P-ISSN: 2808-0467
E-ISSN: 2808-5051
Homepage: https://iss.internationaljournallabs.com/index.php/iss

EFFORTS IN PREVENTING AND CURING HIV/AIDS: A SYSTEMATIC REVIEW

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PAPER INFO

Received:
October 2021
Revised:
December 2021
Approved:
December 2021

ABSTRACT

Background: HIV/AIDS disease is a disease that continues to grow and become a global problem that hit the world. HIV/AIDS is a public health problem that requires serious attention. AIDS is declared a deadly disease because it has a Case Fatality Rate (CFR) of 100% within 5 years means within 5 years after the patient is declared to have AIDS on average will die.
Aim: Therefore, the purpose of writing systematic review is to know the effective prevention and treatment of HIV / AIDS for HIV.
Method: The entire extracted article is taken from several sources namely Google Scholar, Pubmed, Emerald Insight, DOAJ. Furthermore, screening of titles, abstracts and selection of content or content according to inclusion and exclusion is obtained 10 articles that are further analyzed.
Findings: Effective efforts to prevent yourself from HIV/AIDS infection are: Abstinance, befaithful, Condom, Drug and Education. Treatment of HIV/AIDS with the ARV method is considered effective in HIV/AIDS treatment. Antiretroviral therapy treats HIV infection with several medications. ARVs do not kill the virus but are able to slow the rate of growth of the virus, as well as HIV disease and improve health status, quality of life for HIV, decrease hospitalization due to HIV, reduce AIDS-related deaths, reduce mother to child transmission (MTCT) or what we know as mother-to-baby transmission and also provide new hope for people with HIV / AIDS to be able to live longer.

KEYWORDS

Prevention, curing, HIV/AIDS

INTRODUCTION

Acquired Immunodeficiency Syndrome (AIDS) is a disease characterized by a number of symptoms of infection that arise due to the decrease in body damage caused by HIV virus infection. Human Immunodeficiency Virus (HIV) is a virus that infects and destroys human white blood cells (Sel T CD4-Positive) causing a decrease in human immunity (TRACHTENBERG & HULLEY, 1988). The human immune system is considered reduced (Deficient) when it can no longer function to combat infections and diseases. As a result of people with a reduced immune system will be more susceptible to various infectious diseases from bacteria, viruses, fungi, parasites, and other harmful pathogens. Usually, this condition is characterized by the emergence of other chronic diseases, such as cancer and various opportunistic infections that appear along with weakening of the immune system (Carey et al., 2005).

The development of HIV/AIDS causes not only physical suffering but also mental and social suffering in people with HIV/AIDS (ODHA). The first is an opportunistic infection resulting from: immune deficiency while the latter includes suffering from living with HIV/AIDS itself, prejudice from others, the shaking of faith from guilt and sin, loss of

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employment opportunities (UNAIDS, 2014). Since HIV/AIDS is primarily transmitted through sexual intercourse, most new nfection occurs in young people, especially women. Children are also susceptible to HIV infection through mother-to-child transmission. In addition, there is also an increase in the number of orphans due to the death of their parents from AIDS. As a result, the HIV/AIDS problem can be considered not only as a health care problem but also an obstacle to social development in the next generation.

The scale of the human immunodeficiency virus (HIV)/AIDS epidemic has exceeded all expectations since its identification 20 years ago. The United Nations Programme on HIV and AIDS (UNAIDS) estimates that by the end of 2000 about 36.1 million people had been infected with HIV globally. Of these, approximately 34.7 million are adults, 16.4 million are estimated to be women and 1.4 million are children. Since the beginning of the epidemic, 21.8 million people areestimated to have died—17.5 million adults(about 9 million women) and 4.3 million children. In 2000 alone, 3 million deaths were attributed to AIDS, and 5.3 million new infections are believed to have occurred—2.2 million among women and nearly 5.7 million among children (Parker, 2002).

