



ISSN CETAK : 2621-9530

ISSN ONLINE: 2621-9514

JOURNAL OF BORNEO HOLISTIC HEALTH



**FAKULTAS ILMU KESEHATAN
UNIVERSITAS BORNEO TARAKAN**



Home > About the Journal > **Editorial Team**

Editorial Team

1. Editor In Chief

Hendy Lesmana, Jurusan Keperawatan Universitas Borneo Tarakan, Indonesia

2. Editor

Maria Imaculata Imaculata Ose, Jurusan Keperawatan, Fakultas Ilmu Kesehatan, Universitas Borneo Tarakan, Indonesia

Donny Tri Wahyudi, Universitas Borneo Tarakan, Indonesia

Andan Firmansyah

Aisyah dzil Kamalah, Universitas Muhammadiyah Pekajangan Pekalongan, Indonesia

Ferry Efendi, Scopus ID : 55301269100 Sinta ID : 256055 Orcid : <https://orcid.org/0000-0001-7988-9196> Fakultas Keperawatan Universitas Airlangga, Indonesia

3. Section Editor

Yogho Prastyo, Universitas Borneo Tarakan, Indonesia

Journal Of Borneo Holistic Health Indexed by:

Google Scholar

 GARUDA
KARSA RUJUKAN DIGITAL

 **sinta**
S4
Science and Technology Index

 Dimensions

JOURNAL OF BORNEO HOLISTIC HEALTH

FAKULTAS ILMU KESEHATAN UNIVERSITAS BORNEO TARAKAN

JL. AMAL LAMA, NOMOR 1, KELURAHAN PANTAI AMAL, KOTA TARAKAN 77123

Phone : 085246694869

Email : borticalth@gmail.com

Laman : jurnal.borneo.ac.id/index.php/borticalth



JOURNAL OF BORNEO HOLISTIC HEALTH disebarluaskan di bawah Lisensi Creative Commons Atribusi 4.0 Internasional.

toto slot
slot gacor

[href="https://www.cristianievangeli.com/"](https://www.cristianievangeli.com/)>Sunda787

USER

You are logged in as...

dickyns

- > My Journals
- > My Profile
- > Log Out

CERTIFICATE



ADDITIONAL MENU

FOCUS AND SCOPE

EDITORIAL TEAM

AUTHOR GUIDELINES

REVIEWERS

PUBLICATION ETHICS

AUTHOR FEE

CONTACT



RECOMMENDED TOOL



MEMBER OF



PERJANJIAN KERJASAMA





Home > About the Journal > **People**

People

Reviewer

Zaqqi Ubaidillah, Indonesia

Najihah Najihah, Jurusan Keperawatan, Universitas Borneo Tarakan, Indonesia

Titin MINARTI M.Keb MINARTI, Politeknik Baubau, Indonesia

Ginanjari Sasmito Adi, University of Muhammadiyah

Mrs. Yuldensia Avelina, Universitas Nusa Nipa, Indonesia

Dicky Endrian Kurniawan, Universitas Jember, Indonesia

Moh. Ubaidillah Faqih, Institut Ilmu Kesehatan Nahdlatul Ulama Tuban

Putra Agina Widyaswara Suwaryo, Program Studi Keperawatan, Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Gombong, Jawa Tengah, Indonesia, 54412, Indonesia

Oda Debora, Indonesia

made Ns.Made - Martini,S.Kep.M.Kep, STIKes Buleleng, Indonesia

Suryanto Suryanto, Scopus ID : 57189357111 sinta ID : 6150587 Orcid : <https://orcid.org/0000-0003-2799-4220> Keperawatan Fakultas Kedokteran Universitas Brawijaya, Indonesia

wf Willa Folona, Poltekkes Kemenkes Jakarta 3, Indonesia

Sulidah Sulidah, Universitas Borneo Tarakan, Indonesia

Alfianur Alfianur, Indonesia

Journal Of Borneo Holistic Health Indexed by:



JOURNAL OF BORNEO HOLISTIC HEALTH

FAKULTAS ILMU KESEHATAN UNIVERSITAS BORNEO TARAKAN

JL. AMAL LAMA, NOMOR 1, KELURAHAN PANTAI AMAL, KOTA TARAKAN 77123

Phone : 085246694869

Email : borticalth@gmail.com

Laman : jurnal.borneo.ac.id/index.php/borticalth



JOURNAL OF BORNEO HOLISTIC HEALTH disebarluaskan di bawah Lisensi Creative Commons Atribusi 4.0 Internasional.

toto slot
slot gacor

[href="https://www.cristianievangeli.com/"](https://www.cristianievangeli.com/)>Sunda787

USER

You are logged in as...

dickyns

- > My Journals
- > My Profile
- > Log Out

CERTIFICATE



ADDITIONAL MENU

FOCUS AND SCOPE

EDITORIAL TEAM

AUTHOR GUIDELINES

REVIEWERS

PUBLICATION ETHICS

AUTHOR FEE

CONTACT



RECOMMENDED TOOL



MEMBER OF



PERJANJIAN KERJASAMA




[Home](#) > [Archives](#) > **Vol 8, No 1 (2025)**

Vol 8, No 1 (2025)

JOURNAL OF BORNEO HOLISTIC HEALTH : In progress

DOI: <https://doi.org/10.35334/bortcalth.v8i1>

Table of Contents

Articles

Social Support Sebagai Faktor Prediktor Perilaku Periksa Payudara Sendiri (SADARI) Pada Mahasiswi Kesehatan PDF (BAHASA INDONESIA) 1-8

Ida Ayu Ningrat Pangruating Diyu, Putu Noviana Sagitarini, Ni Komang Tri Agustini, Anak Agung Istri Wulan Krisnandari, Made Ayu Yulia Raswati Teja

Strategi Koping Pada Wanita Usia Produktif Dalam Meningkatkan Kesehatan Jiwa PDF (BAHASA INDONESIA) 9-14

Suhermi Suhermi, Nia Karuniawati, A.Jasmine Aqila P., Vivi Jumini

Dukungan Keluarga Terhadap Perceived Behavioral Control Pola Hidup Sehat Lansia PDF (BAHASA INDONESIA) 15-21

Donny Tri Wahyudi

Stres Terhadap Siklus Menstruasi Pada Mahasiswi: Studi Korelasi PDF (BAHASA INDONESIA) 22-33

Kristofora Diwang Puteri W

Unmet Basic Needs among People Living with HIV AIDS Based on Virginia Henderson's Theory: A Traditional Literature Review PDF (ENGLISH) 34-48

