



Vol 1 No 3 December 2023
e-ISSN 2988-7283

Editorial

Navigating the HIV Care Cascade: Addressing Challenges and Enhancing Outcomes

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Abstract

Individuals living with HIV undergo a multifaceted and prolonged care process marked by clinical, social, and emotional complexities. Unfortunately, they often encounter stigma in various forms. This editorial paper delves into specific social and public health challenges, emphasizing the significance of healthcare providers actively involving patients in the intricacies of the HIV care cascade. By addressing these barriers, we aim to enhance patient engagement and ultimately improve the overall outcomes of HIV care.

Keywords: barriers, care cascade dynamics, challenges, human immunodeficiency virus (HIV)

INTRODUCTION

Human Immunodeficiency Virus (HIV) HIV infection is caused by the HIV virus, which primarily attacks the immune system, specifically CD4-cells (Mishra et al., 2009; Singh & Singh, 2018). As the virus replicates within CD4-cells, the immune system weakens, increasing susceptibility to various infections and diseases (Vidya Vijayan et al., 2017). If untreated, HIV infection can progress to AIDS (acquired immunodeficiency syndrome) (Garcia & Guzman, 2023). HIV is transmitted through specific body fluids, including blood, semen, vaginal fluids, rectal fluids, and breast milk (Kordy et al., 2019). The infection progresses through stages: acute infection marked by rapid viral replication and flu-like symptoms, followed by chronic infection with a latent phase and gradual depletion of CD4 cells (Coffin & Swanstrom, 2013; Moir et al., 2011). Without treatment, the late stage leads to AIDS, characterized by severe immune system impairment and increased susceptibility to opportunistic infections and certain cancers (Deeks et al., 2013; Sandhu & Samra, 2013).

HIV diagnosis usually entails blood tests to identify either HIV antibodies or the virus (Parekh et al., 2018). Early detection is vital for promptly starting antiretroviral therapy (ART), which efficiently controls the virus, decelerates disease advancement, and lessens transmission risk. HIV is a persistent condition necessitating lifelong management and careful attention. With appropriate medical care, including ART, people with HIV can lead healthy lives, maintain an average life expectancy, and notably decrease the risk of transmitting the virus (Menon, 2010).

Antiretroviral Therapy (ART) and consistent adherence play a crucial role in managing HIV over the long term. As the standard HIV treatment, ART inhibits the virus's replication, aiming for sustained viral suppression at undetectable or very low levels. This suppression prevents HIV progression, preserves immune function, and reduces the risk of developing AIDS. ART offers numerous benefits, including improved health outcomes and quality of life, enabling immune system recovery, reduced risk of infections, maintenance and increase of CD4+ T cell counts, and lower risk of HIV transmission to sexual partners, as undetectable viral loads significantly decrease transmission risk (Cartwright et al., 2016; Chun et al., 2013; Cohen et al., 2013; Kessing et al., 2017; Rasmussen et al., 2018). A cohort study conducted in West Sumatera revealed a significant correlation between ART and years of potential life lost in HIV/AIDS patients (Ilmaskal et al., 2020).

Regular medical monitoring for HIV patients involves frequent assessments of CD4+ T cell count, viral load, and overall health, including laboratory tests and screenings for co-infections (Vajpayee & Mohan, 2011). Comprehensive HIV management includes preventive measures like vaccinations, co-infection screening, and counseling on safe sex practices. Comprehensive, long-term HIV care demands a multidisciplinary approach, involving specialists like infectious disease experts, psychologists, and social workers. Addressing mental health and social determinants of health is crucial. Patient engagement is pivotal for education and support in understanding and managing the condition (Bombard et al., 2018; Carman et al., 2013; Remien et al., 2008).

The HIV care cascade underscores the importance of patient engagement in optimizing the impact of ART and enhancing well-being. This study aimed to address key aspects, barriers, and challenges related to the HIV care cascade for patients. Recommendations for health systems and healthcare providers are also provided to enhance outcomes through effective patient engagement strategies.

