











REVIEW

Mental Health Challenges in Pregnant Women Living with HIV and the Risk of Mother-to-Child Transmission: A Literature Review

Desafíos de Salud Mental en Mujeres Embarazadas que Viven con VIH y el Riesgo de Transmisión de Madre a Hijo: Una Revisión de la Literatura

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ABSTRACT

Introduction: pregnant women living with HIV face significant challenges, balancing the management of HIV and its potential transmission to their children. Mental health issues, such as depression and anxiety, exacerbate these challenges and may impact adherence to HIV care and treatment, further increasing the risk of mother-to-child transmission.

Method: this review examines the mental health problems among PWLHIV, their potential impact on HIV transmission to children, and the role of mental health interventions in improving maternal and child health outcomes. **Methods:** A comprehensive literature review was conducted, including studies published over the last decade on the mental health status of PWLHIV, their adherence to antiretroviral therapy, and the implications for HIV transmission to their children. Key studies were summarized and analyzed to identify prevalent mental health issues, their relationship to mother-to-child transmission, and effective intervention strategies.

Results: depression and anxiety were the most commonly reported mental health problems among PWLHIV, with prevalence rates of 30-47 % for depression and 20-40 % for anxiety. Mental health problems were shown to hinder adherence to ART, increase the risk of HIV transmission during pregnancy, childbirth, and breastfeeding, and negatively impact both maternal and child health. Integrated care models that combine mental health support with HIV and maternal-child health services were found to improve care engagement and reduce HIV transmission risk.

Conclusions: mental health problems significantly impact the ability of PWLHIV to prevent HIV transmission to their children. Integrated interventions that address both mental health and HIV care are essential to improving maternal and child health outcomes and minimizing the risk of mother-to-child transmission.

Keywords: HIV; Pregnant Women; Mental Health; Depression; Anxiety; Mother-To-Child Transmission.

RESUMEN

Introducción: las mujeres embarazadas que viven con el VIH enfrentan desafíos significativos al equilibrar el manejo del VIH y su posible transmisión a sus hijos. Los problemas de salud mental, como la depresión y la ansiedad, agravan estos desafíos y pueden afectar la adherencia a la atención y el tratamiento del VIH, aumentando aún más el riesgo de transmisión de madre a hijo.

Método: esta revisión examina los problemas de salud mental entre las mujeres embarazadas que viven con VIH (MEVIH), su posible impacto en la transmisión del VIH a los hijos y el papel de las intervenciones en salud mental para mejorar los resultados en la salud materna e infantil. Se realizó una revisión exhaustiva de la literatura, incluyendo estudios publicados en la última década sobre el estado de salud mental de las MEVIH, su adherencia a la terapia antirretroviral (TAR) y las implicaciones para la transmisión del VIH a sus hijos. Se resumieron y analizaron estudios clave para identificar los problemas de salud mental más prevalentes, su relación con la transmisión maternoinfantil y las estrategias de intervención eficaces.

Resultados: la depresión y la ansiedad fueron los problemas de salud mental más comúnmente reportados entre las MEVIH, con tasas de prevalencia del 30-47 % para la depresión y del 20-40 % para la ansiedad. Se demostró que los problemas de salud mental dificultan la adherencia a la TAR, aumentan el riesgo de transmisión del VIH durante el embarazo, el parto y la lactancia, y afectan negativamente la salud materna e infantil. Se encontró que los modelos de atención integrados que combinan el apoyo en salud mental con los servicios de VIH y salud maternoinfantil mejoran la vinculación a la atención y reducen el riesgo de transmisión del VIH.

Conclusiones: los problemas de salud mental impactan significativamente la capacidad de las MEVIH para prevenir la transmisión del VIH a sus hijos. Las intervenciones integradas que abordan tanto la salud mental como la atención del VIH son esenciales para mejorar los resultados en salud materna e infantil y minimizar el riesgo de transmisión de madre a hijo.

Palabras clave: VIH; Mujeres Embarazadas; Salud Mental; Depresión; Ansiedad; Transmisión de Madre a Hijo.