In 2005 alone, there were 4.1 million new HIV-1 cases and 2.8 million deaths from AIDS. These estimates mask the dynamic nature of this epidemic evolution in relation to changes in temporal, geographic distribution, magnitude, diversity of viruses, and means of transmission. Today, no region of the world has yet been touched by this pandemic (Simon et al., 2006). The UNAIDS report, at the end of 2019 there were about 38 million people in the world living with HIV / AIDS aka ODHA. As many as 4% of cases are experienced by children. In the same year, about 690,000 people died from diseases that emerged as complications of AIDS. Of that total population, 19% of people were previously unaware of themselves being infected (Lozada, n.d.). Globally, there were still 690,000 AIDS-related deaths in 2019 and 1.7 million new infections. By 2020 our target of reducing AIDS-related deaths to less than 500,000 and new HIV infections to less than 500,000 will be missed (UNAIDS, 2020).

As the frequency of HIV/AIDS cases continues to increase year on year globally, HIV/AIDS prevention and treatment programs have been widely debated at the national and international levels by government leaders of every country, policymakers, and funding agencies (Levy, 2005). Most people infected with HIV enter the AIDS phase after 8 to 10 years which indicates a stage of HIV infection that has been acute due to lack of attention to HIV/AIDS prevention and treatment efforts.

Despite recent advances in treating and preventing HIV/AIDS, the spread of the virus continues to increase, especially in Europe. In 2016, 160,453 people were newly diagnosed with HIV from 53 countries in the European Region with a rate of 18.2 new infections diagnosed per 100,000 population. This number includes 57,015 new diagnoses reported by 50 countries to the ECDC joint surveillance system and the WHO Regional Office for Europe, including 24,444 from the European Union and European Economic Area. While AIDS cases continued to decline in western Europe, falling 48 percent from 2006 to 2012 in eastern Europe, which includes several former Soviet Asian countries, the number of newly diagnosed people with AIDS increased by 113 percent. According to experts, this increase is strongly related to the lack of preventive measures for those at high risk of being infected with the human immunodeficiency virus (HIV) that causes AIDS.

The WHO Europe region consists of 53 countries, with a population of nearly 900 million people. The ECDC and WHO report found that over the past 10 years, the rate of newfound HIV infections in the region has increased by 52 percent, from 12 people in every 100,000 people in 2007 to 18.2 in every 100,000 in 2016. In 2019, 136,449 newly diagnosed HIV infections were reported in 47 of the Region's 53 Member States (including 24,801 from European countries). This corresponds to a rough rate of 15.6 newly diagnosed infections per 100,000 population (WHO, 2020).

Public awareness of HIV risk is low, as a result of neglecting public health. Lack of investment, widespread poverty, social and judicial constraints on decriminalization of drug use, drug smuggling, and government corruption have been key factors influencing rising HIV/AIDS pain and deaths both globally and regionally. Therefore, to prevent and extend the life of expectations hidu is the responsibility of each individual. The government and all stakeholders as a contributing factor in the fight against HIV / AIDS (DeBell & Carter, 2005).

Asia is also listed as one of the regions with the fastest HIV transmission in the world. According to a report from UNAIDS (2011), between 2001 and 2009, there was a 20% decrease in new HIV infections from 450 000 (410 000-510 000) to 360,000 (300,000–440,000). An estimated 300,000 (260,000–340,000) people died from AIDS-related causes in 2009. In Asia and the Pacific, most people living with HIV are in 11 countries: Cambodia, China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, Thailand and Vietnam. There are people living with HIV in almost any other country in the region, and epidemics can arise even in countries where HIV rates were previously low (For example, Filipinos).

According to the Global Report update of UNAIDS (UNAIDS, 2020), HIV infections in Asia and the Pacific have declined slightly, with reductions in Cambodia, Myanmar, Thailand and Vietnam offset by sharp increases in Pakistan and the Philippines. Key populations and their partners account for about 98% of new HIV infections,and more than a quarter of new HIV infections are among young people (15 to 24 years of age). A 29% reduction in AIDS-related deaths since 2010 has been successful in some countries, such as Australia, Cambodia and Thailand has reached the 90% Target, but AIDS-related death rates are increasing in Afghanistan, Pakistan and the Philippines (UNAIDS, 2020).