Mental Health of Patients Living with HIV

People who are living with HIV often face an increased vulnerability to mental health issues like depression, anxiety, and substance use disorders. These challenges can have detrimental effects on their engagement with healthcare, making it harder for them to stick to treatment plans and attend regular medical appointments. Moreover, individuals with HIV are more prone to developing addiction and substance abuse issues. Cognitive impairment, including difficulties with memory and concentration, can arise either due to the HIV infection itself or as side effects of the medications used in antiretroviral therapy (ART). Given these complexities, it is imperative for healthcare providers to actively screen individuals with HIV for mental health issues and offer appropriate support and treatment. In addressing these mental health challenges, the integration of recovery theories becomes relevant. Programs like Recovery Colleges provide a model that can be adapted to deliver personalized interventions for people living with HIV. This approach to mental health education holds promise for achieving better mental health outcomes, which is crucial for fostering therapy adherence and enhancing the overall well-being of individuals with HIV. The proactive consideration of

mental health in the context of HIV care can contribute significantly to a more comprehensive and effective healthcare approach (Blank et al., 2013; Burnette et al., 2008; Dew et al., 1997; Pence, 2009; Remien et al., 2019; Sabri et al., 2023; Tegger et al., 2008; Vreeman et al., 2017).

Stigmatization on Patients Living with HIV

Stigma, whether external as social stigma or internal as self-stigma, is a significant barrier for individuals with HIV. Social stigma involves negative societal attitudes, discriminatory behaviors, and prejudiced beliefs, leading to fear, rejection, isolation, and limited opportunities. It hinders HIV testing, disclosure, and healthcare access, impeding timely diagnosis and care engagement. Stigma may stem from misinformation, fear of transmission, moral judgments, or cultural and religious beliefs, impacting self-esteem and relationships. Self-stigma occurs when individuals internalize these negative attitudes, resulting in negative self-perception, reduced self-worth, and potential impacts on treatment adherence and engagement in care. Addressing social and self-stigma is vital for HIV patient engagement, well-being, and outcomes. Creating a supportive environment, healthcare providers should use strategies like education, communication, and comprehensive care programs to encourage active patient participation (Chime et al., 2018, 2019; Lyimo et al., 2014; Ma et al., 2019; Zelaya et al., 2012).

Enhancing HIV Care through Collaborative and Multidisciplinary Approaches

Providing comprehensive care for individuals with HIV is a complex task that comes with significant challenges. The intricate nature of HIV necessitates a well-coordinated and multidisciplinary approach to care. In managing HIV, it is imperative for physicians and nurses to collaborate closely with social workers, nutritionists, mental health experts, and other specialists to ensure that patients receive the necessary and integrated care. To effectively address the challenges inherent in HIV care and meet the diverse needs of patients, healthcare providers must pool their efforts and expertise. Continuous assessment, evaluation, and improvement of the HIV care process are essential components for healthcare professionals to collectively navigate challenges and offer optimal support to patients (Browne, 2019; de Saxe Zerden et al., 2018; Patel et al., 2000; Soto et al., 2004; Stanhope & Straussner, 2017).

CONCLUSION

The HIV care cascade highlights the need for active patient involvement, particularly in adhering to antiretroviral therapy (ART) for optimal health outcomes. Challenges to adherence include stigma, literacy, healthcare access, mental health, and socioeconomic factors, potentially leading to virologic failure and compromised health.

To strengthen ART impact, addressing barriers, promoting early diagnosis, improving treatment accessibility, and supporting adherence are essential. Patient engagement is crucial, requiring healthcare providers to understand the patient's context. Barriers extend beyond patients, involving external factors like policyholders and service providers.

Engaging all stakeholders through advocacy, health equity promotion, increased financial support for HIV programs, expanded healthcare infrastructure, and training is vital. Collaboration among patients, policymakers, service providers, and community organizations is necessary to create an environment conducive to patient engagement and enhance HIV care outcomes. Recognizing the multifaceted nature of barriers allows for targeted interventions to ensure individuals with HIV receive comprehensive care and support.

