We are IntechOpen, the world's leading publisher of Open Access books
Built by scientists, for scientists

5,500
Open access books available

136,000
International authors and editors

170M
Downloads

154
Countries delivered to

Our authors are among the
TOP 1%
most cited scientists

12.2%
Contributors from top 500 universities

WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com

Chapter

Prevention of HIV Perinatal Transmission: The Role of Sexual and Reproductive Health Services for Women Living with HIV

Marcela Gómez-Suárez

Abstract

With the evolution in prevention, diagnosis, and treatment of HIV/AIDS, ending the infection as a public health threat worldwide has become a real possibility included within the United Nations Sustainable Development Goal Project 2030. However, some countries and even entire regions are not on track to reach this target due to increased new infections in young populations. Young women (15–24 years) represent 48% of the new HIV cases globally. Research shows these women have significant unmet sexual and reproductive health (SRH) needs, with high rates of unplanned pregnancies, increased HIV perinatal transmission (HIV-PT) risk, and higher maternal morbidity and mortality. Granting access to SRH services based on rights for women living with HIV is a cost-effective alternative to reducing new infections in children by promoting respect for women's reproductive options. This chapter addresses the role of SRH services based on rights for women living with HIV within HIV-PT. It also summarizes the new "Consolidated Guideline on Sexual and Reproductive Health and Rights of Women Living with HIV"; designed by the World Health Organization as a global recommendation for SRH programs and services that promote gender equality and human rights for women living with HIV.

Keywords: HIV, AIDS, perinatal HIV transmission, vertical HIV transmission, unplanned pregnancies, sexual and reproductive health, access to health services, women's health, women's rights

1. Introduction

In the last decades, the HIV/AIDS picture has changed notably with global health policy accomplishments for prevention, diagnosis, treatment, and follow-up, improving people's quality of life and turning the overwhelming prognosis of a fatal disease into a chronic, treatable condition. The progress in the control of HIV/AIDS has stimulated a debate on the possibility of ending it as a public health threat by 2030, and it has become a substantial element of the United Nations third Sustainable Development Goal Project 2030 (SDG-3.3). The goal is to decline new HIV infections and AIDS-related deaths by 90% between 2010 and 2030 [1].

IntechOpen

Despite all the public health advances related to HIV, there are countries and even entire regions that are not on track to reach the global target due to new infections. In 2019 the Joint United Nations Program on HIV/AIDS (UNAIDS) reported 1.7 million people with newly acquired HIV infections. Eastern Europe and Central Asia registered a 72% rise in new HIV infections since 2010. New HIV infections have also risen in the Middle East and North Africa by 22% and 21% in Latin America. Certain regions like Eastern and Southern Africa are exceptions to these rates, with a sustained 38% reduction in new infections since 2010 [2].

A third of new HIV infections affect young populations. With the change in transmission trends during the past two decades, more women have become infected by sexual transmission within high-risk partners. They currently represent more than half of the people living with HIV worldwide and 48% of the new cases reported each year. Health risks for acquiring HIV infection are especially acute for adolescent girls and young women aged 15–24 years, and AIDS persists as the fourth leading cause of death in middle and low-income countries [3]. The risk for acquiring HIV, especially in young women and adolescent girls, arises from multiple reasons, including unfavorable health social determinants such as economic dependence; poverty; lack of education and formal work opportunities; adolescent marriage; intrafamily and institutional violence, and limited access to Sexual and Reproductive Health Services based on Rights (SRHSR) like family planning and adolescent-friendly health services among others [4].

Women living with HIV (WLHIV) have significant unmet sexual, and reproductive health (SRH) needs leading to high rates of unplanned pregnancies. Research shows that these necessities are even three times higher than women without HIV and increase the number of new HIV infections in their children due to HIV perinatal transmission (HIV-PT); and higher maternal morbidity and mortality. Studies also show that these unmet needs increase the number of unsafe abortions and unwanted sterilizations, due to health providers and patient's misinformation about HIV and pregnancy [5, 6].

To accomplish the SDG-3, the elimination of HIV-PT is a must. Globally, in 2019, 1.8 million children were living with HIV, with 95,000 AIDS-related deaths and 150,000 new infections. Even though new HIV infections among children have declined by 52% since 2010, some countries, especially in concentrated epidemic settings, have maintained stationary HIV-PT rates for the past ten years, far away from the elimination goals. HIV-PT is still considered a public health problem representing the impossibility of health systems to end a preventable disease with immense repercussions for children's lives, families, and the community [7]. In HIV-positive populations, studies have shown a close relationship between women's SRH and HIV-PT prevention. Granting access to SRHSR for WLHIV is a cost-effective alternative to reducing new infections in children by promoting planned and desired pregnancies and promoting respect for WLHIV's reproductive options as part of the United Nations International covenant on rights [8].