HIV is the virus that infects the most people in the world including the Southeast Asian region. The HIV/AIDS epidemic is still a major public health problem in Southeast Asia. The number of people living with HIV (HIV) has remained more or less stable at 3.5 million (3.0 million–4.1 million) since 2005 and includes 1.3 million (1.1 million-1.5 million) women aged 15 and over. According to the World Health Organization South-East Asia Region more than 99% of HIV people live in five countries such as Five countries (Bangladesh, Bhutan, Maldives, Sri Lanka and Timor-Leste) together represent less than 1% of all HIVes and have been categorized as low-level epidemics in these countries. Fewer than 1000 people are living with HIV in Bhutan and Timor-Leste (Using data from 2014 because 2015 data is unavailable (Pendse et al., 2016).

According to East Timor's Global Aids (2018) cases of HIV/AIDS were first reported in 2003, with a cumulative total of 235 HIV-positive cases, the cases were reported to the National Surveillance program in December 2011, of which 51% occurred between the ages of 15-49 and 8% in children under the age of 5, among which 43% were HIV positive in men while in women 57%. HIV in Timor-Leste is mostly sexually transmitted with about 98% of cases

reported as a result of homosexual and heterosexual transmission. There is a lack of information related to HIV transmission due to blood transfusions. The behavior of injectable drug use and the contribution of transmission from these sources is also still poorly understood by the public in general. According to a report from the Comissão Nacional de Combate ao HIV/SIDA de Timor-Leste (CNCHS-TL) that HIV/AIDS cases in Timor-Leste from 2003-June 2021 registered 1374 cases, were being treated by 656 people and 155 people died.

HIV/AIDS is a challenge for the world. The world has committed to achieving the 2030 Agenda for Sustainable Development. As part of that, the government must protect and uphold the human rights of everyone. As the eyes and ears of AIDS prevention, the public plays an important role in holding decision makers to account and demand political leadership (Lozada, 2012). When HIV emerged as a global pandemic, the changes took years. Public health measures that once seemed impossible are now commonplace. All elements must work collectively to fight or break the chain of transmission of HIV/AIDS (UNAIDS, 2020).

HIV/AIDS treatment and prevention efforts require serious intervention and collective cooperation. In tackling HIV /AIDS the government as a facilitator, while the community, NGOs and the business world as the main actors (Levy, 2005). To be able to optimize the intervention of the ODHA community requires positive network development, quality improvement and strength in disseminating information about the needs of HIV, so that the effectiveness of HIV /AIDS prevention and treatment work programs can be realized.

On the other hand,the need to ensure and maintain health should not be limited to biomedical science; we must also actively address psychosocial influences that affect well-being. Affected communities (People living with HIV/AIDS) should be actively involved in identifying and implementing strategies in response to threats to their health and well-being. To prevent stigma, all must be proactive to minimize their negative consequences (Valdiserri & Holtgrave, 2020).

METHOD

The method used in writing this article is systematic review. Systematic Review is one ofthe methods that uses review, review, structured evaluation, classification, and categorization of *evidence-based evidence* that has been produced before. The steps are as follows.

Literature Question

1) What is HIV/AIDS?
2) How to prevent HIV/AIDS?
3) How to treat HIV/AIDS?

Article search strategy

Several search strategies are used to identify relevant studies. In this article, search data and information use electronic sites as data sources. Article search results used PRISMA (Preferred Reporting Items for Systematic Reviews & Meta-Analyses) for instruments and used flowcharts based on the 2009 PRISMA checklist list, omitting articles that were irrelevant to the criteria of identification, screening, feasibility, and finally downloading the relevant articles (Yannascoli et al., 2013).

Inclusion and Exclusion Criteria

At this stage, the criteria of the Article are determined, whether the Articles are worth using for analysis or not. In writing systematicreview this strategy is used to determine whether or not it isfeasible, namely PICOS framework, asfollows.

Population/problem

Population or problem to be analyzed in accordance with the title specified in this systematicreview.