INTRODUCTION

Mental health problems can negatively affect the health of people living with HIV (PLHIV) and are often overlooked. HIV infection also remains a public health threat and there are an estimated 37,7 million people worldwide living with HIV. Two-thirds of these are in Sub-Saharan Africa and have the highest mortality rates.⁽¹⁾ 19,3 million women over the age of 15 were infected with HIV and 1,7 million children under the age of 15 were also infected in 2020. At the same age, deaths in children have reached 99 000 and 240 000 in women of that age.⁽²⁾ Women make up the majority of the 38,4 million people living with HIV worldwide.⁽³⁾

Many people infected with HIV experience mental problems and most of them are anxiety and depression. Research conducted in Guinea West Africa on HIV patients at Conakri University Hospital found 13,8 % of patients included in the study had anxiety symptoms. The same research in other places such as China, South Africa and Nigeria, showed a higher prevalence of anxiety, namely 27,4 % in China and 30,6 % in South Africa and 32,6 % in Nigeria.⁽⁴⁾ Meanwhile, in Sub-Saharan Africa, anxiety disorders in people with HIV AIDS range between 9 % and 34 %.⁽⁵⁾ Likewise, a study in 2 hospitals in Southern Ethiopia in 2018 showed 32 % of HIV patients experienced depression and 34,4 % had anxiety problems.⁽⁶⁾

It is estimated that there were 970 million people experiencing mental illness in the world in 2019, including anxiety and depression. Although anxiety and depressive disorders are prevalent in both men and women, they are 50 % more common in women than men during their lifetime. ⁽⁷⁾ Anxiety and depression are also more likely to occur in HIV-infected individuals. Depression is two to four times more prone in HIV positive individuals than those who are not infected.⁽⁶⁾ Depression in women living with HIV has a significant impact on their well-being. Quality of life decreases and can worsen their health conditions.⁽⁸⁾

Mental problems affect the daily lives of people living with HIV. Losing interest in daily activities, worrying about the progression of the disease to affect mood and cause fatigue, ignoring recommended treatments so that they do not comply with ARV therapy, reduce endurance and result in the risk of getting sicker and experiencing a greater risk of death.⁽⁹⁾ In HIV-positive pregnant women, depression during pregnancy that is prone to be experienced also affects treatment adherence.⁽¹⁰⁾

Adherence to ARV therapy in Pregnant women living with human immunodeficiency virus (PWLHIV) is the key to suppressing the amount of virus in the body so that the risk of transmitting to the fetus can be prevented to the maximum.⁽¹¹⁾ HIV transmission in children can be obtained from HIV positive mothers.

The risk of transmission can occur during pregnancy, labor or breastfeeding. If treatment adherence is not optimal, it is estimated that 15-30 % of infections occur while the child is in the womb and at birth and continue 15 % during breastfeeding.⁽¹²⁾ It is estimated that every year there are 1,3 million HIV positive women who become pregnant. Meanwhile, the number of children infected with HIV through their mothers each year is close to 500 000.⁽¹³⁾

Overall, data from several countries in the world show that in 2018 there were 18,8 million women living with HIV. If no control measures are taken, transmission to children can occur by 14 % to 48 %.

Conversely, children can be prevented from becoming infected with HIV by 5 % or even 2 % if efforts are made to prevent transmission to children. A study conducted in Liangshan, China, found that only 47 % of HIV-positive pregnant women received standardized services to prevent HIV transmission to children.⁽¹⁴⁾

PWLHIV are vulnerable to mental health burden during pregnancy. This burden is higher than other pregnant women who are not infected with HIV.⁽⁵⁾ Limited studies have been conducted regarding mental problems during pregnancy while this condition is prone to be experienced during this period.⁽¹⁵⁾ Interventions are needed to address the mental problems of HIV-positive mothers who can transmit the virus to their babies and affect the health of the baby.⁽¹⁶⁾ Mental distress is detrimental to the health of the mother and her unborn child and studies related to it are still rare. Depression and HIV infection are predicted to dominate the world by 2030.⁽¹⁷⁾ Mental health disorders experienced by HIV-positive pregnant women are not well recorded and further studies are needed to determine the mental disorders that occur.⁽¹⁵⁾ This article reviews current knowledge about potential mental problems in HIV-positive pregnant women and the impact they can have on their children.