Dicky Endrian Kurniawan, Ahmad Rifai, Anisah Ardiana, Retno Purwandari, Alfid Tri Afandi, Erik Kusuma

Journal Of Borneo Holistic Health Indexed by:

JOURNAL OF BORNEO HOLISTIC HEALTH

FAKULTAS ILMU KESEHATAN UNIVERSITAS BORNEO TARAKAN

JL. AMAL LAMA, NOMOR 1, KELURAHAN PANTAI AMAL, KOTA TARAKAN 77123

Phone : 085246694869

Email : bortcalth@gmail.com

Laman : jurnal.borneo.ac.id/index.php/bortcalth



JOURNAL OF BORNEO HOLISTIC HEALTH disebarluaskan di bawah Lisensi Creative Commons Atribusi 4.0 Internasional.

toto slot
slot gacor

href="https://www.cristianievangelici.com/">Sunda787

USER

You are logged in as...

dickyns

- » [My Journals](#)
- » [My Profile](#)
- » [Log Out](#)

CERTIFICATE



ADDITIONAL MENU

[FOCUS AND SCOPE](#)

[EDITORIAL TEAM](#)

[AUTHOR GUIDELINES](#)

[REVIEWERS](#)

[PUBLICATION ETHICS](#)

[AUTHOR FEE](#)

[CONTACT](#)



RECOMMENDED TOOL

MENDELEY

Zotero

EndNote

grammarly

MEMBER OF

iJIR RELAWAN
JURNAL INDONESIA

PERJANJIAN KERJASAMA



Unmet Basic Needs among People Living with HIV AIDS Based on Virginia Henderson's Theory: A Traditional Literature Review

Dicky Endrian Kurniawan^{1*}, Ahmad Rifai², Anisah Ardiana³, Retno Purwandari⁴, Alfid Tri Afandi⁵, Erik Kusuma⁶

¹⁻⁵Center of Fundamental Nursing Studies (CFUNS), Faculty of Nursing, Universitas Jember, Indonesia

⁶Diploma of Nursing Program, Faculty of Nursing, Universitas Jember, Indonesia

*Email: dickyendrian@unej.ac.id (*Correspondent)

History Artikel

Submitted: March, 19, 2025

Received: June 08, 2025

Accepted: June 10, 2025

Published: June 28, 2025

Abstrak

Meskipun pengobatan antiretroviral (ARV) telah meningkatkan harapan hidup dan kualitas hidup orang dengan HIV/AIDS (ODHA), berbagai tantangan dalam memenuhi kebutuhan dasar manusia masih dihadapi oleh mereka. Teori keperawatan Virginia Henderson dapat digunakan sebagai kerangka kerja untuk memahami kebutuhan dasar ODHA secara komprehensif. Penelitian ini bertujuan untuk mengidentifikasi kebutuhan dasar ODHA secara holistik, dengan mempertimbangkan dimensi fisiologis, psikologis, sosial, dan spiritual. Tinjauan literatur tradisional digunakan dalam penelitian ini. Metode pencarian yang digunakan dalam penelitian ini adalah database elektronik seperti Google Scholar, ProQuest, dan PubMed. Pencarian artikel menggunakan kata kunci sesuai dengan pertanyaan penelitian. Analisis data deskriptif dalam penelitian ini digambarkan dalam tabel. ODHA menghadapi tantangan yang signifikan dalam memenuhi kebutuhan dasar, seperti yang diuraikan dalam Teori Kebutuhan Virginia Henderson, yang mencakup komponen fisiologis, psikologis, sosial, dan moral-spiritual. Kekurangan nutrisi, ketidakamanan air dan sanitasi, kualitas tidur yang buruk, stigma, ketidakstabilan ekonomi, dan dukungan sosial yang terbatas, semuanya berkontribusi pada penurunan kualitas hidup. Intervensi keperawatan utama mencakup asesmen pasien secara komprehensif, manajemen nutrisi, dukungan psikososial, pendidikan kesehatan, serta advokasi pada tingkat individu maupun kebijakan untuk meningkatkan kesejahteraan secara menyeluruh. Pendekatan multidisipliner—yang mengintegrasikan aspek medis, psikologis, sosial, dan spiritual—sangat penting dalam memberdayakan ODHA menuju kemandirian, peningkatan kualitas hidup, dan ketangguhan dalam menghadapi tantangan HIV/AIDS.

Kata kunci : HIV AIDS; kebutuhan dasar manusia; keperawatan; teori kebutuhan; Virginia Henderson

Abstract

Although advances in antiretroviral (ARV) treatment have improved life expectancy and quality of life for people living with HIV/AIDS (PLWHA), they still face various challenges in fulfilling their basic human needs. Virginia Henderson's nursing theory can be used as a framework to comprehensively understand the basic needs of PLWHA. This study aimed to holistically identify and analyze the basic needs of PLWHA, considering physiological, psychological, social, and spiritual dimensions. A traditional literature review was used in this study. The search method used in this research is electronic databases such as Google Scholar, ProQuest, and PubMed. The article search used keywords according to the research questions. This study's descriptive data analysis described the mapping tables' findings. People living with HIV/AIDS (PLWHA) face significant challenges in meeting their fundamental needs, as outlined in Virginia Henderson's Need Theory, which encompasses physiological, psychological, social, and spiritual components. Nutritional deficiencies, water and sanitation insecurity, poor sleep quality, stigma, economic instability, and limited social support all contribute to poor health outcomes and reduced quality of life. Key nursing interventions encompass comprehensive patient assessment, nutritional management, psychosocial support, health education, and advocacy at both individual and policy levels to enhance overall well-being. A multidisciplinary approach—integrating medical,



psychological, social, and spiritual care—is essential for empowering PLWHA toward independence, enhanced quality of life, and resilience in the face of HIV/AIDS.

Keywords: *HIV/AIDS; Human basic need; Needs theory; Nursing Virginia Henderson.*

1. Introduction

HIV/AIDS is one of the global health challenges that continues to grow today. Since it was first discovered in the early 1980s, HIV/AIDS has spread throughout the world and affected millions of individuals from different walks of life (Parker, 2023). According to UNAIDS data for 2024, approximately 39.9 million people in the world are living with HIV, with the number of new infections reaching 1.3 million per year (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2024). In Indonesia, the number of HIV/AIDS cases is also high, estimated at 503.261 in 2024, with significant prevalence in some regions (Ministry of Health of Indonesia, 2024). Although advances in antiretroviral (ARV) treatment have improved life expectancy and quality of life for people living with HIV/AIDS (PLWHA) (Ghiasvand et al., 2019), they still face various challenges in fulfilling their basic human needs (Amirah et al., 2024; Rimbing & Triwahyuni, 2019). One of the main issues overlooked is the holistic fulfillment of PLWHA's basic needs. Holistic healthcare models have gained increasing recognition for addressing complex patient needs, there remains a critical gap in their adaptation to the unique biopsychosocial and spiritual challenges faced by PLWHA.