The present chapter addresses the relevance of SRHSR for WLHIV within HIV-PT reduction. The first part explores aspects of women's vulnerability to acquire and live with HIV and the relationship of these determinants with SRH. The final part summarizes the 2017 World Health Organization's (WHO) "Consolidated Guideline on Sexual and Reproductive Health and Rights of Women Living with HIV," related to the HIV-PT prevention recommendations based on rights [9].

DOI: http://dx.doi.org/10.5772/intechopen.98306

2. Women and HIV

An estimated 20.1 million women were living with HIV worldwide at the end of 2020, representing approximately 55% of all HIV infections [10, 11]. Also, almost half of the estimated 1.7 million new HIV infections in adults for the same year globally were among women. HIV infection remains the leading cause of death among women of reproductive age [12]. Most women acquire HIV through heterosexual relations with high-risk partners. In sub-Saharan Africa, 59% of people with HIV are those, and those aged 15 to 24 years are eight times more likely than their male peers to be infected [13]. In the Caribbean, young women are twice as likely to be infected as men. In Eastern Europe and Central Asia, injecting drug use (IDU) and sex work are the primary drivers of the epidemic. One-third of women acquired HIV infection by injecting drugs, and 50% from partners who inject drugs. Latin America's epidemic concentrates among men who have sex with men (MSM), but more than 20% of the region's MSM also report having sex with women [14, 15].

2.1 Risk factors for HIV acquisition in women

Women have differential vulnerabilities to HIV acquisition studied in different contexts. Below are some of the core biological, behavioral, and social determinants risk factors related to the heterosexual transmission that individually and synergistically contribute to these HIV infection rates among women globally.

2.1.1 Biological risk factors

Research has presented evidence about the relationship between the female reproductive tract, the immune system inflammatory response, and the vaginal microbiome, decreasing or increasing women's vulnerability to HIV infection. Interestingly, there is a unique balance between the female mucosal immune system and the hormonal system at the cellular level. This balance intends to protect women from genital infection while permitting an embryo's survival [16–18].

Genital tract inflammation (infection, microscopic abrasions that result from sexual activity, douching, or other causes) also increases women's susceptibility to HIV infection [19]. Different studies demonstrate the importance of the vaginal microbiome in maintaining the acidic environment that protects against HIV and suggests that lower genital tract infections can promote HIV acquisition among women [20, 21].

2.1.2 Behavioral risk factors

The risk of heterosexual acquisition of HIV varies from as low as one per 1000 contacts between uninfected and infected individuals to one transmission per three contacts. Factors including male circumcision status, HIV viral load concentration; sexually transmitted infections; alterations of vaginal flora, and anal intercourse increase women's risk and contribute to the variation in these estimates of transmission. Factors such as hormonal contraception may also affect HIV acquisition risk. Sexual partners' participation in concurrent sexual relationships, especially MSM, and age disparity with intergenerational relationships between young women and older men, increase individual women's risk of acquiring infection and help spread HIV throughout the population [22–25].

Sexual violence represents a significant risk for HIV infection acquisition among women [26, 27]. In HIV prevalent settings, women who experience intimate partner violence are 50% more likely to acquire HIV than women who do not have these experiences. In medium and low-income settings, gender-based violence is common for women and increases their risk for HIV acquisition. This risk is related to genital injury due to forced intercourse with an infected partner, limitations to negotiate safer sexual behaviors, and patterns of sexual risk-taking among women who experienced abuse during childhood or adolescence. War, migration, displacement, and conflict situations also increase women's risk of experiencing sexual violence, including rape and HIV acquisition [28, 29].

2.1.3 Social determinants of health as risk factors

Research shows how women's HIV risk acquisition is consistently associated with disadvantageous economic security, education, and other structural determinants prevalent in medium and low-income settings. A systematic literature review from eighteen countries performed in Latin America showed that most women who became HIV infected were young, less-educated, working in informal jobs, and users of public health services. Besides the structural health determinants related to HIV, these women also faced barriers to accessing contraceptive alternatives and SRHSR imposing a limit to their capacity to make autonomous reproductive decisions [30, 31]. Gender inequality is an essential structural factor underlying usual risk factors associated with HIV acquisition. Women's unequal educational, social, economic, and political status represents an inherent disadvantage; unequal power limits their ability to negotiate at a relationship and family level. Also, there is a high prevalence of violence, and women who experience trauma, abuse, or other forms of sexual violence are at increased risk for HIV acquisition [32].

2.1.4 Differential HIV acquisition risks in young women

The standard definition of young women includes all those falling within the ages of 15–24 years. Between these ages, young women undergo significant transitions in lifestyle, maturity, and legal rights, which place them at different vulnerabilities for HIV acquisition. Young women are more susceptible to HIV infection than older women. Some biological factors may explain this age-variability in vulnerability. For example, the immature cervix has a more significant proportion of genital mucosa exposed to HIV, highly susceptible to infection. They also have relatively high levels of genital inflammation, which have consistently been reported to increase HIV acquisition risk [32, 33].