METHOD

Search Strategy

This literature review was conducted using a structured and systematic approach to identify relevant studies focusing on mental health concerns among HIV-positive pregnant women, particularly in relation to the risk of mother-to-child (vertical) HIV transmission. The search was carried out using three major online databases: PubMed, ScienceDirect, and Google Scholar. Only free full-text journal articles in PDF format were considered for inclusion to ensure accessibility and transparency. However, this inclusion criterion may have introduced a degree of selection bias, as studies behind paywalls or in alternative formats may have been excluded despite their potential relevance.

Eligibility Criteria

To maintain relevance and ensure the information was up to date, the search was limited to publications from the past ten years, between 2014 and 2024. The main keywords used in the search were “mental health,” “HIV/AIDS,” “pregnant women,” and “vertical transmission.” Articles were included if they focused on the mental health of HIV-positive pregnant women and addressed issues related to vertical transmission. Studies were excluded if they focused solely on HIV treatment, immunological studies, general reproductive health, or HIV testing. Articles not available in full text or published in a language other than English were also excluded.

Screening and Selection Process

As detailed in figure 1, an initial total of 15,320 articles were identified from the three databases. After removing 1 532 duplicates, 13 788 articles remained for screening. Based on titles and abstracts, 9 965 articles were excluded for being unrelated to the topic, leaving 3 823 articles. Applying the ten-year publication filter further reduced the number to 1 456 articles. Subsequently, 696 articles were excluded for not being open access, resulting in 760 eligible articles.

Final Selection

The abstracts of the remaining 760 articles were reviewed for relevance to psychological and emotional health concerns in HIV-positive pregnant women. Articles were excluded if they (1) focused solely on biomedical aspects such as treatment protocols, antiretroviral therapy, immunity, or HIV testing without addressing psychological or emotional health; (2) centered on general reproductive health or maternal outcomes unrelated to mental well-being; or (3) lacked sufficient focus on the target population (e.g., included women living with HIV but not specifically pregnant). This screening process led to the exclusion of 739 articles and the final inclusion of 21 full-text articles that were thoroughly reviewed and included in this literature review.