Basic needs include not only physiological aspects but also psychological, social, and spiritual needs (Shafiq & Uzma, 2024). These needs are important for PLWHA due

to their vulnerable medical condition and the social stigma that often accompanies HIV-positive status (Kimera et al., 2020; Sukarja et al., 2017). Stigma and discrimination against PLWHA can hinder their access to healthcare, education, employment, and even social support from family and community (Fauk et al., 2021). This has a negative impact on their quality of life and can worsen their overall health condition (Turan et al., 2017). Therefore, a holistic approach to fulfilling the basic needs of PLWHA is key to improving their well-being.

Virginia Henderson's nursing theory can be used as a framework to comprehensively understand the basic needs of PLWHA. Henderson identifies 14 components of basic human needs (Alligood, 2014), which include physiological (e.g., normal breathing, adequate eating and drinking, elimination, sleep, and physical activity), psychological (communication, emotional expression, and spirituality), and social (interaction with others and participation in the community) aspects (Shafiq & Uzma, 2024). In PLWHA, this theory can help nurses design interventions that not only focus on the medical aspects of treatment but also support the independence of PLWHA in meeting basic needs.

Despite this, there is a limited holistic understanding of the basic needs of PLWHA. By applying the principles of Virginia Henderson's theory, this study seeks to ensure that PLWHA receive optimal medical care and are supported to achieve independence and overall well-being. It was implied for nursing practice

by offering a holistic, theory-driven foundation for delivering comprehensive care. Therefore, this study aims to holistically identify and analyze the basic needs of PLWHA, considering physiological, psychological, social, and spiritual dimensions. The results of this study are expected to provide practical recommendations for nurses in developing evidence-based care to meet the basic needs of PLWHA.

Henderson's Needs Theory

Virginia Henderson's concept of basic human needs has become a cornerstone in nursing theory and practice, offering a comprehensive framework for understanding patient care. Her theory, often referred to as "Needs Theory", emphasizes that the nurse's primary role is to assist individuals in achieving independence in meeting their basic needs. Henderson identified 14 basic needs (Alligood, 2014), which include physiological, psychological, moral-spiritual, and social components (Shafiq & Uzma, 2024). These needs are essential for survival and holistic human health and well-being. Henderson's work is often championed for its simplicity and practicality, providing a clear roadmap for nurses to prioritize patient care interventions. Henderson describes the nurse's role as substitutive, supplementary, and complementary to help the patient become as independent as possible (Ahtisham & Jacoline, 2015).

2. Method

A traditional literature review was used in this study. A traditional literature review summarizes various publications or research on a particular topic, and the author examines the research results that focus on a topic, issue, or concept to provide an overview of the issue (Munn et al., 2018). The question in this study is, "What are the unmet basic needs among people living with HIV/AIDS (PLWHA) based on Virginia Henderson's theory?"

The search method used in this research is electronic databases such as Google Scholar, ProQuest, PubMed, and Scopus. The article search used keywords according to the research questions, following each component of the PLWHA needs. The keywords used in the literature search were based on each basic need of Henderson's Theory. The articles used in this study were published within the last 5 years, from 2020 to 2024, in both abstract and full text. All articles in English were selected. All articles with full identifiers were retrieved for the traditional literature review. This study's descriptive data analysis described the mapping tables' findings (Table 1), directly included in each need's components.

3. Result

People living with HIV/AIDS (PLWHA) often experience significant challenges in meeting their basic needs, as outlined in Virginia Henderson's Need Theory, which emphasizes fundamental human requirements.

Table 1. Unmet Basic Needs among HIV/AIDS Patients Based on Henderson's Theory

Component	Basic Need(s)	Problem Related to Basic Need(s)
Physiological components	Maintain normal breathing patterns	Impaired gas exchange; risk of lung infection, such as pulmonary tuberculosis, <i>Pneumocystis</i> Pneumonia, COVID-19, <i>Bordetella bronchiseptica</i> pneumonia; high-risk of exposure to air pollutant (Byanova et al., 2023; Gujju et al., 2021; Hirai et al., 2023; Padhi et al., 2024; Udoakang et al., 2023; Ueckermann et al., 2022)
	Ensure adequate intake of food and fluids	Food and water insecurity; lack of diversified food; overweight/obesity; undernutrition; dyslipidemia; reductions in total cholesterol (TC), triglycerides (TG), fasting plasma glucose (FPG), systolic and diastolic blood pressures (SBP and DBP, respectively), waist circumference (WC), body mass index (BMI), increases in high-density lipoproteins (HDL); iron deficiency, (Aparecida Silveira et al., 2020; Khatri et al., 2020; Nagata et al., 2022; Ogunbajo et al., 2023; Seid et al., 2023)
	Eliminate body waste appropriately.	Diarrhea, intestinal infection, urinary tract infection (Abdullahi et al., 2022; Getachew et al., 2021)
	Engage in movement and maintain proper body postures.	Decreased activity, lower confidence leaving home, and less energy; frailty; lack of motivation to exercise; work/activity difficulty due to physical health (Byanova et al., 2023; Nelson et al., 2022; Sahel-Gozin et al., 2023; Wanigatunga et al., 2023)
	Obtain sufficient sleep and rest.	Sleep disturbance, disruption of quality and quantity of sleep (Abdollahpour et al., 2024; Melese et al., 2024; Rogers et al., 2020)
	Suitable clothing	Activity difficulty due to physical health (Wanigatunga et al., 2023)
	Regulate body temperature.	Hypothermia and hyperthermia due to uncontrolled disease (Farouji et al., 2021; Roshani Patel et al., 2022)
	Maintain cleanliness and hygiene, protecting the skin.	Oral candidiasis due to oral hygiene; skin disease; skin infection (Ambe et al., 2020; Chimbetete et al., 2023; Pinto-Almazán et al., 2023; Venanzi Rullo et al., 2021)
	Avoid hazards in the environment and prevent harm to oneself and others.	History of homelessness, and history of incarceration; high antimicrobial resistance; hepatitis B, hepatitis C virus, and syphilis infection; noise-induced hearing loss; self-injury and suicide; violence (Chavez et al., 2023; Huang et al., 2024; Khoza-Shangase, 2020; Lubega et al., 2023; Nguyen et al., 2023; Ogunbajo et al., 2023; Yang et al., 2024)
Psychological Aspects	Effectively communicate emotions, needs, fears, or opinions to others.	Status disclosure; need of mindfulness; anxiety disorder; depressive disorder and neurocognitive disorder; stigma and discrimination; unmet family planning; frustration from stigma; being devalued, experiencing fear, experiencing injustices, feeling lonely, lacking future perspectives