Intervention

An act of management of individual or community cases and exposure to the management of studies in accordance with the theme specified in systematic review.

Comparation

Interventions or other managements are used as comparisons, if no one can use the control group in the selected study.

Outcome

Results or externals processed in previous studies that are in accordance with the theme that has been determined in the systematic review.

Study design

The research design used in the article will be reviewed.

Table 1. Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Population/problem	International articles related to the topic of prevention and treatment of HIV/AIDS	International articles unrelated to the topic of HIV/AIDS prevention and treatment
Intervention	Not using intervention	Not using intervention
Comparation	No	No
Outcome	HIV/AIDS prevention and treatment strategies	HIV/AIDS prevention and treatment strategies
Study design	All types of research design Publication type: Open access research article	No
Year of publication	2010-2020	Before 2010 or after 2020
Language	English	In addition to English

Document Selection

This review study is conducted by reviewing published research articles related to clinical questions that have been made. The search method uses several electronic databases namely Google, Google Scholar, PubMed, Emerald Insight, and DOAJ with keywords prevent, treatment, HIV / AIDS. Based on the results of the annexation obtained 71 articles, then selected the journal based on the title, abstract, and overall selection(Full text) 45 relevant articles, then produced 10 documents for analysis.

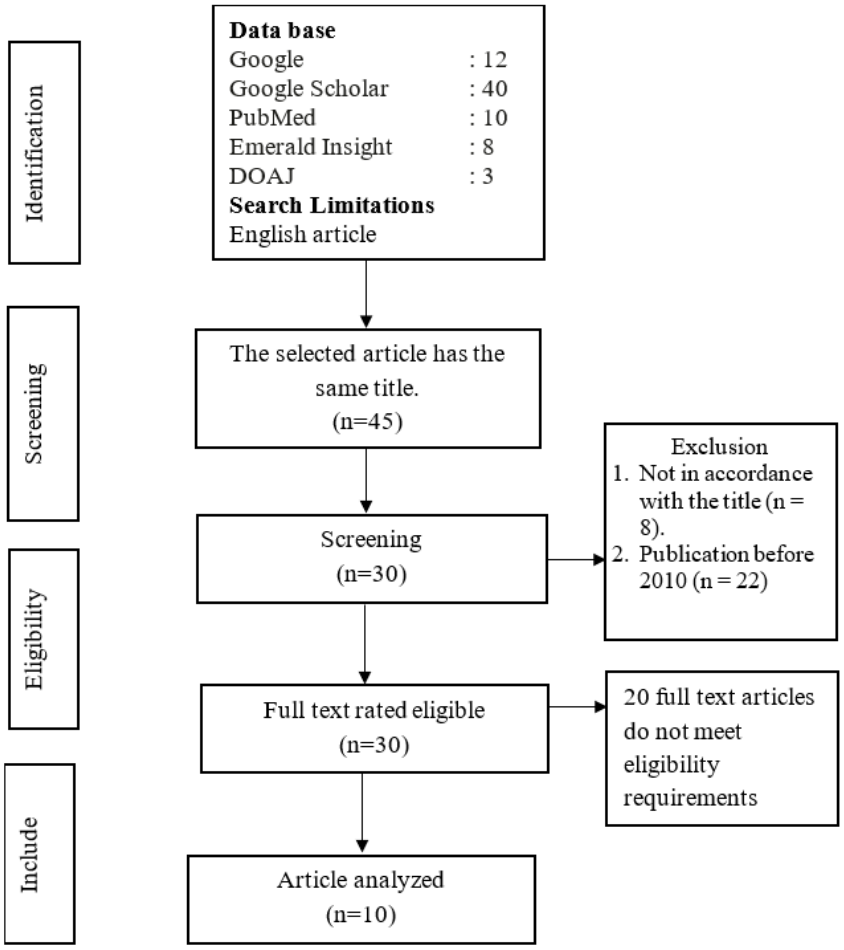


Figure 1. Article Review Flowchart

Data extraction

In this Systematic Review data extraction is done by looking at the overall jurnal publication in a span of 10 years appropriate then written important findings of the article including name and year, title, journal, method, analysis technique and results. Then the data is entered in the data extraction form and will be displayed in the form of a table.