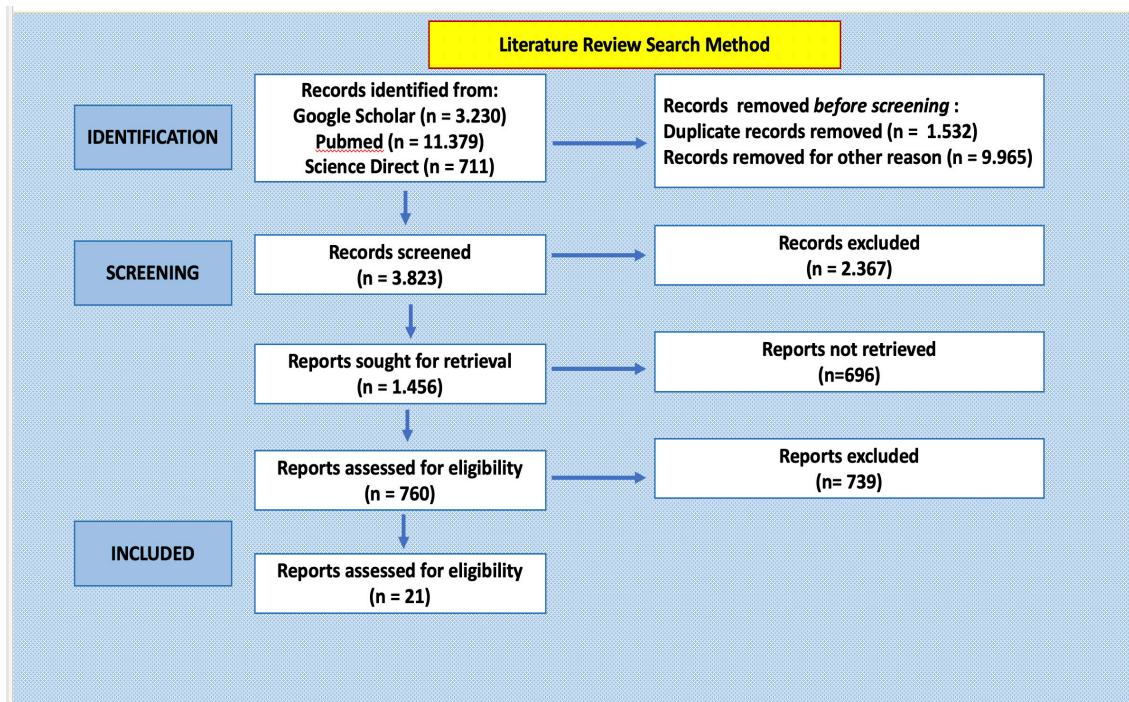


Figure 1. Literature search flow on potential mental health problems of PWLHIV and the risk of HIV transmission from mother to child

RESULTS AND DISCUSSION

This literature review included 21 studies published between 2014 and 2024, focusing on the mental health issues of HIV-positive pregnant women (PWLHIV) and the associated risks of mother-to-child HIV transmission. The selected studies were sourced from databases such as PubMed, ScienceDirect, and Google Scholar. The articles reviewed are summarized in table 1.

Mental Health Problems in Pregnant Women Living with HIV (PWLHIV)

Stress, depression, anxiety, and other mental health problems represent the body's adaptive responses to various pressures and challenges that individuals face. Stress, in particular, can lead to both depression and anxiety. These emotional responses, in turn, trigger "sick behavior," which refers to behaviors and feelings associated with distress.^{(18),(19)} The body's stress system is mainly controlled by structures in the hypothalamus and brainstem, both of which are integral in regulating emotional and physical reactions to stress. In pregnant women, particularly in the later stages of pregnancy, hypercortisolism, a condition marked by an excess of stress hormones can manifest, potentially leading to symptoms similar to major depression.⁽²⁰⁾ Studies indicate that one in five people experience clinically significant levels of depression or anxiety, and these problems are notably prevalent in women of childbearing age. This demographic experiences higher morbidity and mortality rates due to mental health issues compared to other groups, making mental health a critical focus in maternal care.⁽²¹⁾

PWLHIV face a particularly challenging dual burden, both pregnancy and HIV infection negatively impact their mental health. These two factors also contribute to negative health outcomes for both the mother and the child, especially with the heightened risk of HIV transmission.⁽²¹⁾ In fact, mental health issues are more commonly observed among PWLHIV than in uninfected pregnant women, and the prevalence is notably higher in women compared to men. Depression and anxiety disorders in HIV-positive pregnant women are reported to be 33 % more common than in the general population.⁽²²⁾ A comprehensive review of several studies conducted over the past decade (as shown in table 1) reveals that stress, anxiety, and depression are frequently observed in HIV-positive pregnant women, with profound psychological and social consequences. These mental health issues create barriers to adequate care, affecting treatment adherence and exacerbating the risk of mother-to-child HIV transmission.⁽²³⁾

Prevalence of Mental Health Issues in PWLHIV

The most common mental health problems among HIV-positive pregnant women are anxiety and depression. Research indicates that anxiety in this group ranges from 20 % to 40 %, with the primary triggers being fear of transmitting HIV to the child, concerns about the future, social stigma, and feelings of shame associated with HIV status. These factors contribute to heightened anxiety, which, in turn, negatively affects the physical and emotional well-being of both the mother and the child. Furthermore, anxiety can lead to neglect of essential

HIV care and treatment, including antiretroviral therapy (ARV), thus increasing the risk of HIV transmission to the infant.⁽²⁴⁾ Depression in HIV-positive pregnant women is reported to range from 30 % to 47 %, with exacerbating factors including disease progression, financial instability, and limited access to mental health resources. Like anxiety, depression is detrimental to the health of both the mother and the child. Depressed mothers may neglect their ARV therapy, which increases the risk of HIV transmission to their infants. Therefore, early intervention and addressing mental health problems are critical in reducing these risks. Integrated services combining HIV care, mental health support, and maternal health services are essential in mitigating the negative impacts of mental health disorders on pregnancy outcomes.⁽²⁵⁾

