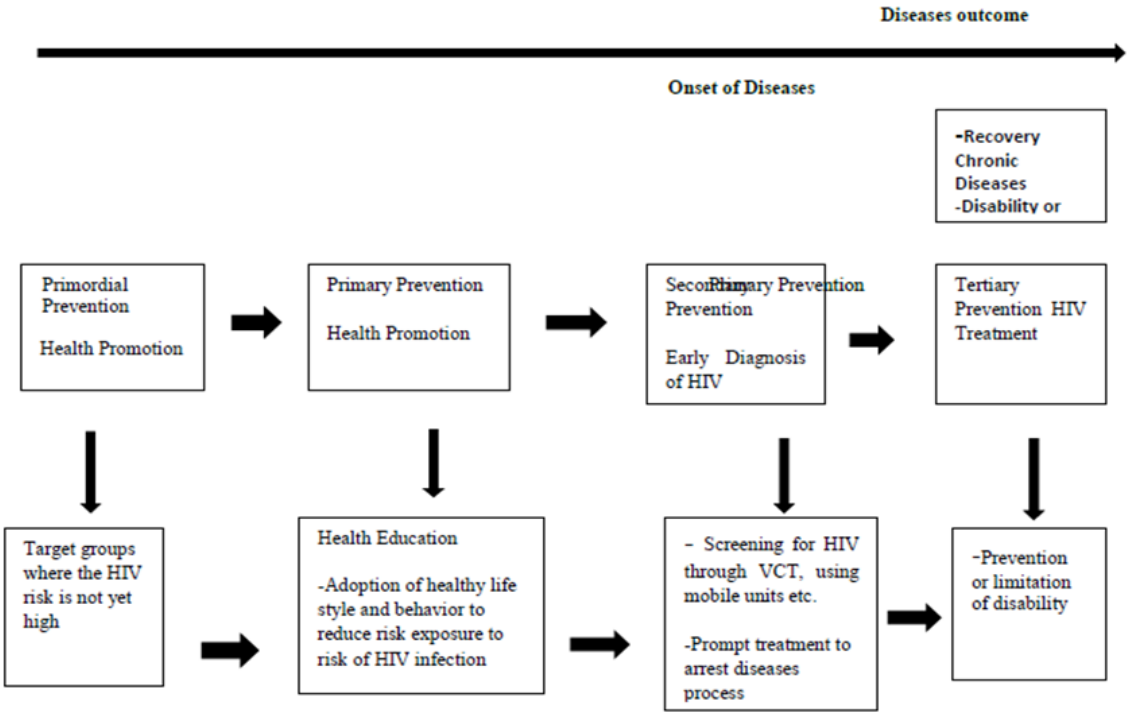

Figure 2. A Framework for Levels of Prevention in HIV (Source [Design by PI])

3.9. Strategies to Improve Uptake of HIV Services by Men

Community based HIV testing was implemented in an effort to meet the needs of people who could not come to the health facility for an HIV test. Compared with health facility-based HIV counseling and testing (HFHCT), community-based HIV counseling and testing (CBHCT) increases early diagnosis, may reach populations that rarely use health services, and is effective in linking HIV-infected people to clinical care in sub-Saharan Africa [45]. There has been continuous innovation as far as community based HIV testing is concern. Many approaches have been employed to ensure all the constituents parts of the community are captured and tested for HIV. It improves the proportion of people testing for HIV because while some studies reported issues with confidentiality at the health facility, the problem of access has also been mentioned, but many perceived this approach to HIV testing as beneficial because it reduce most of the current perceived and experienced barriers that affects access and acceptance of HIV testing such as distance to HIV testing facilities, long waiting times at facilities, stigma and discrimination. Community based testing was found to capture men that could not come to the health facility for an HIV test. These services range from provider-Initiated testing and counselling. The Home-Based Counselling and Testing (HBCT), a type of a community based testing enable people to be tested within the confinement of their homes by a service provider. This approach helped to capture those who could not come to health facility or the location where group testing was done at the community level. Many have appreciated this approach to HIV testing and counselling as it gives confidentiality [46]. Strategies to improve uptake of HIV Services in men reveal mounting evidence that mobile testing which involves the provision of counselling and testing services through tents or caravans or other temporary accommodation at convenient locations in the community, and home-based counselling and testing have reached a wider range of target groups than facility based testing. In an analysis of HIV testing uptake through different VCT strategies in Uganda, Grabbe et al found that Mobile Voluntary Counseling and Testing (MVCT) attracted a significant proportion of new testers and young people [14]. Similarly, in South Africa, mobile HIV testing attracted a significantly higher proportion of men compared with facility based services, and identified clients at a much lower CD count than facility based VCT [13]. This captures people passing by and others who for the nature of their activities could not visit the health facilities, A study in South Africa showed that providing mobile high quality and easy to access HIV testing services contributes to improving HIV testing uptake by men [47]. In addition, Outreach HIV Counselling and Testing (OHCT) in the community which involves a team of health workers who move into a community just to do voluntary counselling and testing for HIV; Moonlight testing done during evening hours in high-risk settings to capture groups like commercial sex workers and hard to reach groups and Test for Triage which is used a trained lay provider to carry rapid diagnostic test, then refers and links all people with a reactive test result to HIV prevention, care and treatment services in a timely manner have all contributed greatly to capture men to test for HIV.