Vulnerabilities in youth often are incremented by the interaction of the effects of social disparities and sexual behaviors. Choosing a sexual partner, early sexual debut, teen pregnancies; early school dropout; and sexual violence increase adolescent girls and young women's vulnerability to acquiring HIV infection and maintain them in cycles of poverty and dependency. Young women, on average, have their first sexual encounters during their teenage years: in sub-Saharan Africa and Latin America, about 60% of young women are sexually active by the time they reach the age of 18. However, unprotected sex between adolescents can result in pregnancy, HIV transmission is not frequent. In contrast, sex with an older man is more likely to result in HIV acquisition and pregnancy. Data show that women who start their sexual life at a young age have an older first sexual partner and have experienced sexual coercion [33–35].

3. Living with HIV

WLHIV must face complex lives with profound physical and psychological consequences. HIV/AIDS represents a dangerous triangle as these women must meet their condition in different roles, as a patient, as a mother, and as a carer of partners, parents, or orphans with AIDS. In middle and low-income settings, WLHIV also live painful lives of exclusion. They are rejected by their family, friends, and partners. With low access to education and work possibilities, thousands have lost their lives, and many more have been unable to fulfill them [35–37].

Since it was first identified, HIV has been linked with some kind of "sexual misbehavior," contributing to the high level of stigma and discrimination associated with the infection [38]. Women are often more susceptible to the stigma related to HIV and are frequently referred to as "transmitters" [39, 40]. Discrimination discourages them from seeking the vital medical and psychological care they need during the illness. HIV stigma in women is associated with feelings of uncertainty and loss, low self-esteem, fear, anxiety, depression, and even suicidal ideation [41–43].

Different systematic reviews have examined stigma and discrimination in WLHIV, revealing the constant fear related to their medical condition and the painful effects of stigmatization and discrimination, including social rejection, denial, even violence within family and community. The rejection and discrimination extends to institutional violence by health care professionals. These studies also highlight that women face higher levels of discrimination from society just because they are women [43–45].

3.1 Sexual and reproductive health in WLHIV

According to the United Nations Population Fund (UNPFA), SRH implies that people can have a satisfying and safe sex life, the capability to reproduce, and the freedom to decide if, when, and how often to do so. There are essential links between HIV/AIDS and women's SRH. For many, HIV represents the most challenging SRH issue; frequently diagnosed during pregnancy, HIV infection in women arises the necessity to cope with many fears and uncertainties related to SRH like death, guilt, side-effects from treatment, pregnancy, and delivery complications, HIV-PT, childbearing, and breastfeeding [46]. WLHIV have a high risk for unplanned pregnancies, reported as three times higher than in women without HIV. The consequences of unplanned pregnancies can be profound, placing WLHIV at greater risk of death during the pregnancy and postpartum period and leading to lower antiretroviral therapy (ART), adherence and higher attrition rates in prenatal care, and higher risk for HIV-PT [47].

One of the most basic SRH interventions is family planning, an important HIV prevention strategy for women. For WLHIV, contraceptive counseling is recommended by UNAIDS to prevent HIV-PT, advocating for planned and desired pregnancies and avoiding unplanned pregnancies. WLHIV who want and plan their pregnancies have better treatment adherence and lower risk of perinatal transmission and complications [48].

Barriers to access SRH represent a lost opportunity for HIV prevention, follow-up, and counseling. A lack of comprehensive SRHSR means that women cannot take care of their SRH rights and increases the risk of HIV infection or HIV-PT due to unplanned pregnancies. Studies show that barriers to access SRH services take many forms, including denial of access to services, non-integrated services implying different appointments for HIV and SRH, discrimination and institutional violence from service providers, and poor-quality services [49].

Within some settings, procedures related to SRH still are performed without consent, including sterilization and abortion. These interventions also deter women from accessing services and are usually associated with complicated relationships with healthcare providers who do not fully understand childbirth and HIV laws and misinterpret information about HIV-PT preventive measures during pregnancy, delivery, and postpartum [50, 51]. Gender-based violence acts as an important barrier to the uptake of HIV testing and counseling, to the disclosure of HIV-positive status, and antiretroviral treatment (ART) uptake and adherence. Fear and violence lead women to avoid disclosing their HIV status, causing them to miss medical appointments and lose HIV care and follow-up [52, 53].

4. Sexual and Reproductive Health based on Rights (SRHR), a guideline for WLHIV

WLHIV do not have equitable access to quality health services in some settings and face multiple forms of stigma and discrimination. They are disproportionately vulnerable to violence, including violations of their sexual and reproductive rights [6, 7]. In 2017, the WHO, in response to requests from different organizations worldwide, and seeking to bring together new and existing recommendations and good practice statements related to the SRHR of WLHIV into one document, developed the new "Consolidated Guideline on Sexual and Reproductive Health and Rights of Women Living with HIV." This effort was meant to help countries plan, develop and monitor programs and services promoting gender equality and human rights acceptable and appropriate for women living with HIV [9].