Data synthesis

Systematic Review is synthesized using narrative methods by grouping similar extraction data according to the results measured to answer the goal. The data that has been collected is then searched for similarities and differences and then discussed to draw conclusions.

RESULTS AND DISCUSSION

Process Search Results

The results of the search process are only taken 10 articles that have been in accordance with the criteria of inclusion and have discussions related to HIV/AIDS prevention and treatment efforts. The information obtained is then grouped into several types of articles. The following is the type of artikel that has been successfully obtained:

Table 2. Grouping by Journal Type

No.	Journal Type	Volume	Year	Sum
1.	Public Health Reports	131	2016	1
2.	Bentham Science Publishers	9	2011	1
3.	PLoS Medicine	9	2012	1
4.	North American Journal of Medical Sciences	7	2015	1
5.	Journal Public Health Manag Pract	21	2015	1
6.	ELSEVIER	37	2013	1
7.	AIDS Education and Prevention	22	2010	1
8.	Journal of Social Service Research	19	2018	1
9.	Journal Health Education and behavior	4	2013	1
10.	Journal of Acquired Immune Deficiency syndrome	60	2012	1

Article Search Strategy

Based on eligibility in accordance with the criteria of inclusion and exclusion obtained 10 articles for further review. The literature search strategy can be seen in table 3 as follows.

Table 3. Strategy of Literature Search

No.	Search Engine	Google	Google Scholar	Pubmed	Emerald Insight	DOAJ
1.	Search results	12	40	10	8	3
2.	Fulltext, PDF, 2010-2020	10	45	8	2	2
3.	Appropriate title	8	17	2	2	1
4.	Eligible according to inclusion and exclusion criteria	3	3	2	2	-
Result					10	

Characteristics of the review

Assessment of the quality of studies from 10 articles can be categorized well (High) then done data extraction. This data extraction is done by analyzing data based on the author's name, title, purpose, research method and results, namely grouping important data in the article. The results of data extraction can be seen in the following table.

Table 4. Article Review

No.	Name (Year)	Heading	Method	Technical Analisis	Result
1.	Linda M. Collins, Kari C. Kugler, Marya Viorst Gwadz (2015)	Optimization of Multicomponent Behavioral and Biobehavioral Interventions for the Prevention and Treatment of HIV/AIDS	Experimental design	ANOVA	By implementing new methodological approaches for intervention development and evaluation such as MOST (multiphase optimization strategy), intervention science can arrive at approaches for prevention and treatment of HIV/AIDS that are more effective, economical, efficient, and scalable. Moreover, as time goes on, each intervention will be better than its predecessors along clearly articulated dimensions.
2.	Ann E. Kurth et al (2011)	Combination HIV Prevention: Significance, Challenges, and Opportunities	Used randomized or quasi-experimental designs	Normality test, Homogeneity test and Hypothesis test	No single HIV prevention strategy will be sufficient to control the HIV pandemic. However, a growing number of interventions have shown promise in partially protecting against HIV transmission and acquisition, including knowledge of HIV serostatus, behavioral risk reduction, condoms, male circumcision, needle exchange, treatment of curable

					sexually transmitted infections, and use of systemic and topical antiretroviral medications by both HIV-infected and uninfected persons.
3.	Myron S. Cohen, Marybeth McCauley, and Theresa R. Gamble (2012)	HIV treatment as prevention and HPTN 052	A randomized, clinical trial	Univariate and Bivariate	Demonstrated that antiretroviral therapy reduces the sexual transmission of HIV in HIV-serodiscordant couples by more than 96%. The logistical challenges in preparing for and conducting such a trial were considerable. HPTN 052 reveals the magnitude of the benefits of using antiretroviral therapy to prevent HIV transmission, and serves as a proof of concept. The results have proven critical to the development of new global HIV prevention efforts.
4.	Seth C. Kalichman, PhD, et al. (2011)	Integrated Behavioral Intervention to Improve HIV/AIDS Treatment Adherence and Reduce HIV Transmission	A randomized, clinical trial testing	Univariate and Bivariate	The integrated transmission risk reduction intervention demonstrated increased antiretroviral therapy adherence and less unprotected intercourse with nonseroconcordant partners at 3- and 6-month follow-ups as well as fewer new sexually transmitted