Component	Basic Need(s)	Problem Related to Basic Need(s)
		(Abdollahpour et al., 2024; Desta et al., 2024; Goodkin et al., 2023; Ji et al., 2024; Kimera et al., 2020; Lungu & Chewe, 2024; Peng et al., 2022; Sahel-Gozin et al., 2023; Senyurek et al., 2021)
	Engage in learning, curiosity-driven activities.	Vulnerable in schools; miss school days; financial problems and lack motivation in education; experiencing injustices (Kimera et al., 2020; Martin et al., 2022; P. Zinyemba et al., 2020)
Spiritual and Moral Components	Participate in worship or spiritual practices according to personal faith.	Decision of medications because of miracle; level of spiritual practice (Andrianto et al., 2021; Leal et al., 2022)
Social Needs	Engage in work that provides a sense of accomplishment.	Failure to protect confidentiality; relationship change; stigma and discrimination (Senyurek et al., 2021; Twinomugisha et al., 2020)
	Engage in a variety of recreational activities and leisure activities.	Health issues (fatigue and pain) (Song et al., 2024)

4. Discussion

People living with HIV/AIDS (PLWHA) often experience significant challenges in meeting their basic needs, as outlined in Virginia Henderson's Need Theory, which emphasizes fundamental human requirements. Henderson identified 14 basic needs, which include physiological, psychological, moral-spiritual, and social components (Shafiq & Uzma, 2024). Research highlights that these needs are frequently unmet among PLWHA, negatively impacting their overall health, quality of life, and treatment adherence.

Physiological components

PLWHAs often face significant challenges in meeting their basic physiological needs. One of the most pressing concerns is nutritional deficiencies and food insecurity. Many individuals with HIV/AIDS struggle to access adequate nutrition, which is essential for maintaining immune function and responding effectively to antiretroviral therapy (ART). Research by Aparecida

Silveira et al. (2020) highlights the importance of proper nutrition in managing metabolic complications associated with ART, such as dyslipidemia and glucose imbalances. Similarly, studies by Seid et al. (2023) and Khatri et al. (2020) emphasize the high prevalence of malnutrition among HIV-positive individuals, particularly in low-resource settings, where food insecurity exacerbates undernutrition and weakens the body's ability to fight infections.

In addition to nutritional concerns, water and sanitation insecurity remain significant issues for PLWHA. A study by Nagata et al. (2022) found that water insecurity is closely linked to poor viral suppression and increased susceptibility to opportunistic infections. Lack of access to clean water and proper sanitation increases the risk of gastrointestinal infections, dehydration, and complications related to ART, making it difficult for individuals to maintain their health. Similarly, respiratory health risks are a major concern among HIV-positive individuals. Research by Lubega et al.

(2023) highlights the prevalence of antibiotic-resistant respiratory infections in HIV patients, particularly in regions with poor air quality and limited healthcare access. Furthermore, Ueckermann et al. (2022) examined the lung microbiome of HIV patients with tuberculosis and found that environmental and physiological factors significantly compromise respiratory health, leading to higher morbidity rates.

Another critical issue affecting PLWHA is poor sleep quality and inadequate rest, which can worsen both physical and mental health outcomes. Melese et al. (2024) found that sleep disturbances are common among HIV/AIDS patients, leading to increased stress, fatigue, and reduced overall quality of life. Rogers et al. (2020) further established a connection between poor sleep and depression, showing that individuals who experience chronic sleep deprivation are more likely to suffer from psychological distress and decreased treatment adherence. These findings suggest that addressing sleep quality should be an integral part of HIV/AIDS care.

Beyond these direct physiological needs, unmet social and economic needs also worsen health outcomes. Ogunbajo et al. (2023) found that financial insecurity and lack of stable housing led to poor ART adherence and increased risk of disease progression. Additionally, Nelson et al. (2022) identified a link between musculoskeletal frailty and inadequate physical activity, emphasizing the need for comprehensive nutrition and exercise interventions. Together, these findings underscore the importance of a holistic approach to HIV/AIDS care that prioritizes not only medical treatment but also essential physiological and environmental factors. Addressing these unmet basic

needs is crucial for improving the overall health and well-being of individuals living with HIV/AIDS.

Psychological Aspects

PLWHA often experiences significant psychological distress due to stigma, discrimination, and socio-economic challenges. Ji et al. (2024) found that anxiety disorders are highly prevalent among PLWHA, highlighting the impact of uncertainty about health status, fear of social rejection, and economic instability. Similarly, Goodkin et al. (2023) emphasized the strong link between HIV, depression, and neurocognitive disorders, suggesting that the chronic nature of the disease, combined with social and financial burdens, contributes to mental health deterioration. Desta et al. (2024) further reinforced this by demonstrating a direct correlation between HIV-related stigma and depression, where individuals who experience discrimination are more likely to develop psychological distress, affecting their overall well-being.

Stigma remains a major barrier to PLWHA's psychological well-being. Kimera et al. (2020) explored the lived experiences of youth in Uganda, revealing that HIV-related stigma leads to social isolation, emotional distress, and diminished self-esteem. This stigma is not limited to peer interactions but extends to educational settings, as seen in Martin et al. (2022), who reviewed interventions aimed at reducing HIV-related stigma among teachers. Their findings suggest that while stigma reduction programs improve the psychological health of PLWHA, societal attitudes continue to be a significant challenge.

Social Needs

Beyond stigma, unmet social and economic needs exacerbate psychological distress among PLWHA. Lungu and Chew (2024) highlighted that women living with HIV in Zambia face high levels of anxiety due to the lack of access to family planning services, raising concerns about vertical transmission and future security. Additionally, Sahel-Gozin et al. (2023) found that many women living with HIV struggle to engage in physical activities due to low self-confidence and societal stigma, leading to increased emotional distress and a diminished sense of well-being. Furthermore, Peng et al. (2022) emphasized the psychological burden of HIV disclosure, noting that many individuals fear rejection or violence from their sexual partners, which leads to increased anxiety and stress. Lastly, the economic impact of HIV/AIDS affects educational attainment, as P. Zinyemba et al. (2020) discussed how children affected by HIV/AIDS often struggle to access education, leading to long-term psychological and socio-economic disadvantages.