The consolidated guideline advocates for a comprehensive, woman-centered approach to SRHR, from women's perspectives, their families, and communities. This approach maintains the guiding principles of gender equality and human rights. The base for developing this WHO guideline was a global survey conducted to assess the SRHR of WLHIV to prioritize their values and preferences. The survey is the largest performed to date and included 945 WLHIV from 94 countries [54]. The starting point of the guide is where a woman knows her HIV diagnosis. From there, it covers critical issues for providing SRHR-related services to support more effective health interventions and better health outcomes.

The guideline addresses new evidence-based good practice statements establishing the close relationship between SRHR and HIV within the framework represented in **Figure 1**. The core is grounded in a woman-centered approach (pink circle), the enabling environment strategies (outer purple circle), and the health interventions needed (central blue segments).

A woman-centered approach to access health services involves considering WLHIV as active participants and beneficiaries of good-quality, efficient, and reliable health systems capable of responding to their needs, rights, and preferences. They are also meant to promote gender equality and women empowerment for decision-making as the core for the achievement of SRHR.

The enabling environment strategies for WLHIV encompass eight activities to assist them in overcoming service uptake barriers, stimulate SRHSR use, and encourage continued engagement: promotion of healthy sexuality across the life course, from adolescence to menopause, with SRHR and HIV programs to meet women's health priorities in all epidemic contexts, including psychosocial support interventions, such as support groups and peer support [55]; facilitation of economic empowerment and resource access to reduce WLHIV inherent vulnerabilities; integration of SRHSR and HIV services to increase access to and improve retention in care and services; protection from intrafamily and institutional