DECLARATION OF CONFLICTING INTEREST

None

FUNDING

None

ACKNOWLEDGMENT

None

REFERENCES

- Blank, M. B., Himelhoch, S., Walkup, J., & Eisenberg, M. M. (2013). Treatment Considerations for HIV-Infected Individuals with Severe Mental Illness. *Current HIV/AIDS Reports*, 10(4), 371–379. <https://doi.org/10.1007/s11904-013-0179-3>
- Bombard, Y., Baker, G. R., Orlando, E., Fancott, C., Bhatia, P., Casalino, S., Onate, K., Denis, J.-L., & Pomey, M.-P. (2018). Engaging patients to improve quality of care: a systematic review. *Implementation Science*, 13(1), 98. <https://doi.org/10.1186/s13012-018-0784-z>
- Browne, T. (2019). Social Work Roles and Healthcare Settings. In *Handbook of Health Social Work* (pp. 21–37). Wiley. <https://doi.org/10.1002/9781119420743.ch2>
- Burnette, M. L., Lucas, E., Ilgen, M., Frayne, S. M., Mayo, J., & Weitlauf, J. C. (2008). Prevalence and Health Correlates of Prostitution Among Patients Entering Treatment for Substance Use Disorders. *Archives of General Psychiatry*, 65(3), 337. <https://doi.org/10.1001/archpsyc.65.3.337>
- Carman, K. L., Dardess, P., Maurer, M., Sofaer, S., Adams, K., Bechtel, C., & Sweeney, J. (2013). Patient And Family Engagement: A Framework For Understanding The Elements And Developing Interventions And Policies. *Health Affairs*, 32(2), 223–231. <https://doi.org/10.1377/hlthaff.2012.1133>
- Cartwright, E. K., Spicer, L., Smith, S. A., Lee, D., Fast, R., Paganini, S., Lawson, B. O., Nega, M., Easley, K., Schmitz, J. E., Bosinger, S. E., Paiardini, M., Chahroudi, A., Vanderford, T. H., Estes, J. D., Lifson, J. D., Derdeyn, C. A., & Silvestri, G. (2016). CD8 + Lymphocytes Are Required for Maintaining Viral Suppression in SIV-Infected Macaques Treated with Short-Term Antiretroviral Therapy. *Immunity*, 45(3), 656–668. <https://doi.org/10.1016/j.immuni.2016.08.018>
- Chime, O. H., Arinze-Onyia, S. U., & Ossai, E. N. (2019). Examining the effect of peer-support on self-stigma among persons living with HIV/AIDS. *Pan African Medical Journal*, 34(1).
- Chime, O. H., Ndibuagu, E. O., & Igweagu, C. P. (2018). Exploring HIV Self-Stigma In Enugu State Nigeria. *Journal of Experimental Research*, 6(4), 29–37.
- Chun, T.-W., Shawn Justement, J., Murray, D., Kim, C. J., Blazkova, J., Hallahan, C. W., Benko, E., Costiniuk, C. T., Kandel, G., Ostrowski, M., Kaul, R., Moir, S., Casazza, J. P., Koup, R. A., Kovacs, C., & Fauci, A. S. (2013). Effect of Antiretroviral Therapy on HIV Reservoirs in Elite Controllers. *The Journal of Infectious Diseases*, 208(9), 1443–1447. <https://doi.org/10.1093/infdis/jit306>
- Coffin, J., & Swanstrom, R. (2013). HIV Pathogenesis: Dynamics and Genetics of Viral Populations and Infected Cells. *Cold Spring Harbor Perspectives in Medicine*, 3(1), a012526–a012526. <https://doi.org/10.1101/cshperspect.a012526>
- Cohen, M. S., Smith, M. K., Muessig, K. E., Hallett, T. B., Powers, K. A., & Kashuba, A. D. (2013). Antiretroviral treatment of HIV-1 prevents transmission of HIV-1: where do