These studies collectively highlight that the psychological well-being of PLWHA is deeply influenced by stigma, economic insecurity, social exclusion, and unmet healthcare needs. Addressing these challenges requires a holistic approach that integrates psychological support into HIV care, reduces stigma, and provides social and economic empowerment programs to enhance the overall quality of life for PLWHA.

Spiritual and Moral Components

In spiritual and moral components, religious and spiritual practices play a significant role in the lives of people living with HIV/AIDS, influencing their coping

mechanisms, mental well-being, and treatment adherence. Andrianto et al. (2021) explore how religious involvement provides emotional support, reduces psychological distress, and helps patients find meaning in their illness. Many individuals turn to prayer, meditation, and religious gatherings as sources of strength, fostering resilience in the face of stigma and uncertainty. However, the study also highlights potential challenges, particularly when religious beliefs conflict with medical treatment. Some patients may prioritize faith-based healing over ART, leading to delayed treatment adherence and worsened health outcomes.

Similarly, Leal et al. (2022) discuss the dual impact of spirituality on healthcare decisions. On one hand, religious faith can offer comfort, hope, and emotional relief, positively influencing overall well-being. On the other hand, the belief in divine intervention or miraculous healing may result in unrealistic expectations, causing some individuals to reject or delay essential medical treatments. This study emphasizes the importance of integrating spiritual support within healthcare settings, ensuring that religious beliefs complement, rather than contradict, medical care. By acknowledging spirituality's positive and negative aspects, healthcare providers can develop holistic care strategies that respect patients' faith while promoting adherence to evidence-based treatments.

For the last component of needs, PLWHA continues to face significant social challenges that impact their well-being, including stigma, discrimination, and limited social support. According to Senyurek et al. (2021), stigma remains a major barrier to self-acceptance and social integration, leading to isolation and emotional distress. Many PLWHA

experience discrimination not only from society but also from healthcare professionals, which further limits their access to quality care. The study highlights the crucial role of social support in enhancing the mental and emotional well-being of PLWHA, yet this support is often insufficient or absent.

Similarly, Song et al. (2024) identify stigma and lack of social encouragement as major barriers to physical activity among PLWHA. The study reveals that while physical activity can improve the overall health and mental state of PLWHA, many face obstacles such as fatigue, misinformation about exercise, and restricted access to supportive communities. Social networks play a crucial role in motivating PLWHA to engage in health-promoting behaviors, but the absence of such support systems hinders their ability to adopt healthier lifestyles.

Furthermore, Twinomugisha et al. (2020) emphasize the impact of HIV-related stigma in the workplace, where discrimination prevents PLWHA from securing or maintaining stable employment. This economic instability exacerbates their vulnerability, limiting their ability to meet basic needs such as food, shelter, and healthcare. The study suggests that workplace policies promoting inclusivity and anti-discrimination laws are essential to improving the social and economic well-being of PLWHA.

Overall, the studies underscore the persistent social barriers PLWHA face, particularly regarding stigma, social isolation, and economic challenges. The lack of adequate social support in personal relationships and institutional settings contributes to unmet social needs, making

it crucial to develop interventions that address these gaps.

Limitation

Although this study provides a holistic understanding of the basic needs of PLWHA through the lens of Virginia Henderson's Need Theory, several limitations should be acknowledged. First, the study is based on secondary literature and lacks primary empirical data directly obtained from PLWHA within specific local contexts. Second, limited access to in-depth data on social, spiritual, and economic dimensions may constrain the comprehensiveness of the analysis. Third, cultural diversity, religious backgrounds, and variations in healthcare systems across regions are not fully accounted for, which may affect the generalizability of the findings. Therefore, future research involving field-based, participatory approaches is recommended to validate and enrich these insights.

5. Conclusion

People living with HIV/AIDS (PLWHA) face significant challenges in meeting their fundamental needs, as outlined in Virginia Henderson's Need Theory, which encompasses physiological, psychological, social, and spiritual components. Nutritional deficiencies, water and sanitation insecurity, poor sleep quality, stigma, economic instability, and limited social support all contribute to poor health outcomes and reduced quality of life. These findings highlight the need to develop evidence-based, culturally sensitive care models that address the full spectrum of patient needs. Nurses should conduct comprehensive assessments, nutritional support, psychosocial interventions, health education to enhance well-being, and

advocacy and policy support. Addressing these needs requires a multidisciplinary approach integrating medical care, mental health support, social services, and spiritual care. By focusing on these components, nurses can empower PLWHA to achieve independence, improve their quality of life, and ultimately thrive despite the challenges posed by HIV/AIDS. Future research should focus on empirical evaluations of integrated care frameworks and explore context-specific interventions that strengthen resilience and quality of life for PLWHA.

Acknowledgment

The authors express gratitude to everyone who has contributed to the study and publication.

Conflict of Interest

There is no conflict of interest in this study.

Reference

- Abdollahpour, M., Seyed Alinaghi, S. A., Kianimoghadam, A. S., Masjedi-Arani, A., Bakhtiari, M., Manshadi, S. A. D., Rostami, M., & Mohraz, M. (2024). The effectiveness of health-related quality of life (HRQOL) model in people with HIV: A cross sectional study. *Health Science Reports*, 7(7). <https://doi.org/10.1002/hsr2.2217>
- Abdullahi, I. N., Issaoui, R., & Usman, Y. (2022). Prevalence and genetic lineages of *Staphylococcus aureus* nasal colonization and urinary tract infection among people living with HIV/AIDS in Nigeria: A systematic review. *IJID Regions*, 4, 17–24. <https://doi.org/10.1016/j.ijregi.2022.05.009>
- Ahtisham, Y., & Jacoline, S. (2015). Case Study Integrating Nursing Theory and Process into Practice; Virginia's Henderson Need Theory. *International Journal of Caring Sciences*, 8(2), 443–450. www.internationaljournalofcaringsciences.org
- Alligood, M. R. (2014). *Nursing Theorist and Their Work* (8th ed.). Elsevier Mosby.
- Ambe, N. F., Longdoh, N. A., Tebid, P., Bobga, T. P., Nkfusai, C. N., Ngwa, S. B., Nsai, F. S., & Cumber, S. N. (2020). The prevalence, risk factors and antifungal sensitivity pattern of oral candidiasis in HIV/AIDS patients in Kumba District Hospital, South West Region, Cameroon. *Pan African Medical Journal*, 36. <https://doi.org/10.11604/pamj.2020.36.23.18202>
- Amirah, A., Muhamad, Z., & Samosir, L. (2024). Analysis of Quality of Life Factors in HIV/AIDS Patients at Example Health Center. *Pharmacognosy Journal*, 16(4), 949–952. <https://doi.org/10.5530/pj.2024.16.153>
- Andrianto, M. B., Padila, P., Andri, J., Sartika, A., & J, H. (2021). Religious Practices on HIV/AIDS Patients. *JOSING: Journal of Nursing and Health*, 2(1), 8–14. <https://doi.org/10.31539/josing.v2i1.2976>
- Aparecida Silveira, E., Falco, M. O., Santos, A. S. e A. de C., Noll, M., & de Oliveira, C. (2020). Nutritional Intervention Reduces Dyslipidemia, Fasting Glucose and Blood Pressure in