DOI: http://dx.doi.org/10.5772/intechopen.98306

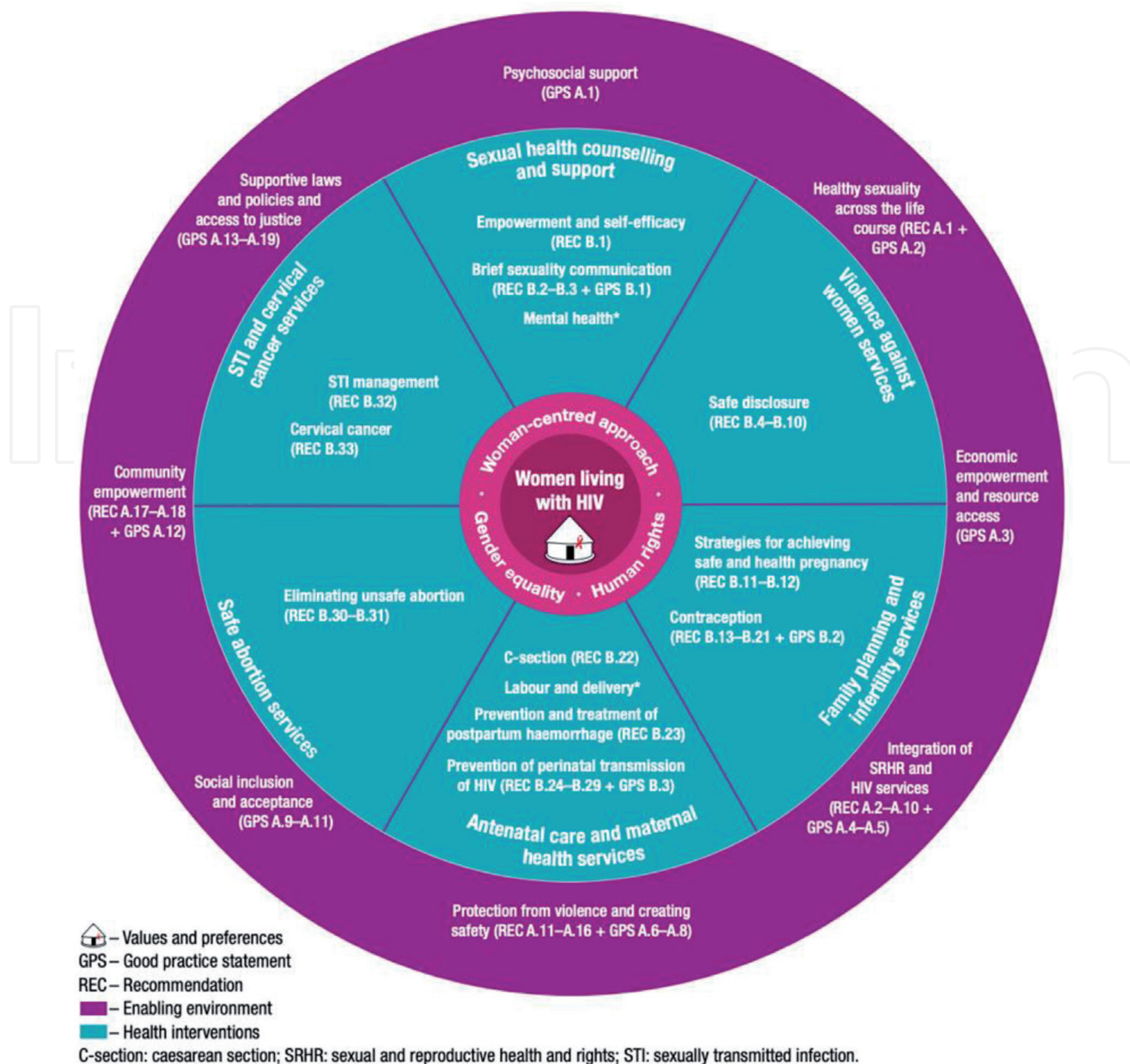

Figure 1.
The framework of WHO recommendations and good practice statements to advance the sexual and reproductive health and rights of women living with HIV. Source: Consolidated guideline on sexual and reproductive health and rights of women living with HIV. World Health Organization; 2017.

violence due to HIV diagnosis disclosure; social inclusion; promotion of community empowerment, and implementation of supportive laws and policies to access justice for violence victims and pregnancy termination decisions [56].

On a second front, for the specific health-related interventions relevant to the SRHR of WLHIV the guideline recommends the creation or improvement of health services (such as sexual health counseling and support for WLHIV), intended to provide self-efficacy and empowerment tools around sexual and reproductive health and rights; the prevention of sexually transmitted infections, and training of healthcare providers in sexual health based on rights knowledge. The guideline also suggests creating preventive services for violence against women supporting safe HIV diagnosis disclosure without stigma and discrimination [57]. Finally, regarding HIV-PT, the guideline recommends implementing friendly family planning services to provide comprehensive reproductive counseling. It advocates for planned and desired pregnancies avoiding unplanned pregnancies, with easy access to modern contraceptive methods based on the respect of sexual and reproductive options and rights of WLHIV, and safe abortion services for women who want a voluntary abortion. Within antenatal care and maternal health services, preventive strategies for HIV-PT, including antiretroviral treatments, delivery, and breastfeeding, are also emphasized [58, 59].

5. Conclusions

Women's differential vulnerabilities to HIV acquisition have been studied in different settings and are associated with disadvantageous economic security, education, and other structural determinants of health. HIV/AIDS affects especially young women who represent almost half of the new cases every year worldwide. Research has shown that WLHIV have significant unmet SRH needs, including differential SRH counseling, psychological support, protection from intrafamily and institutional violence, and family planning. HIV-PT is related to WLHIV's unmet SRH needs and access barriers. Lack of quality family planning counseling and low availability of modern contraceptive methods increase the risk of unplanned pregnancies and HIV-PT due to poor ART adherence and high attrition rates in prenatal care prenatal. WLHIV have better treatment adherence and a lower risk of HIV-PT and complications when pregnancies are planned and desired.

Additionally, SRH unmet needs in WLHIV are related to structural barriers and limitations to access good-quality services, imposing a limit to their capacity to make autonomous SRH decisions based on rights and leading to social exclusion, stigma, and discrimination. To improve the use and access to SRHS among WLHIV, the WHO released in 2017 a new guideline with evidence-based recommendations from a women-centered approach. The objective was to promote an enabling environment for WLHIV, with safe preventive interventions preserving healthy sexuality across the life course. It advocated for support for these women in making informed SRH decisions addressing restrictions and barriers from the inalienable right to women's health and wellbeing and as an essential part of the health strategies aimed for these populations.

Author details

Marcela Gómez-Suárez
Research Division, Research Institute, Fundación Universitaria de Ciencias de la Salud (FUCS), Bogotá, Colombia

*Address all correspondence to: mgomez7@fucsalud.edu.co

© 2021 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

References

[1] Global Acceleration Action for the Health of Adolescents: guidance to support country implementation. Summary report. World Health Organization. 2017 (http://apps.who.int/iris/bitstream/handle/10665/255415/9789241512343-eng.pdf?sequence=1. accessed 4 January 2021).

[2] End inequalities. End AIDS. Global AIDS strategy 2021-2026. UNAIDS (https://www.unaids.org/sites/default/files/media_asset/global-AIDS-strategy-2021-2026_en.pdf accessed 7 March 2021).

[3] Barbosa R, Cabral C, do Lago T, Pinho A. Differences in the access to sterilization between women living and not living with HIV: results from the GENIH study, Brazil. PLoS ONE. 2016;11(11):1-18.