4. Discussion

This review aimed at assessing the strategies and interventions to improving men's HIV uptake in the Buea Health District in Cameroon. The literature highlights the current HIV situation in men, contributing factors to poor health services utilization by men, predictors of HIV services uptake by men and the strategies being implemented to improve participation of adult men in HIV services. It is evident that general knowledge of HIV, HIV prevention, and the benefits of HIV testing and counseling have been associated with uptake of testing and correct information or knowledge has been seen as one majour determinants of HIV testing as it influences individual perception of risk for HIV infection and therefore a significant factor influencing uptake of HIV testing [12,48]. This tally with studies carried out in Cote Devoir [27] but this was contradicted by a study in South Africa which revealed that despite high levels of knowledge of where to obtain an HIV test, low testing rates suggest the need to identify barriers to HIV testing and strategies for increasing testing rates, but there is need to not only make men aware of where to get tested, but to give them a comprehensive health education on HIV before asking them to test. Inadequate levels of HIV testing and personal knowledge of HIV status have been recognized as primary behavioral drivers in the spread of HIV in Lesotho [46].

The Literature found that strategies or interventions to improve HIV uptake by men involve education about HIV; HIV self-testing, testing using an index case; partner testing at antenatal; community-based HIV testing which can be in form of home-based HIV testing, mobile testing, outreach testing in the community or using test for triage. It is evident that participation by adult men in HIV services is poor as revealed by the literature and there is a gap as far as studies that focused on HIV in men are concerned. A survey in Tanzania from 2016-2017 revealed that 55% of men diagnosed with HIV during the survey self-reported that they were unaware of their HIV status [49]. This low uptake also tally with the studies done in South Africa and Cote Devoir [27,37]. In South Africa only 26.9% of men had ever sought HIV testing. Most contributing factors to poor health services utilization by men are context specific ranging from information on HI to health service related [42]. There has also been strong evidence on the effect of cultural, socioeconomic; environmental and political factors influencing testing. Studies have been carried out by making use of focus group discussions and interviews to identify context specific factors that are responsible for the poor HIV testing uptake men [36]. Reports on services related factors such as staff behaviour and long turnaround time which has negatively influence the uptake of HIV services by men resulted in the implementation of innovative strategies to expand HIV testing beyond health facilities. In 2012, WHO recommended that, in order to reach universal access, rapid testing should be available through a wide range of service-delivery models and approaches, including offering testing in non-medical settings by

non-medical personnel, community outreach, door-to-door home-based testing, index patient testing, self-testing and that each country should select the combination of services best adapted to its population. Community HIV testing, as well as, HIV self-testing strategies has been found to improve participation by men in HIV services according to studies done across Africa [40,50]. Community based HIV testing was implemented in an effort to meet the needs of people who could not come to the health facility for an HIV test. Compared with health facility-based HIV testing and counseling, community-based HIV testing and counseling increases early diagnosis, may reach populations that rarely use health services, and is effective in linking HIV-infected people to clinical care in sub-Saharan Africa [45]. There has been continuous innovation as far as community based HIV testing is concern. Many approaches have been employed to ensure all the constituents parts of the community are captured and tested for HIV. It improves the proportion of people testing for HIV because while some studies reported issues with confidentiality at the health facility, there are also issues relating to access in some instances and studies have shown that the community based HIV testing strategy is critical to addressing issues of confidentiality and convenience. Community based testing was found to capture men that could not come to the health facility for an HIV test. Mobile counselling and testing have also been found to increase participation in men more than it is observed at health facilities according to research done in South Africa [37,46,47]. This is because in home counselling and testing, people are tested within the confinement of their homes by a service provider. This approach helped to capture those who could not come to health facility or the location where group testing was done at the community level. Many perceived this approach to HIV testing as beneficial because it reduce most of the current perceived and experienced barriers to HIV testing such as distance to HIV testing facilities, long waiting times at facilities, stigma and discrimination that affects access and acceptance of HIV testing.