- People Living with HIV/AIDS in Antiretroviral Therapy: A Randomized Clinical Trial Comparing Two Nutritional Interventions. *Nutrients*, 12(10), 2970. <https://doi.org/10.3390/nu12102970>
- Byanova, K. L., Fitzpatrick, J., Jan, A. K., McGing, M., Hartman-Filson, M., Farr, C. K., Zhang, M., Gardner, K., Branchini, J., Kerruish, R., Bhide, S., Bates, A., Hsieh, J., Abelman, R., Hunt, P. W., Wang, R. J., Crothers, K. A., & Huang, L. (2023). Isolated abnormal diffusing capacity for carbon monoxide (iso $\downarrow$ DLco) is associated with increased respiratory symptom burden in people with HIV infection. *PLOS ONE*, 18(7), e0288803. <https://doi.org/10.1371/journal.pone.0288803>
- Chavez, J. V., Wang, P., Larson, M. E., Vazquez, V., De La Rosa, M., & Behar-Zusman, V. (2023). Methodologies used in studies examining substance abuse, violence and HIV/AIDS (SAVA) constructs using a syndemic framework: a scoping review. *AIDS Care*, 35(11), 1708–1715. <https://doi.org/10.1080/09540121.2023.2176426>
- Chimbetete, T., Buck, C., Choshi, P., Selim, R., Pedretti, S., Divito, S. J., Phillips, E. J., Lehloeny, R., & Peter, J. (2023). HIV-Associated Immune Dysregulation in the Skin: A Crucible for Exaggerated Inflammation and Hypersensitivity. *Journal of Investigative Dermatology*, 143(3), 362–373. <https://doi.org/10.1016/j.jid.2022.07.035>
- Desta, F., Zenbaba, D., Sahiledengle, B., Tekalegn, Y., Woldeyohannes, D., Atlaw, D., Nugusu, F., Baffa, L. D., Gomora, D., & Beressa, G. (2024). Perceived stigma and depression among the HIV-positive adult people in Ethiopia: A systematic review and meta-analysis. *PLOS ONE*, 19(6), e0302875. <https://doi.org/10.1371/journal.pone.0302875>
- Farouji, I., Chan, K. H., Abed, H., DaCosta, T., Vefali, B., Rushdy, A., Suleiman, A., & Slim, J. (2021). A rare presentation of transient hypothermia in HIV infection: A case report and systematic review of cases. *SAGE Open Medical Case Reports*, 9. <https://doi.org/10.1177/2050313X211025441>
- Fauk, N. K., Ward, P. R., Hawke, K., & Mwanri, L. (2021). HIV Stigma and Discrimination: Perspectives and Personal Experiences of Healthcare Providers in Yogyakarta and Belu, Indonesia. *Frontiers in Medicine*, 8. <https://doi.org/10.3389/fmed.2021.625787>
- Getachew, T., Hailu, T., & Alemu, M. (2021). Prevalence of Opportunistic Intestinal Parasitic Infections Among HIV/AIDS Patients Before and After Commencement of Antiretroviral Treatment at Felege Hiwot Referral Hospital: A Follow-up Study. *HIV/AIDS - Research and Palliative Care*, Volume 13, 767–774. <https://doi.org/10.2147/HIV.S318538>
- Ghiasvand, H., Waye, K. M., Noroozi, M., Harouni, G. G., Armoon, B., & Bayani, A. (2019). Clinical determinants associated with quality of life for people who live with

- HIV/AIDS: a Meta-analysis. *BMC Health Services Research*, 19(1), 768. <https://doi.org/10.1186/s12913-019-4659-z>
- Goodkin, K., Evering, T. H., Anderson, A. M., Ragin, A., Monaco, C. L., Gavegnano, C., Avery, R. J., Rourke, S. B., Cysique, L. A., & Brew, B. J. (2023). The comorbidity of depression and neurocognitive disorder in persons with HIV infection: call for investigation and treatment. *Frontiers in Cellular Neuroscience*, 17. <https://doi.org/10.3389/fncel.2023.1130938>
- Gujju, V. R., Akram, B., Shibib, D. R., McGhee, M. A., & Drevets, D. A. (2021). Bordetella bronchiseptica infections in patients with HIV/AIDS. *Medicine*, 100(51), e28244. <https://doi.org/10.1097/MD.00000000000028244>
- Hirai, J., Mori, N., Kato, H., Asai, N., Hagihara, M., & Mikamo, H. (2023). A Case of Severe Pneumocystis Pneumonia in an HIV-Negative Patient Successfully Treated with Oral Atovaquone. *Infection and Drug Resistance*, Volume 16, 1561–1566. <https://doi.org/10.2147/IDR.S406904>
- Huang, X.-P., Li, Z.-Q., Wei-Zhang, Feng, X.-M., Wang, X.-C., & Jiang, Z.-L. (2024). Self-injury and suicide among people living with HIV/AIDS in China: a systematic review and meta-analysis. *BMC Public Health*, 24(1), 2248. <https://doi.org/10.1186/s12889-024-19444-3>
- Ji, J., Zhang, Y., Ma, Y., Jia, L., Cai, M., Li, Z., Zhang, T., & Guo, C. (2024). People who living with HIV/AIDS also have a high prevalence of anxiety disorders: a systematic review and meta-analysis. *Frontiers in Psychiatry*, 15. <https://doi.org/10.3389/fpsy.2024.1259290>
- Joint United Nations Programme on HIV/AIDS (UNAIDS). (2024). *The Urgency of Now: AIDS at a Crossroads*.
- Khatri, S., Amatya, A., & Shrestha, B. (2020). Nutritional status and the associated factors among people living with HIV: an evidence from cross-sectional survey in hospital based antiretroviral therapy site in Kathmandu, Nepal. *BMC Nutrition*, 6(1), 22. <https://doi.org/10.1186/s40795-020-00346-7>
- Khoza-Shangase, K. (2020). Burden of disease: A scoping review of HIV/AIDS and TB in occupational noise-induced hearing loss. *South African Journal of Communication Disorders*, 67(2). <https://doi.org/10.4102/sajcd.v67i2.669>
- Kimera, E., Vindevogel, S., Reynaert, D., Justice, K. M., Rubaihayo, J., De Maeyer, J., Engelen, A.-M., Musanje, K., & Bilsen, J. (2020). Experiences and effects of HIV-related stigma among youth living with HIV/AIDS in Western Uganda: A photovoice study. *PLOS ONE*, 15(4), e0232359. <https://doi.org/10.1371/journal.pone.0232359>
- Leal, M. M., Nwora, E. I., de Melo, G. F., & Freitas, M. H. (2022). Praying for a Miracle: Negative or Positive Impacts on Health Care? *Frontiers in Psychology*, 13.