[4] Pinho A, Silva C, Barbosa R. Differences and similarities in women living and not living with HIV: contributions by the GENIH study to sexual and reproductive healthcare. Cad Saude Publica. 2017;33(12): e00057916.

[5] Kikuchi K, Wakasugi N, Poudel KC, Sakisaka K, Jimba M. High rate of unintended pregnancies after knowing HIV infection among HIV positive women antiretroviral treatment in Kigali, Rwanda. Biosci Trends. 2011;5(6):255– 63.

[6] Loutfy M, Raboud J, Wong J, Yudin M, Diong C, Blitz S, et al. High prevalence of unintended pregnancies in HIV-positive women of reproductive age in Ontario, Canada: a retrospective study. HIV Med. 2012;13(2):107-17.

[7] Buchanan AM, Cunningham CK. Advances and failures in preventing perinatal human immunodeficiency virus infection. Clin Microbiol Rev. 2009;22(3):493-507. doi:10.1128/CMR.00054-08.

[8] United Nations. Women's rights are human rights. Geneva: Office of the High Commissioner in Human Rights; 2014. Report No.: ISBN 978-92-1-154206-6.

[9] Consolidated guideline on sexual and reproductive health and rights of women living with HIV. World Health Organization. 2017 (https://www.aidsdatahub.org/sites/default/files/resource/consolidated-guideline-sexual-and-reproductive-health-and-rights-women-living-hiv-2017-full-report.pdf. accessed 4 January 2021).

[10] The Global HIV/AIDS Epidemic. KFF organization (https://www.kff.org/global-health-policy/fact-sheet/the-global-hivaids-epidemic/ accessed 7 January 2021).

[11] 20.1 million girls and women living with HIV. UNAIDS (https://www.unaids.org/en/resources/infographics/girls-and-women-living-with-HIV accessed 5 March 2021).

[12] Global HIV & AIDS statistics 2020 fact sheet. UNAIDS (https://www.unaids.org/en/resources/fact-sheet. accessed 4 January 2021).

[13] Women, girls, gender equality, and HIV. UNAIDS. Fact sheet. 2010 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---ilo_aids/documents/publication/wcms_152931.pdf. accessed 6 March 2021).

[14] Stirling M, Rees H, Kasedde S, Hankins C. Introduction: Addressing the vulnerability of young women and girls to stop the HIV epidemic in southern Africa. AIDS. 2008 Dec;22 Suppl 4: S1-3. doi: 10.1097/01.aids.0000341772.48382.57.

[15] Adimora AA, Ramirez C, Auerbach JD, Aral SO, Hodder S, Wingood G, El-Sadr W, Bukusi EA. HIV Prevention Trials Network Women at Risk Committee. Preventing HIV infection in women. J Acquir Immune Defic Syndr. 2013 Jul;63 Suppl 2(0 2): S168-73. doi: 10.1097/ QAI.0b013e318298a166.

[16] Wira CR, Patel MV, Ghosh M, Mukura L, Fahey JV. Innate immunity in the human female reproductive tract: endocrine regulation of endogenous antimicrobial protection against HIV and other sexually transmitted infections. Am J Reprod Immunol. 2011 Mar;65(3):196-211. doi: 10.1111/j.1600-0897.2011.00970. x.

[17] Dunbar B, Patel M, Fahey J, Wira C. Endocrine control of mucosal immunity in the female reproductive tract: impact of environmental disruptors. Mol Cell Endocrinol. 2012;354(1-2):85-93. doi:10.1016/j.mce.2012.01.002.

[18] Wira CR, Fahey JV, Ghosh M, Patel MV, Hickey DK, Ochiel DO. Sex hormone regulation of innate immunity in the female reproductive tract: the role of epithelial cells in balancing reproductive potential with protection against sexually transmitted pathogens. Am J Reprod Immunol. 2010 Jun;63(6):544-65. doi: 10.1111/j.1600-0897.2010.00842. x.

[19] Roberts L, Liebenberg L, Barnabas S, Passmore JA. Vaginal microbicides to prevent HIV infection in women: perspectives on the female genital tract, sexual maturity and mucosal inflammation. Best Pract Res Clin Obstet Gynaecol. 2012 Aug;26(4):441-9. doi: 10.1016/j. bpobgyn.2012.02.002.

[20] Lai SK, Hida K, Shukair S, Wang YY, Figueiredo A, Cone R, Hope TJ, Hanes J. Human immunodeficiency virus type 1 is trapped by acidic but not by neutralized human cervicovaginal mucus. J Virol. 2009 Nov;83(21):11196-200. doi: 10.1128/JVI.01899-08.

[21] Thurman AR, Doncel GF. Innate immunity and inflammatory response to Trichomonas vaginalis and bacterial vaginosis: relationship to HIV acquisition. American journal of reproductive immunology. 2011;65(2):89-98.