Mobile counselling and testing involves have been reported to captures people passing by and others who for the nature of their activities could not visit the health facilities to carry an HIV test. Also, a study in South Africa showed that providing mobile high quality and easy to access HIV testing services contributes to improving HIV testing uptake by men [47]. Camlin et al in their study reports that mobile testing reduced but did not eliminate barriers to men's participation in a large-scale "test & treat" effort [1]. Outreach testing in the community has been reported to contribute to HIV testing uptake because it makes use of community mobilization. In some communities, test for triage is used in community-based settings to further scale up access to HIV testing whereby trained lay provider uses a single rapid diagnostic test, then refers and links all people with a reactive test result to HIV prevention, care and treatment services in a timely manner. Literature reveals that countries are implementing these strategies and most men who had not been tested are now being tested though some still mentioned fear of testing positive. But the low perceived HIV risk, lack of symptoms, issues with confidentiality at health facilities which were reported to prevent men from testing earlier according to results from some studies [20,27] are gradually reducing through the use of community testing.

5. Conclusion

The findings of the study indicate that Community-Based HIV testing; Home-Based HIV testing; HIV self-test and partner HIV testing are intervention and strategies used to improving men's HIV uptake. To achieve the 2030 target, there is need for the provision of HIV services that will enable an equal commitment from men, women and children so as to reduce HIV global morbidity and mortality Also the HIV universal test-and-treat (UTT) strategies seems to hold great potential for reducing HIV transmission and reducing morbidity and mortality in the context of a generalized epidemic as is observed in most African Countries including the Buea Health District. Therefore primary prevention remains an essential component of the response and it is important that HIV testing which is entry point in the HIV/AIDS care cascade tackle in men because we cannot talk of treatment, retention and viral load suppression without testing first. This information so health organizations, public health experts and states can strategically target their resources to interventions that respond to the specific situation. Without this information, the scale of the response required in specific areas remains a problem. Improvement of strategies to reach men must always incorporate health education campaigns to change beliefs and attitudes. Finally, these interventions and strategies should be expanded and strengthened to ensure more men are diagnosed for HIV and initiated on ART services without delays.

6. Recommendations

From this review there is no doubt that even the men in Cameroon engage poorly in HIV services. There should be evaluation of policies involving us going beyond seeing men as simply "facilitating factors", to enable women to access health-care services, but view them as 'constituent parts' of reproductive health policy and practice if we want to also maximize the health outcomes for children and women. The "perpetuator-victim concept" in which men have been viewed as 'perpetuators' and women and children 'victims', should be replaced with a comprehensive system of prevention in which the health of men is also put on the same platform as that of the women and children.

Also, few interventions have evaluated the ultimate outcome of face to face health education on services uptake in men. However, if the intention of interventions is to improve uptake of HIV services by men, then more efforts must be directed toward this goal by policy makers and health experts.

7. Perspective for Further Studies

Most previous studies highlight barriers to testing uptake in men; there has been little investigation into

potential motivating factors that can help increase HIV services uptake in men who are outside key populations and a clear understanding of what information, discussion style, or environment may motivate or encourage testing uptake in these men need to be explored further.

The decision-making process for men to engage in HIV Services especially testing is likely very complex and influenced by factors which are difficult to measure quantitatively, such as cultural and social influences. Therefore it is important for triangulation which can involve face to face health education interventions using application of cultural tailoring message in conjunction with educational material and also the use of focus groups discussions and interviews can help to address this complexity and contributes to provide evidence for effective intervention. Also approaches like community-based outreach programmes and approaches to develop more responsive friendly health services for men is being employed but further research is still needed in this area.

Theories relating to masculinity can enable the public health expert to understand masculinity and health seeking in men, therefore in addition to creating a more responsive health services, a focus on developing theory-informed interventions on improving the understanding of men is also very necessary.

Although the reasons why men are choosing to delay HIV testing have been examined, data has demonstrated that testing in men may change over time thus it is important to continue to assess the context specific reasons why men are not testing in order to provide appropriate education to address these the gaps problem.

Ethics Approval and Consent to Participate

This study has been approved by the University of Buea Faculty of Health Sciences Institutional Review Board (FHSIRB No 1016-08, 2019).

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Competing Interests

This work has no conflict of interest to declare

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Abbreviations Used in the Study

AIDS	Acquired Immune Deficiency Syndrome
BHD	Buea Health District
CBHCT	community-based HIV counseling and testing
CVTC	couples voluntary counseling and testing
HBCT	home based testing
HFHCT	health facility-based HIV counseling and testing
HIV	Human Immunodeficiency Virus
HST	HIV self-testing
IDU	intravenous drug users
MSM	men who have sex with men
MVCT	mobile voluntary counseling and testing
NACC	The National AIDS Control Committee
OHCT	Outreach HIV Counselling and Testing
PMTCT	Prevention from mother-to-child transmission
RTG	Regional Technical Group for HIV
SSA	Sub Saharan Africa
UNAIDS	United Nations' Programme on HIV and AIDS
VTC	voluntary counseling and testing
WHO	World Health Organization

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