- we go from here? *The Lancet*, 382(9903), 1515–1524. [https://doi.org/10.1016/S0140-6736\(13\)61998-4](https://doi.org/10.1016/S0140-6736(13)61998-4)
- de Saxe Zerden, L., Lombardi, B. M., Fraser, M. W., Jones, A., & Rico, Y. G. (2018). Social work: Integral to interprofessional education and integrated practice. *Journal of Interprofessional Education & Practice*, 10, 67–75. <https://doi.org/10.1016/j.xjep.2017.12.011>
- Deeks, S. G., Lewin, S. R., & Havlir, D. V. (2013). The end of AIDS: HIV infection as a chronic disease. *The Lancet*, 382(9903), 1525–1533. [https://doi.org/10.1016/S0140-6736\(13\)61809-7](https://doi.org/10.1016/S0140-6736(13)61809-7)
- Dew, M. A., Becker, J. T., Sanchez, J., Caldararo, R., Lopez, O. L., Wess, J., Dorst, S. K., & Banks, G. (1997). Prevalence and predictors of depressive, anxiety and substance use disorders in HIV-infected and uninfected men: a longitudinal evaluation. *Psychological Medicine*, 27(2), 395–409. <https://doi.org/10.1017/S0033291796004552>
- Garcia, S. B., & Guzman, N. (2023). Acquired immune deficiency syndrome CD4+ count. *StatPearls*.
- Ilmaskal, R., Rahma, G., & Gusdiansyah, E. (2020). Years of potential life lost in HIV/AIDS patients and its determinant factor. *Research, Society and Development*, 9(11), e88491110742–e88491110742. <https://doi.org/https://doi.org/10.33448/rsd-v9i11.10742>
- Kessing, C. F., Nixon, C. C., Li, C., Tsai, P., Takata, H., Mousseau, G., Ho, P. T., Honeycutt, J. B., Fallahi, M., Trautmann, L., Garcia, J. V., & Valente, S. T. (2017). In Vivo Suppression of HIV Rebound by Didehydro-Cortistatin A, a “Block-and-Lock” Strategy for HIV-1 Treatment. *Cell Reports*, 21(3), 600–611. <https://doi.org/10.1016/j.celrep.2017.09.080>
- Kordy, K., Tobin, N. H., & Aldrovandi, G. M. (2019). HIV and SIV in Body Fluids: From Breast Milk to the Genitourinary Tract. *Current Immunology Reviews*, 15(1), 139–152. <https://doi.org/10.2174/1573395514666180605085313>
- Lyimo, R. A., Stutterheim, S. E., Hospers, H. J., de Glee, T., van der Ven, A., & de Bruin, M. (2014). Stigma, Disclosure, Coping, and Medication Adherence Among People Living with HIV/AIDS in Northern Tanzania. *AIDS Patient Care and STDs*, 28(2), 98–105. <https://doi.org/10.1089/apc.2013.0306>
- Ma, P. H. X., Chan, Z. C. Y., & Loke, A. Y. (2019). Self-Stigma Reduction Interventions for People Living with HIV/AIDS and Their Families: A Systematic Review. *AIDS and Behavior*, 23(3), 707–741. <https://doi.org/10.1007/s10461-018-2304-1>
- Menon, S. (2010). Early initiation of antiretroviral therapy and universal HIV testing in sub-Saharan Africa: Has WHO offered a milestone for HIV prevention? *Journal of Public Health Policy*, 31(4), 385–400. <https://doi.org/10.1057/jphp.2010.29>
- Mishra, S., Dwivedi, S. P., Dwivedi, N., & Singh, R. B. (2009). Immune Response and Possible Causes of CD4+T-cell Depletion in Human Immunodeficiency Virus (HIV) - 1 Infection. *The Open Nutraceuticals Journal*, 2(1), 46–51. <https://doi.org/10.2174/1876396000902010046>
- Moir, S., Chun, T.-W., & Fauci, A. S. (2011). Pathogenic Mechanisms of HIV Disease. *Annual Review of Pathology: Mechanisms of Disease*, 6(1), 223–248. <https://doi.org/10.1146/annurev-pathol-011110-130254>
- Parekh, B. S., Ou, C.-Y., Fonjungo, P. N., Kalou, M. B., Rottinghaus, E., Puren, A., Alexander, H., Hurlston Cox, M., & Nkengasong, J. N. (2018). Diagnosis of Human