HIV Transmission to Children

HIV transmission from mother to child can occur during pregnancy, childbirth, or breastfeeding.⁽²⁶⁾ The virus can cross the placenta, particularly during late pregnancy when changes in the immune system make transmission more likely.⁽²⁷⁾ HIV is also present in breast milk, which means that breastfeeding can serve as a potential route of transmission. However, with rigorous prevention programs in place, the risk of mother-to-child transmission (MTCT) can be reduced to less than 2 %.⁽²⁸⁾ Factors such as a high maternal viral load, poor maternal health due to coexisting diseases, inadequate nutrition, and non-adherence to ARV therapy all contribute to the risk of HIV transmission to the infant. Ensuring strict adherence to ARV therapy significantly reduces viral load, minimizing the risk of transmission. In addition to maternal ARV therapy, infants are typically administered prophylactic ARVs during the first few weeks of life to further reduce the likelihood of transmission. Without appropriate intervention, however, the transmission rate can be as high as 20-45 %.⁽²⁹⁾

Research has emphasized the crucial role that maternal mental health plays in preventing MTCT. Women experiencing mental health challenges, such as anxiety and depression, are less likely to adhere to ARV therapy, which is essential for reducing the risk of transmission. Mental distress often results in delays in seeking prenatal care, irregular use of ART, and poor health outcomes for both the mother and child. These factors increase the likelihood of HIV transmission to the infant.

Table 1. Studies related to Potential Mental Problems of PWLHIV and Risk of HIV Transmission to Children

Authors (year)	Mental health measured	Transmission risk	Findings
Tuthill et al., 2021 ⁽³⁰⁾	Stress, anxiety, depression	Neglecting ARV therapy and stopping breastfeeding affect the risk of transmitting HIV to the child	Financial vulnerability and job loss affect the mental health of HIV pregnant women and result in low HIV care as well as food insecurity.
Parcesepe et al., 2021 ⁽⁵⁾		HIV-positive pregnant women are often at risk of mental problems that could potentially lead to new HIV infections to their children.	HIV-positive pregnant women experience high levels of mental distress and abuse from partners. Both of these adversely affect HIV care and potentially lead to new HIV infections.
Nyamukoho et al., 2019 ⁽³¹⁾	Depression, Anxiety	Depression during pregnancy is detrimental to the health of the unborn baby.	Many pregnant women with HIV experience depression during pregnancy due to abusive treatment at home and previous depression.
Abebe et al., 2022 ⁽²⁵⁾	Depression	Risk of HIV transmission can occur due to non-compliance with ARV therapy	Neglecting ARV therapy is almost twice as likely in pregnant women who are depressed and worsens HIV treatment.
Cordoba et al., 2021 ⁽³²⁾	Depression	Not optimally undergoing ARV therapy has a bad outcome on pregnancy	Not maximizing ARV therapy is influenced by a combination of mental problems of depression or anxiety, getting abusive treatment from a partner and conditions difficult to get food.
Zotova et al., 2022 ⁽³³⁾	Anxiety, Depression	Depression affects the discipline of ARV therapy which triggers new HIV infections	Depression among pregnant women with HIV is lower because they disclose their status to their partners despite the risk of getting abusive treatment
Zewdu et al., 2021 ⁽³⁴⁾	Depression	Poor mental health affects the quality of life of pregnant women with HIV and the potential for HIV transmission to children	Suicidal ideation among pregnant women with HIV was significantly associated with depression, keeping their HIV infection secret and having an unplanned pregnancy.
Masiano et al., 2022 ⁽³⁵⁾	Depression	Adverse childhood experiences affect mental health and mental disorders affect the ability to think manage Health prevent transmission of HIV to children	There is a significant association between adverse childhood experiences and mental illness in pregnant women with HIV, which affects adherence to ARV therapy and may lead to vertical transmission.