[22] Powers KA, Poole C, Pettifor AE, Cohen MS. Rethinking the heterosexual infectivity of HIV-1: a systematic review and meta-analysis. Lancet Infect Dis. 2008;8(9):553-563. doi:10.1016/ S1473-3099(08)70156-7.

[23] Heffron R, Donnell D, Rees H, et al. Use of hormonal contraceptives and risk of HIV-1 transmission: a prospective cohort study [published correction appears in Lancet Infect Dis. 2012 Feb;12(2):98]. Lancet Infect Dis. 2012;12(1):19-26. doi:10.1016/ S1473-3099(11)70247-X.

[24] Adimora AA, Schoenbach VJ, Martinson FE, Coyne-Beasley T, Doherty I, Stancil TR, Fullilove RE. Heterosexually transmitted HIV infection among African Americans in North Carolina. J Acquir Immune Defic Syndr. 2006 Apr 15;41(5):616-23. doi: 10.1097/01.qai.0000191382. 62070.a5.

[25] Gregson S, Nyamukapa CA, Garnett GP, Mason PR, Zhuwau T, Caraël M, Chandiwana SK, Anderson RM. Sexual mixing patterns and sex-differentials in teenage exposure to HIV infection in rural Zimbabwe. Lancet. 2002 Jun 1;359(9321):1896-903. doi: 10.1016/ S0140-6736(02)08780-9. Erratum in: Lancet 2002 Oct 5;360(9339):1102.

[26] Wyatt GE, Myers HF, Williams JK. Does a history of trauma contribute to HIV risk for women of color? Implications for prevention and policy.

Am J Public Health. 2002;92(4):660-665. doi:10.2105/ajph.92.4.660.

[27] Zierler S, Feingold L, Laufer D, Velentgas P, Kantrowitz-Gordon I, Mayer K. Adult survivors of childhood sexual abuse and subsequent risk of HIV infection. Am J Public Health. 1991;81(5):572-575. doi:10.2105/ajph.81.5.572.

[28] Maman S, Campbell J, Sweat MD, Gielen AC. The intersections of HIV and violence: directions for future research and interventions. Soc Sci Med. 2000 Feb;50(4):459-78. doi: 10.1016/s0277-9536(99)00270-1.

[29] De Waal A, Klot J, Mahajan M.HIV/AIDS, security, and conflict: new realities, new responses. AIDS, Security, Conflict Initiative.2010. ISBN 978-0-9841257-9-1.

[30] Chandra-Mouli V, Armstrong A, Amin A, Ferguson J. A pressing need to respond to the needs and sexual and reproductive health problems of adolescent girls living with HIV in low- and middle-income countries. J Int AIDS Soc. 2015;18(Suppl 5):20297. doi:10.7448/IAS.18.6.20297.

[31] Gómez-Suárez M, Mello MB, Gonzalez MA, Ghidinelli M, Pérez F. Access to sexual and reproductive health services for women living with HIV in Latin America and the Caribbean: systematic review of the literature. J Int AIDS Soc. 2019;22(4): e25273. doi:10.1002/jia2.25273.

[32] Jewkes RK, Morrell R. Gender and Sexuality: Emerging Perspectives from the heterosexual epidemic in South Africa and implications for HIV risk and prevention. Journal of the International AIDS Society. 2010; 13:6.

[33] Abdool-Karim Q, Baxter C, Birx D. Prevention of HIV in Adolescent Girls and Young Women: Key to an AIDS-Free Generation. J Acquir Immune Defic Syndr. 2017 May 1;75 Suppl 1: S17-S26. doi: 10.1097/QAI.0000000000001316.

[34] De Bruyn M. Women and AIDS in developing countries. Soc Sci Med. 1992;34(3):249-62.

[35] Campbell C. Women, families & HIV/AIDS: a sociological perspective of the epidemic in America. Cambridge, UK: Cambridge University Press; 1999.

[36] Buzy JM, Gayle HD. The epidemiology of HIV & AIDS in women. In: Long D, Ankrah EM, editors. Women's experiences with HIV/AIDS: An International perspective. Columbia University Press Books; 1996. p. 181-204.

[37] Berer M, Ray M. Women, and HIV/AIDS, an international resource book. London: Pandora Press; 1993.

[38] Cullinane J. The domestication of AIDS: stigma, gender, and the body politic in Japan. Med Anthropol. 2007;26(3):255-92.

[39] Lawless S, Kippax S, Crawford J. Dirty, diseased & undeserving: the position of HIV positive women. Soc Sci Med. 1996;43(9):1371-7.

[40] Crossley M. Women living with long-term HIV diagnosis: problems, concerns, and ways of ascribing meanings. Women's Stud Int Forum. 1998;21:521-33.

[41] Chesney MA, Smith AW. Critical delays in HIV testing and care: the potential role of stigma. Am Behav Sci. 1999;42:1158-70.