- <https://doi.org/10.3389/fpsyg.2022.840851>
- Lubega, G., Abaasa, A., Ochola, W., Kikaire, B., Lutaakome, J., Rugazira, E., & Mayanja, Y. (2023). The bacterial profile and antibiotic susceptibility pattern in respiratory tract samples from art-experienced HIV-positive adults in Uganda. *PLOS ONE*, 18(8), e0282936. <https://doi.org/10.1371/journal.pone.0282936>
- Lungu, E. A., & Chewie, M. (2024). Trends and predictors of unmet need for family planning among women living with HIV in Zambia: implications for elimination of vertical transmission of HIV. *BMC Public Health*, 24(1), 1004. <https://doi.org/10.1186/s12889-024-18127-3>
- Martin, R., Ashimosi, C., Nyandiko, W., Chory, A., Aluoch, J., Scanlon, M., & Vreeman, R. (2022). A systematic review of interventions to reduce HIV-related stigma among primary and secondary school teachers. *AIDS Care*, 34(1), 1–6. <https://doi.org/10.1080/09540121.2021.1960264>
- Melese, M., Mengistie, B. A., Delie, A. M., Limenh, L. W., Worku, N. K., Fenta, E. T., Hailu, M., Abie, A., Mehari, M. G., Eseyneh, T., Esubalew, D., & Abuhay, H. W. (2024). Poor sleep quality and its associated factors among HIV/AIDS patients living in sub-Saharan African countries: a systematic review and meta-analysis. *Scientific Reports*, 14(1), 16955. <https://doi.org/10.1038/s41598-024-68074-7>
- Ministry of Health of Indonesia. (2024). *Laporan Penilaian Risiko Cepat MPOX di Indonesia Tahun 2024*.
- Munn, Z., Peters, M. D. J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*, 18(1), 143. <https://doi.org/10.1186/s12874-018-0611-x>
- Nagata, J. M., Miller, J. D., Cohen, C. R., Frongillo, E. A., Weke, E., Burger, R., Wekesa, P., Sheira, L. A., Mocello, A. R., Otieno, P., Butler, L. M., Bukusi, E. A., Weiser, S. D., & Young, S. L. (2022). Water Insecurity is Associated with Lack of Viral Suppression and Greater Odds of AIDS-Defining Illnesses Among Adults with HIV in Western Kenya. *AIDS and Behavior*, 26(2), 549–555. <https://doi.org/10.1007/s10461-021-03410-w>
- Nelson, A. K., Fiskum, G., Renn, C., Zhu, S., Kottlil, S., & Klinedinst, N. J. (2022). Mechanisms of Musculoskeletal Frailty in People Living with HIV. *The Journal of Frailty & Aging*, 11(1), 83–90. <https://doi.org/10.14283/jfa.2021.44>
- Nguyen, T. T., Ha, L., Nguyen, L. H., Vu, L. G., Do, H. T., Boyer, L., Fond, G., Auquier, P., Latkin, C. A., Ho, C. S. H., & Ho, R. C. M. (2023). A global bibliometric analysis of intimate partner violence in the field of HIV/AIDS: implications for interventions and research development. *Frontiers in Public Health*, 11.

- <https://doi.org/10.3389/fpubh.2023.1105018>
- Ogunbajo, A., Bogart, L. M., Mutchler, M. G., Klein, D. J., Lawrence, S. J., Goggin, K., & Wagner, G. J. (2023). Unmet Social Needs are Associated with Lower Adherence to Antiretroviral Therapy (ART) Medication Among a Sample of Black People Living with HIV (PLHIV). *AIDS and Behavior*, 27(11), 3651–3660. <https://doi.org/10.1007/s10461-023-04079-z>
- P. Zinyemba, T., Pavlova, M., & Groot, W. (2020). EFFECTS OF HIV/AIDS ON CHILDREN'S EDUCATIONAL ATTAINMENT: A SYSTEMATIC LITERATURE REVIEW. *Journal of Economic Surveys*, 34(1), 35–84. <https://doi.org/10.1111/joes.12345>
- Padhi, B. K., Khatib, M. N., Ballal, S., Bansal, P., Bhopte, K., Gaidhane, A. M., Tomar, B. S., Ashraf, A., Kumar, M. R., Chauhan, A. S., Sah, S., Shabil, M., Satapathy, P., Jena, D., Bushi, G., Singh, M. P., Chilakam, N., Pandey, S., Brar, M., ... Daniel, A. S. (2024). Association of exposure to air pollutants and risk of mortality among people living with HIV: a systematic review. *BMC Public Health*, 24(1), 3251. <https://doi.org/10.1186/s12889-024-20693-5>
- Parker, W. (2023). Beyond the discourses of policy and power: HIV, AIDS, and community perspectives on the lived pandemic. *African Journal of AIDS Research*, 22(4), 261–268. <https://doi.org/10.2989/16085906.2023.2289392>
- Peng, W., Song, X., Zhang, C., Chen, Y., Zhou, Q., Välimäki, M. A., & Li, X. (2022). The proportion of HIV disclosure to sexual partners among people diagnosed with HIV in China: A systematic review and meta-analysis. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.1004869>
- Pinto-Almazán, R., Sandoval-Navarro, K. A., Damián-Magaña, E. J., Arenas, R., Fuentes-Venado, C. E., Zárate-Segura, P. B., Martínez-Herrera, E., & Rodríguez-Cerdeira, C. (2023). Relationship of Sporotrichosis and Infected Patients with HIV-AIDS: An Actual Systematic Review. *Journal of Fungi*, 9(4), 396. <https://doi.org/10.3390/jof9040396>
- Rimbing, A. T. A., & Triwahyuni, P. (2019). Nursing Experience in Treating People Living With Hiv/Aids (Plwha) at Adventist Hospital Bandung. *Abstract Proceedings International Scholars Conference*, 7(1), 466–474. <https://doi.org/10.35974/isc.v7i1.1076>
- Rogers, B. G., Lee, J. S., Bainter, S. A., Bedoya, C. A., Pinkston, M., & Safren, S. A. (2020). A multilevel examination of sleep, depression, and quality of life in people living with HIV/AIDS. *Journal of Health Psychology*, 25(10–11), 1556–1566. <https://doi.org/10.1177/1359105318765632>
- Roshani Patel, Shakib H. Sheikh, Indu Alwadkar, Priyanka Meshram, Ranjana Sharma, & Roshan Umate. (2022). Case Report: Acute Respiratory Distress Syndrome With Meningoencephalitis With A Known Case of H.I.V. *Journal of*