Bengtson <i>et al.</i> , 2023 ⁽³⁶⁾	Depression, (Post	PTSD	Vertical transmission of HIV from mother to child	Mental illness interventions were effective in reducing depression and anxiety, increased participation in HIV care, and decreased risk of transmission with increased adherence to treatment.
Concepcion, Velloza, Christopher G. Kemp, <i>et al.</i> , 2023. ⁽³⁷⁾	Traumatic Disorder)	Stress	Depression affects the increase of the HIV virus and the potential for new infections to occur	Depression during pregnancy in HIV-positive mothers adversely affects viral load reduction.
Bulterys <i>et al.</i> , 2023. ⁽³⁸⁾	Depression, Anxiety		Feeling depressed due to an unstable relationship with partner leads to neglect of HIV care, increased viral load and risk of HIV transmission to the baby and partner	Fear of abandonment by a partner is a mental burden for HIV-positive women during pregnancy and after childbirth. Unstable relationships affect treatment adherence, increasing the chance of HIV transmission. This condition also has an adverse effect on children's health.
Ngocho <i>et al.</i> , 2019. ⁽²⁴⁾	Depression		Depression and anxiety experienced by HIV positive pregnant women has the potential to increase the transmission of HIV to children and partners.	The prevalence of depression and anxiety is high among HIV positive pregnant women. This has a negative impact on the health of the mother and child due to neglect of ARV therapy.
Meza-Rodríguez <i>et al.</i> , 2023. ⁽²³⁾	Anxiety, Depression		Deterioration in the mental state of HIV-positive pregnant women can lead to vertical transmission of HIV to children and horizontal transmission of HIV to partners.	Psychological distress is high in HIV positive pregnant women, depression and anxiety are also commonly found and non-adherence to ARV therapy is triggered by multiple problems due to HIV infection and pregnancy conditions and socio-economic burdens. Ineffective coping with maladaptive actions worsens the well-being and health of mother and child.
Alhassan <i>et al.</i> , 2022. ⁽³⁹⁾	Anxiety, Depression		Late initiation of ARV therapy and obtaining health services during pregnancy increases the risk of HIV transmission from mother to child and partner.	Fear of HIV status being known to partners leads to delays in initiating care and treatment, stigma and fear of not receiving financial support from partners.
Akinsolu <i>et al.</i> , 2023. ⁽⁴⁰⁾	Stress, anxiety, Depression		Stress and depression adversely affect adherence to ARV therapy, making it vulnerable to HIV transmission to children during pregnancy, childbirth and breastfeeding.	Stress and depression are common among HIV positive pregnant women in Nigeria. These conditions lead to non-adherence to ARV therapy resulting in increased viral load and the potential for transmission of HIV to children and various other pregnancy problems.
Kacanek <i>et al.</i> , 2024. ⁽⁴¹⁾	Fear, Stress,		Risk of mother-to-child transmission of HIV during pregnancy and after birth	Mental health interventions for women of childbearing age before, during and after pregnancy are needed for better health outcomes for mother and child.
Tuthill <i>et al.</i> , 2023. ⁽⁴²⁾	Anxiety, Depression		Concern about transmitting HIV to the baby while breastfeeding	HIV-positive pregnant women can positively receive financial and infant feeding support. This removes the worry of financial problems and the risk of transmitting HIV by breastfeeding the baby. Mental wellbeing improved with both interventions combined and influenced better parenting.
Moseholm <i>et al.</i> , 2022. ⁽⁴³⁾	Stress, Depression		Depression and stress inhibit adherence to ARV therapy and the potential to transmit HIV to the baby	Depression is common among HIV-positive pregnant women and HIV-positive women who are not pregnant, as well as women without HIV who are pregnant. Pregnant women with HIV had higher rates of depression than pregnant women without HIV but there was no significant difference with HIV women who were not pregnant.
Knettel <i>et al.</i> , 2020. ⁽⁴⁴⁾	Anxiety, Depression,		Adherence to ARV therapy can reduce viral load to prevent transmission of HIV to the baby.	Suicidal thoughts among HIV positive women during pregnancy and after childbirth are high. Disbelief in the efficacy of ART also influences the desire to end one's life.