[42] Green L, Ardon C, Catalan J. HIV, childbirth and suicidal behavior: a review. Hosp Med. 2000; 61:311-4.

[43] Heath J, Roadway MR. Psychological needs of women living with HIV. Soc Work Health Care. 1999; 29:43-57.

[44] Geter A, Sutton M, McCree D. Social and structural determinants of HIV treatment and care among women living with HIV infection: a systematic review: 2005-2016, AIDS Care: 2018;30:4, 409-416. doi:10.1080/09540121.2018.1426827.

[45] Cuca Y, Asher A, Okonsky J Kaihura, A, Dawson-Rose C, Webel A. HIV Stigma and Social Capital in Women Living With HIV, Journal of the Association of Nurses in AIDS Care: January 2017;28 (1): 45-54 doi: 10.1016/j.jana.2016.09.001.

[46] Paudel V, Baral KP. Women living with HIV/AIDS (WLHA), battling stigma, discrimination and denial and the role of support groups as a coping strategy: a review of literature. Reprod Health. 2015;12:53.doi:10.1186/s12978-015-0032-9.

[47] Gogna M, Pecheny M, Ibarlucia I, Manzelli H. The reproductive needs and rights of people living with HIV in Argentina: Health service users' and providers' perspectives. Social Science & Medicine. 2009.; 69(4): p. 813-20.

[48] Newman S, Grossman D, Blat C, Onono M, Steinfield R, Suzuki E. Does integrating family planning into HIV care and treatment impact intention to use contraception? Patient perspectives: HIV-infected individuals in Nyanza Province, Kenya. Int J Gynaecol Obstet. 2013; 13(Suppl): p. 6-23.

[49] Kim JC, Watts C. Gaining a foothold: tackling poverty gender inequality and HIV in Africa. Brit Med J. 2005;331:769-72.

[50] Gupta GR. Gender, sexuality, and HIV/AIDS: the what, the why, and the how. HIV/AIDS Policy Law Rev. 2000;5(4):86.

[51] Eliminating forced, coercive and otherwise involuntary sterilization: an interagency statement, OHCHR, UN Women, UNAIDS, UNDP, UNFPA, UNICEF and WHO. Geneva: World Health Organization; 2014 (http://apps.who.int/iris/bitstream/10665/112848/1/9789241507325_eng.pdf, accessed 6 March 2021).

[52] Gibbs A, Willan S, Misselhorn A, Mangoma A. Combined structural interventions for gender equality and livelihood security: a critical review of the evidence from southern and eastern Africa and the implications for young people. J Int AIDS Soc. 2012;15(3 Suppl 1):17362.

[53] Pronyk PM, Kim JC, Abramsky T, Phetla G, Hargreaves JR, Morison LA, Watts C, Busza J, Porter JD. Combined microfinance and training intervention can reduce HIV risk behavior in young female participants. AIDS. 2008;22:1659-66.

[54] Orza L, Welbourn A, Bewley S, Crone ET, Vazquez M; Salamander Trust. Building a safe house on firm ground: key findings from a global values and preferences survey regarding the sexual and reproductive health and human rights of women living with HIV. Geneva: World Health Organization; 2014 (http://salamandertrust.net/wpcontent/uploads/2016/09/BuildingASafeHouseOnFirmGroundFINALreport190115.pdf, accessed 6 March 2021).

[55] Bras M, Narasimhan M, Loutfy M, Khosla R (editors). Sexual and reproductive health and human rights of women living with HIV. J Int AIDS Soc. 2015;18(Suppl 5) (http://www.jiasociety.org/index.php/jias/article/view/20834/pdf, accessed 6 March 2021).

[56] Reproductive health strategy to accelerate progress towards the attainment of international development goals and targets. Global Strategy adopted by the 57th World Health Assembly. Geneva: World Health

Organization; 2004 (http://apps.who.int/iris/bitstream/10665/68754/1/WHO_RHR_04.8.pdf, accessed 6 March 2021).

[57] Integrating gender into HIV/AIDS programmes in the health sector: tool to improve responsiveness to women's needs. Geneva: World Health Organization; 2009 (http://www.who.int/gender/documents/gender_hiv_guidelines_en.pdf, accessed 4 January 2021).

[58] Preventing HIV and unintended pregnancies: strategic framework 2011-2015. The Inter-agency Task Team for Prevention and Treatment of HIV Infection in Pregnant Women, Mothers, and their Children; 2012 (http://www.who.int/reproductivehealth/publications/linkages/HIV_and_unintended_pregnancies_SF_2011_2015.pdf, accessed 6 March 2021).

[59] Global guidance on criteria and processes for validation: elimination of mother-to-child transmission of HIV and syphilis. Geneva: World Health Organization; 2014 (http://apps.who.int/iris/bitstream/10665/112858/1/9789241505888_eng.pdf, accessed 6 March 2021).