- Immunodeficiency Virus Infection. *Clinical Microbiology Reviews*, 32(1).
<https://doi.org/10.1128/CMR.00064-18>
- Patel, V. L., Cytryn, K. N., Shortliffe, E. H., & Safran, C. (2000). The Collaborative Health Care Team: The Role of Individual and Group Expertise. *Teaching and Learning in Medicine*, 12(3), 117–132. https://doi.org/10.1207/S15328015TLM1203_2
- Pence, B. W. (2009). The impact of mental health and traumatic life experiences on antiretroviral treatment outcomes for people living with HIV/AIDS. *Journal of Antimicrobial Chemotherapy*, 63(4), 636–640. <https://doi.org/10.1093/jac/dkp006>
- Rasmussen, T. A., McMahon, J. H., Chang, J. J., Audsley, J., Rhodes, A., Tennakoon, S., Dantanarayana, A., Spelman, T., Schmidt, T., Kent, S. J., Morcilla, V., Palmer, S., Elliott, J. H., & Lewin, S. R. (2018). The effect of antiretroviral intensification with dolutegravir on residual virus replication in HIV-infected individuals: a randomised, placebo-controlled, double-blind trial. *The Lancet HIV*, 5(5), e221–e230.
[https://doi.org/10.1016/S2352-3018\(18\)30040-7](https://doi.org/10.1016/S2352-3018(18)30040-7)
- Remien, R. H., Berkman, A., Myer, L., Bastos, F. I., Kagee, A., & El-Sadr, W. M. (2008). Integrating HIV care and HIV prevention: legal, policy and programmatic recommendations. *AIDS*, 22(Suppl 2), S57–S65.
<https://doi.org/10.1097/01.aids.0000327437.13291.86>
- Remien, R. H., Stirratt, M. J., Nguyen, N., Robbins, R. N., Pala, A. N., & Mellins, C. A. (2019). Mental health and HIV/AIDS. *AIDS*, 33(9), 1411–1420.
<https://doi.org/10.1097/QAD.0000000000002227>
- Sabri, B., Greene, M. C., Du, S., Solomon, S. S., Srikrishnan, A. K., Mehta, S. H., & Lucas, G. M. (2023). Exploring multilevel determinants of co-occurring violence, HIV, mental health and substance use problems. *Journal of Ethnic & Cultural Diversity in Social Work*, 32(4), 210–222. <https://doi.org/10.1080/15313204.2021.1964119>
- Sandhu, A., & Samra, A. K. (2013). Opportunistic infections and disease implications in HIV/AIDS. *International Journal of Pharmaceutical Science Invention*, 2(5), 47–54.
- Singh, S. K., & Singh, S. K. (2018). human immunodeficiency virus (HIV) infection. *Diagnostics to Pathogenomics of Sexually Transmitted Infections*, 61–81.
- Soto, T. A., Bell, J., Pillen, M. B., & For The Hiv/aids Treatment Adherenc. (2004). Literature on integrated HIV care: a review. *AIDS Care*, 16(sup1), 43–55.
<https://doi.org/10.1080/09540120412331315295>
- Stanhope, V., & Straussner, S. L. A. (2017). *Social Work and Integrated Health Care: From Policy to Practice and Back*. Oxford University Press.
<https://books.google.co.id/books?id=yMQ2DwAAQBAJ>
- Tegger, M. K., Crane, H. M., Tapia, K. A., Uldall, K. K., Holte, S. E., & Kitahata, M. M. (2008). The Effect of Mental Illness, Substance Use, and Treatment for Depression on the Initiation of Highly Active Antiretroviral Therapy among HIV-Infected Individuals. *AIDS Patient Care and STDs*, 22(3), 233–243.
<https://doi.org/10.1089/apc.2007.0092>
- Vajpayee, M., & Mohan, T. (2011). Current practices in laboratory monitoring of HIV infection. *The Indian Journal of Medical Research*, 134(6), 801.
<https://doi.org/10.4103/0971-5916.92627>
- Vidya Vijayan, K. K., Karthigeyan, K. P., Tripathi, S. P., & Hanna, L. E. (2017). Pathophysiology of CD4+ T-Cell Depletion in HIV-1 and HIV-2 Infections. *Frontiers in Immunology*, 8. <https://doi.org/10.3389/fimmu.2017.00580>