Ashaba <i>et al.</i> , 2017. ⁽⁴⁵⁾	PTSD Traumatic	(Post Social problems worsen mental health and affect engagement in HIV care, making new HIV infections more likely.	Psychosocial problems among HIV-positive pregnant women may result from being stigmatized by health workers, keeping their HIV status a secret from their partner, not planning for pregnancy, and not being aware of their HIV status.
Gong <i>et al.</i> , 2018. ⁽⁴⁶⁾	Stress Disorder)	Poor labeling of HIV-positive pregnant women negatively affects efforts to prevent vertical transmission of HIV from mother to child.	HIV status from the partner, not planning the pregnancy and unsupportive environmental factors.

The Relationship Between Mental Illness and HIV Transmission

PWLHIV are burdened not only by the challenges of pregnancy but also by the lifelong management of HIV infection, which can have a profound impact on their mental health.⁽⁴⁷⁾ Anxiety and depression are common among pregnant women, and when combined with HIV infection, these conditions can have serious consequences for maternal and child health.⁽⁴⁸⁾ PWLHIV who experience depression may neglect their health care, including ARV treatment, and fail to properly care for themselves and their fetus, including safe breastfeeding practices. These neglectful behaviors significantly increase the risk of mother-to-child transmission of HIV.⁽⁴⁹⁾ Furthermore, depression can contribute to a rise in viral load, as it impacts immune function and reduces adherence to ARV therapy. This increases the likelihood of vertical transmission of HIV. Adverse birth outcomes, such as preterm birth, low birth weight, and even miscarriage, are more likely to occur in cases where ARV therapy is not followed consistently. Undisciplined ARV therapy and increased viral load due to depression make HIV transmission to the child more likely.⁽³⁷⁾ Several studies have shown that adherence to ARV therapy can significantly improve the quality of life for HIV-positive individuals by effectively suppressing viral load, thus reducing the risk of transmission. Effective HIV transmission prevention efforts emphasize lifelong adherence to ARV therapy.⁽⁵⁰⁾

Intervention Efforts

Although significant advances have been made in HIV treatment and care, the management of mental health disorders in PLHIV remains a challenge.⁽⁵¹⁾ Mental health disorders can interfere with participation in HIV care, undermining the effectiveness of HIV treatments. HIV-positive pregnant women require comprehensive support to address both their mental health challenges and the risk of HIV transmission to their children. Counseling has proven to be an effective intervention, helping to reduce depression and anxiety, improve engagement with HIV care, and reduce viral load. Maintaining mental health through counseling ensures that mothers remain compliant with the recommended therapies, which is crucial in preventing HIV transmission.⁽³⁶⁾ Integrating mental health services with HIV and maternal-child health care is essential for maximizing the well-being of both mothers and children. Such an integrated approach ensures early detection of mental health issues and HIV infection, facilitating timely and appropriate interventions. Additionally, community, peer, and family support play vital roles in providing comprehensive care and improving outcomes for PWLHIV.⁽⁵¹⁾

CONCLUSIONS

PWLHIV face a dual burden, managing their HIV infection while also preventing transmission to their children. Mental health problems, particularly depression and anxiety, are prevalent among PWLHIV and significantly affect their ability to adhere to critical HIV care, such as maintaining discipline in taking ARVs. These mental health challenges hinder maternal self-care and can reduce involvement in child care, which is associated with increased risk of HIV transmission during pregnancy, childbirth, and breastfeeding. The literature reviewed shows that mental health disorders are not only more common among PWLHIV compared to the general population, but they are also associated with increased risk of HIV transmission to children. The evidence highlights that anxiety and depression have profound implications for HIV care adherence and, consequently, may contribute to increased risk of transmission to the child. Early intervention to address these mental health issues is crucial. Integrating mental health services with HIV and maternal-child health care can improve engagement in treatment, reduce viral load, and potentially prevent mother-to-child transmission of HIV. Counseling, psychological support, and social care are essential in helping PWLHIV manage both their mental and physical health, thereby minimizing the risk of HIV transmission and promoting the health of both mother and child.

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