					infections diagnosed over the 9-month follow-up period (adjusted odds ratio = 3.0; P<05; 95% Confidence Intervel=1.01, 9.04). The integrated interventionalso reduced behavioral riskconpansation beliefs.
5.	Ayesha B. M, et al (2019)	Trends in HIV Prevention, Treatment, and Incidence in a Hyperendemic Area of KwaZulu-Natal, South Africa	Cohort study consisted of 2 sequential	Regression models	This study showed a significant decline in HIV incidence in young women; however, to further reduce HIV incidence, HIV prevention and treatment program coverage must be intensified and scaled up.
6.	Puneeta Vohra, Kahamnuk Jamatia, Subhada B, Rahul Vinay Chandra Tiwari, Nabeel Althaf MS, Chayan Jain. (2019)	Correlation of CD4 counts with oral and systemic manifestations in HIV patients	Study population comprised	The statistical analysis was done using SPSS (Statistical Package for Social Sciences) version 17 statistical analysis software.	It was found that decrease in CD4 count is associated with a wide range of oral and systemic manifestations which can be used as prognostic marker for immune suppression in AIDS patient.
7.	Seth C Kalichman, Jennifer Pellowski, Christina Turner. (2011)	Prevalence of sexually transmitted co-infections in people living with HIV/AIDS: systematic review with implications for using HIV treatments for prevention	Systematic review	We conducted electronic and manual searches for studies that reported STI co-infections among people	Electronic database and manual searches located 37 clinical and epidemiological studies of STI that increase HIV infectiousness. The overall mean point-prevalence for confirmed STI

				diagnosed with HIV	was16.3% (SD¼16.4), and median 12.4% STI prevalence in people living with HIV/AIDS. The most common STI studied were Syphilis with median 9.5% prevalence, Gonorrhea 9.5%, Chlamydia 5%, and Trichamoniasis 18.8% prevalence. STI prevalence was greatest at the time of HIV diagnosis, reflecting the role of STI in HIV transmission. Prevalence of STI among individuals receiving HIV treatment was not appreciably different from untreated persons. The prevalence of STI in people infected with HIV suggests that STI co-infections could undermine efforts to use HIV treatments for prevention by increasing genital secretion infectiousness.
8.	Ping Du, MD, PHD, et al (2015)	HIV transmission risk behaviors among people living with HIV/ AIDS: The need to integrate HIV prevention interventions and public health strategies into HIV care	Characteristics of the study population	Descriptive analyses	A total of 530 HIV patients were encountered, but 11 patients (2 women and 9 men) declined the risk assessment, resulting in 519 (97.9%) patients participating in the risk assessment. Three men were

					excluded from the analyses due to missing responses for sexual behavior questions, leaving 516 patients for final analyses
9.	Suzanne L. Wenzel, Benjamin Henwood, Taylor Harris, Hailey Winetrobe and Harmony Rhoades (2017)	Provider perceptions on HIV risk and prevention services within permanent supportive housing	Longitudinal mixed methods study	SPSS.15	suggest that provider awareness and knowledge of PrEP is very limited, and provision of formal HIV prevention programing for residents is perceived as challenging. Informal, ad hoc conversations with residents about sexual risk and HIV prevention do occur when providers have rapport with clients and perceive risk. There are significant gaps in HIV prevention services through PSH but also opportunities to enhance providers' efforts to promote the health of residents through prevention.
10.	Inge de Bresse, et al (2019)	Prioritizing HIV/AIDS prevention strategies in Bandung, Indonesia: A cost analysis of three different HIV/AIDS interventions	Experimental designs	A cost analysis of three different HIV/AIDS interventions	The societal costs of the outreach program were US$ 347,199.03 in 2016 and US$ 73.72 per reached individual. Moreover, the cost of HRCM for IDUs were US$ 48,618.31 in 2016 and US$ 365.55 per community meeting. For the

					IEC program at MCHPs, US$ 337.13 was paid in 2016 and the cost per visitor were US$ 0.51.