- Vreeman, R. C., McCoy, B. M., & Lee, S. (2017). Mental health challenges among adolescents living with HIV. *Journal of the International AIDS Society*, 20(S3). <https://doi.org/10.7448/IAS.20.4.21497>
- Zelaya, C. E., Sivaram, S., Johnson, S. C., Srikrishnan, A. K., Suniti, S., & Celentano, D. D. (2012). Measurement of self, experienced, and perceived HIV/AIDS stigma using parallel scales in Chennai, India. *AIDS Care*, 24(7), 846–855. <https://doi.org/10.1080/09540121.2011.647674>
- Blank, M. B., Himelhoch, S., Walkup, J., & Eisenberg, M. M. (2013). Treatment Considerations for HIV-Infected Individuals with Severe Mental Illness. *Current HIV/AIDS Reports*, 10(4), 371–379. <https://doi.org/10.1007/s11904-013-0179-3>
- Bombard, Y., Baker, G. R., Orlando, E., Fancott, C., Bhatia, P., Casalino, S., Onate, K., Denis, J.-L., & Pomey, M.-P. (2018). Engaging patients to improve quality of care: a systematic review. *Implementation Science*, 13(1), 98. <https://doi.org/10.1186/s13012-018-0784-z>
- Browne, T. (2019). Social Work Roles and Healthcare Settings. In *Handbook of Health Social Work* (pp. 21–37). Wiley. <https://doi.org/10.1002/9781119420743.ch2>
- Burnette, M. L., Lucas, E., Ilgen, M., Frayne, S. M., Mayo, J., & Weitlauf, J. C. (2008). Prevalence and Health Correlates of Prostitution Among Patients Entering Treatment for Substance Use Disorders. *Archives of General Psychiatry*, 65(3), 337. <https://doi.org/10.1001/archpsyc.65.3.337>
- Carman, K. L., Dardess, P., Maurer, M., Sofaer, S., Adams, K., Bechtel, C., & Sweeney, J. (2013). Patient And Family Engagement: A Framework For Understanding The Elements And Developing Interventions And Policies. *Health Affairs*, 32(2), 223–231. <https://doi.org/10.1377/hlthaff.2012.1133>
- Cartwright, E. K., Spicer, L., Smith, S. A., Lee, D., Fast, R., Paganini, S., Lawson, B. O., Nega, M., Easley, K., Schmitz, J. E., Bosinger, S. E., Paiardini, M., Chahroudi, A., Vanderford, T. H., Estes, J. D., Lifson, J. D., Derdeyn, C. A., & Silvestri, G. (2016). CD8 + Lymphocytes Are Required for Maintaining Viral Suppression in SIV-Infected Macaques Treated with Short-Term Antiretroviral Therapy. *Immunity*, 45(3), 656–668. <https://doi.org/10.1016/j.immuni.2016.08.018>
- Chime, O. H., Arinze-Onyia, S. U., & Ossai, E. N. (2019). Examining the effect of peer-support on self-stigma among persons living with HIV/AIDS. *Pan African Medical Journal*, 34(1).
- Chime, O. H., Ndibuagu, E. O., & Igweagu, C. P. (2018). Exploring HIV Self-Stigma In Enugu State Nigeria. *Journal of Experimental Research*, 6(4), 29–37.
- Chun, T.-W., Shawn Justement, J., Murray, D., Kim, C. J., Blazkova, J., Hallahan, C. W., Benko, E., Costiniuk, C. T., Kandel, G., Ostrowski, M., Kaul, R., Moir, S., Casazza, J. P., Koup, R. A., Kovacs, C., & Fauci, A. S. (2013). Effect of Antiretroviral Therapy on HIV Reservoirs in Elite Controllers. *The Journal of Infectious Diseases*, 208(9), 1443–1447. <https://doi.org/10.1093/infdis/jit306>
- Coffin, J., & Swanstrom, R. (2013). HIV Pathogenesis: Dynamics and Genetics of Viral Populations and Infected Cells. *Cold Spring Harbor Perspectives in Medicine*, 3(1), a012526–a012526. <https://doi.org/10.1101/cshperspect.a012526>
- Cohen, M. S., Smith, M. K., Muessig, K. E., Hallett, T. B., Powers, K. A., & Kashuba, A. D. (2013). Antiretroviral treatment of HIV-1 prevents transmission of HIV-1: where do we go from here? *The Lancet*, 382(9903), 1515–1524. [https://doi.org/10.1016/S0140-6736\(13\)61998-4](https://doi.org/10.1016/S0140-6736(13)61998-4)