- Pharmaceutical Negative Results*, 1154–1159.
<https://doi.org/10.47750/pnr.2022.13.S07.164>
- Sahel-Gozin, N., Loutfy, M., & O'Brien, K. K. (2023). Exploring experiences engaging in exercise from the perspectives of women living with HIV: A qualitative study. *PLOS ONE*, 18(6), e0286542.
<https://doi.org/10.1371/journal.pone.0286542>
- Seid, A., Seid, O., Workineh, Y., Dessie, G., & Bitew, Z. W. (2023). Prevalence of undernutrition and associated factors among adults taking antiretroviral therapy in sub-Saharan Africa: A systematic review and meta-analysis. *PLOS ONE*, 18(3), e0283502.
<https://doi.org/10.1371/journal.pone.0283502>
- Senyurek, G., Kavas, M. V., & Ulman, Y. I. (2021). Lived experiences of people living with HIV: a descriptive qualitative analysis of their perceptions of themselves, their social spheres, healthcare professionals and the challenges they face daily. *BMC Public Health*, 21(1), 904.
<https://doi.org/10.1186/s12889-021-10881-y>
- Shafiq, U. R., & Uzma, A. (2024). Optimizing care by integrating Virginia Henderson needs theory & Kolcaba's theory of comfort in a case study. *I-Manager's Journal on Nursing*, 14(1), 31–37.
<https://doi.org/10.26634/jnur.14.1.20795>
- Song, D., Hightow-Weidman, L., Yang, Y., & Wang, J. (2024). Barriers and Facilitators of Physical Activity in People Living With HIV: A Systematic Review of Qualitative Studies. *Journal of the International Association of Providers of AIDS Care (JIAPAC)*, 23.
<https://doi.org/10.1177/23259582241275819>
- Sukarja, I. M., Sutedja, E., Nursiswati, ., Sukawana, I. W., & Sundayana, I. M. (2017). Experiences of people with HIV/AIDS (PLWHA) at the critical condition due to AIDS. *International Journal of Research in Medical Sciences*, 5(4), 1357.
<https://doi.org/10.18203/2320-6012.ijrms20171226>
- Turan, B., Budhwani, H., Fazeli, P. L., Browning, W. R., Raper, J. L., Mugavero, M. J., & Turan, J. M. (2017). How Does Stigma Affect People Living with HIV? The Mediating Roles of Internalized and Anticipated HIV Stigma in the Effects of Perceived Community Stigma on Health and Psychosocial Outcomes. *AIDS and Behavior*, 21(1), 283–291.
<https://doi.org/10.1007/s10461-016-1451-5>
- Twinomugisha, B., Ottemöller, F. G., & Daniel, M. (2020). Exploring HIV-Related Stigma and Discrimination at the Workplace in Southwestern Uganda: Challenges and Solutions. *Advances in Public Health*, 2020, 1–10.
<https://doi.org/10.1155/2020/8833166>
- Udoakang, A. J., Djomkam Zune, A. L., Tapela, K., Nganyewo, N. N., Olisaka, F. N., Anyigba, C. A., Tawiah-Eshun, S., Owusu, I. A., Paemka, L., Awandare, G. A., & Quashie, P. K. (2023). The COVID-19, tuberculosis

- and HIV/AIDS: Ménage à Trois. *Frontiers in Immunology*, 14. <https://doi.org/10.3389/fimmu.2023.1104828>
- Ueckermann, V., Lebre, P., Geldenhuys, J., Hoosien, E., Cowan, D., van Rensburg, L. J., & Ehlers, M. (2022). The lung microbiome in HIV-positive patients with active pulmonary tuberculosis. *Scientific Reports*, 12(1), 8975. <https://doi.org/10.1038/s41598-022-12970-3>
- Venanzi Rullo, E., Maimone, M. G., Fiorica, F., Ceccarelli, M., Guarneri, C., Berretta, M., & Nunnari, G. (2021). Non-Melanoma Skin Cancer in People Living With HIV: From Epidemiology to Clinical Management. *Frontiers in Oncology*, 11. <https://doi.org/10.3389/fonc.2021.689789>
- Wanigatunga, A., Kwon, S., Palella, F., Koletar, S., Gange, S., Brown, T., Margolick, J., & Schrack, J. (2023). LINKING SELF-REPORTED FATIGUE TO OBJECTIVELY MEASURED PHYSICAL ACTIVITY IN MEN WITH AND WITHOUT HIV. *Innovation in Aging*, 7(Supplement_1), 352–353. <https://doi.org/10.1093/geroni/igad104.1173>
- Yang, R., Yuan, R., Gui, X., Ke, H., Zhuang, K., Hu, H., Li, L., Feng, L., Yu, X., Yan, Y., & Luo, M. (2024). Characteristics of Hepatitis B Virus, Hepatitis C Virus, and Syphilis Coinfection in People With HIV/AIDS Contracted Through Different Sources: Retrospective Study. *JMIR Public Health and Surveillance*, 10, e46750. <https://doi.org/10.2196/46750>