- de Saxe Zerden, L., Lombardi, B. M., Fraser, M. W., Jones, A., & Rico, Y. G. (2018). Social work: Integral to interprofessional education and integrated practice. *Journal of Interprofessional Education & Practice*, 10, 67–75. <https://doi.org/10.1016/j.xjep.2017.12.011>
- Deeks, S. G., Lewin, S. R., & Havlir, D. V. (2013). The end of AIDS: HIV infection as a chronic disease. *The Lancet*, 382(9903), 1525–1533. [https://doi.org/10.1016/S0140-6736\(13\)61809-7](https://doi.org/10.1016/S0140-6736(13)61809-7)
- Dew, M. A., Becker, J. T., Sanchez, J., Caldararo, R., Lopez, O. L., Wess, J., Dorst, S. K., & Banks, G. (1997). Prevalence and predictors of depressive, anxiety and substance use disorders in HIV-infected and uninfected men: a longitudinal evaluation. *Psychological Medicine*, 27(2), 395–409. <https://doi.org/10.1017/S0033291796004552>
- Garcia, S. B., & Guzman, N. (2023). Acquired immune deficiency syndrome CD4+ count. *StatPearls*.
- Kessing, C. F., Nixon, C. C., Li, C., Tsai, P., Takata, H., Mousseau, G., Ho, P. T., Honeycutt, J. B., Fallahi, M., Trautmann, L., Garcia, J. V., & Valente, S. T. (2017). In Vivo Suppression of HIV Rebound by Didehydro-Cortistatin A, a “Block-and-Lock” Strategy for HIV-1 Treatment. *Cell Reports*, 21(3), 600–611. <https://doi.org/10.1016/j.celrep.2017.09.080>
- Kordy, K., Tobin, N. H., & Aldrovandi, G. M. (2019). HIV and SIV in Body Fluids: From Breast Milk to the Genitourinary Tract. *Current Immunology Reviews*, 15(1), 139–152. <https://doi.org/10.2174/1573395514666180605085313>
- Lyimo, R. A., Stutterheim, S. E., Hospers, H. J., de Glee, T., van der Ven, A., & de Bruin, M. (2014). Stigma, Disclosure, Coping, and Medication Adherence Among People Living with HIV/AIDS in Northern Tanzania. *AIDS Patient Care and STDs*, 28(2), 98–105. <https://doi.org/10.1089/apc.2013.0306>
- Ma, P. H. X., Chan, Z. C. Y., & Loke, A. Y. (2019). Self-Stigma Reduction Interventions for People Living with HIV/AIDS and Their Families: A Systematic Review. *AIDS and Behavior*, 23(3), 707–741. <https://doi.org/10.1007/s10461-018-2304-1>
- Menon, S. (2010). Early initiation of antiretroviral therapy and universal HIV testing in sub-Saharan Africa: Has WHO offered a milestone for HIV prevention? *Journal of Public Health Policy*, 31(4), 385–400. <https://doi.org/10.1057/jphp.2010.29>
- Mishra, S., Dwivedi, S. P., Dwivedi, N., & Singh, R. B. (2009). Immune Response and Possible Causes of CD4+T-cell Depletion in Human Immunodeficiency Virus (HIV) - 1 Infection. *The Open Nutraceuticals Journal*, 2(1), 46–51. <https://doi.org/10.2174/1876396000902010046>
- Moir, S., Chun, T.-W., & Fauci, A. S. (2011). Pathogenic Mechanisms of HIV Disease. *Annual Review of Pathology: Mechanisms of Disease*, 6(1), 223–248. <https://doi.org/10.1146/annurev-pathol-011110-130254>
- Parekh, B. S., Ou, C.-Y., Fonjungo, P. N., Kalou, M. B., Rottinghaus, E., Puren, A., Alexander, H., Hurlston Cox, M., & Nkengasong, J. N. (2018). Diagnosis of Human Immunodeficiency Virus Infection. *Clinical Microbiology Reviews*, 32(1). <https://doi.org/10.1128/CMR.00064-18>
- Patel, V. L., Cytryn, K. N., Shortliffe, E. H., & Safran, C. (2000). The Collaborative Health Care Team: The Role of Individual and Group Expertise. *Teaching and Learning in Medicine*, 12(3), 117–132. https://doi.org/10.1207/S15328015TLM1203_2

- Pence, B. W. (2009). The impact of mental health and traumatic life experiences on antiretroviral treatment outcomes for people living with HIV/AIDS. *Journal of Antimicrobial Chemotherapy*, 63(4), 636–640. <https://doi.org/10.1093/jac/dkp006>
- Rasmussen, T. A., McMahon, J. H., Chang, J. J., Audsley, J., Rhodes, A., Tennakoon, S., Dantanarayana, A., Spelman, T., Schmidt, T., Kent, S. J., Morcilla, V., Palmer, S., Elliott, J. H., & Lewin, S. R. (2018). The effect of antiretroviral intensification with dolutegravir on residual virus replication in HIV-infected individuals: a randomised, placebo-controlled, double-blind trial. *The Lancet HIV*, 5(5), e221–e230. [https://doi.org/10.1016/S2352-3018\(18\)30040-7](https://doi.org/10.1016/S2352-3018(18)30040-7)
- Remien, R. H., Berkman, A., Myer, L., Bastos, F. I., Kagee, A., & El-Sadr, W. M. (2008). Integrating HIV care and HIV prevention: legal, policy and programmatic recommendations. *AIDS*, 22(Suppl 2), S57–S65. <https://doi.org/10.1097/01.aids.0000327437.13291.86>
- Remien, R. H., Stirratt, M. J., Nguyen, N., Robbins, R. N., Pala, A. N., & Mellins, C. A. (2019). Mental health and HIV/AIDS. *AIDS*, 33(9), 1411–1420. <https://doi.org/10.1097/QAD.0000000000002227>
- Sabri, B., Greene, M. C., Du, S., Solomon, S. S., Srikrishnan, A. K., Mehta, S. H., & Lucas, G. M. (2023). Exploring multilevel determinants of co-occurring violence, HIV, mental health and substance use problems. *Journal of Ethnic & Cultural Diversity in Social Work*, 32(4), 210–222. <https://doi.org/10.1080/15313204.2021.1964119>
- Sandhu, A., & Samra, A. K. (2013). Opportunistic infections and disease implications in HIV/AIDS. *International Journal of Pharmaceutical Science Invention*, 2(5), 47–54.
- Singh, S. K., & Singh, S. K. (2018). human immunodeficiency virus (HIV) infection. *Diagnostics to Pathogenomics of Sexually Transmitted Infections*, 61–81.
- Soto, T. A., Bell, J., Pillen, M. B., & For The Hiv/aids Treatment Adherenc. (2004). Literature on integrated HIV care: a review. *AIDS Care*, 16(sup1), 43–55. <https://doi.org/10.1080/09540120412331315295>
- Stanhope, V., & Straussner, S. L. A. (2017). *Social Work and Integrated Health Care: From Policy to Practice and Back*. Oxford University Press. <https://books.google.co.id/books?id=yMQ2DwAAQBAJ>
- Tegger, M. K., Crane, H. M., Tapia, K. A., Uldall, K. K., Holte, S. E., & Kitahata, M. M. (2008). The Effect of Mental Illness, Substance Use, and Treatment for Depression on the Initiation of Highly Active Antiretroviral Therapy among HIV-Infected Individuals. *AIDS Patient Care and STDs*, 22(3), 233–243. <https://doi.org/10.1089/apc.2007.0092>
- Vajpayee, M., & Mohan, T. (2011). Current practices in laboratory monitoring of HIV infection. *The Indian Journal of Medical Research*, 134(6), 801. <https://doi.org/10.4103/0971-5916.92627>
- Vidya Vijayan, K. K., Karthigeyan, K. P., Tripathi, S. P., & Hanna, L. E. (2017). Pathophysiology of CD4+ T-Cell Depletion in HIV-1 and HIV-2 Infections. *Frontiers in Immunology*, 8. <https://doi.org/10.3389/fimmu.2017.00580>
- Vreeman, R. C., McCoy, B. M., & Lee, S. (2017). Mental health challenges among adolescents living with HIV. *Journal of the International AIDS Society*, 20(S3). <https://doi.org/10.7448/IAS.20.4.21497>
- Zelaya, C. E., Sivaram, S., Johnson, S. C., Srikrishnan, A. K., Suniti, S., & Celentano, D. D.

(2012). Measurement of self, experienced, and perceived HIV/AIDS stigma using parallel scales in Chennai, India. *AIDS Care*, 24(7), 846–855. <https://doi.org/10.1080/09540121.2011.647674>