HIV/AIDS

Definition

HIV (Human Immunodeficiency Virus) is a virus that attacks the immune system (CD4/T-Cells) which further weakens the body's ability to fight infections and diseases. AIDS (Acquired Immune Deficiency Syndrome) is a condition in which HIV is already in its final stage of infection. This condition is characterized by the emergence of other chronic diseases such as cancer and various opportunistic infections that appear along with weakening the immune system (Vohra et al., 2019).

HIV/AIDS is a type of sexually transmitted disease (Sexual Treansmited Infectious) (Kalichman et al., 2011a). The effects of HIV after destroying CD4 (Sel white blood that plays an important role in fighting infections and diseases that threatenthe body) cause the body to fight other sexual infectious diseases as well, such as syphilis, Chlamidya, Gonorrhea, Syphilis and AIDS.

Cause

HIV is spread through blood, semen, or vaginal fluids. Human activities that cause infection virus due:

1) Engaging in unprotected sexual intercourse with an infected person
2) Tlibat in sexual relationships with several different partners
3) Havingsexual relations with sex workers or drug users
4) Usethe same needle when injecting, usually for illegal drugs
5) Useunsterilized needles for piercing or tattooing, have other sexually transmitted diseases such as herpes, syphilis, gonoroe, or chlamydia fungus
6) Menerima blood transfusion before 1985, where after that year all donated blood must be tested carefully HIV
7) HIV can also be transmitted from mother to fetus during pregnancy.

Symptoms and Stage

1) Stadium pertama (Smith & Sullenger, 1995)
   a) You will experience similar pain, such as the flu, a few weeks after infection, for one to two months.
   b) Can not cause any symptoms for several years
   c) There can be fever, sore throat, rash, swollen lymph nodes, diarrhea, fatigue, muscle pain, and joints.
2) Second stadium
   a) Generally, it causes no further symptoms for years.
   b) The virus continues to spread and damage the immune system.
   c) Transmission of infection can already be done to others

   d) Lasts up to 10 years or more
3) Third stage (Suryono & Nasronudin, 2015)
   a) Endurance of vulnerable people, so it is easy to get sick, and will continue to become AIDS
   b) Persistent fever for more than ten days
   c) Feeling tired all the time
   d) Difficulty breathing
   e) Severe and long periods of diarrhea
   f) There is a fungal infection of the throat, mouth, and vagina.
   g) Purple spots on the skin that will not disappear.
   h) Loss of appetite, so the weight drops dramatically.

Incubation Period

The stages of the stage of the disease generally reflect how long HIV infection is in the body.

1) First Stadium

   Early HIV stage is a condition also referred to as acute HIV infection that occurs between 2-4 weeks after the initial infection. The proliferation of the virus occurs rapidly and uncontrollably in the weeks of contracting HIV. That's why in the early stages, the body of an HIV-infected person usually contains a very large amount of HIV *viral load.* Regardless of how long HIV infection lasts during this stage, it will very easily transmit the HIV virus to others at any time (Carey et al., 2005).
2) Second stadium

   After the time of HIV infection in the early stages, the virus will remain active in the body but show no symptoms or only mild symptoms. This stage is also called the asymptomatic stage which means without symptoms. Chronic HIV infection in the clinical latent stage or chronic HIV can last for 10 to 15 years. Even without symptoms, the HIV virus is increasingly attacking immune cells to develop further complications.
3) Third stage

   The advanced stage of HIV is the peak at which the immune system is weakened or completely damaged by the HIV virus. In this phase, people with HIV/AIDS (ODHA) have a high viral load. At the advanced stage of HIV, cd4 count decreases dramatically to below 200 cells per cubic millimeter of blood. Normally, a CD4 count is about 500 to 1,600 cells per cubic millimeter of blood. The period of HIV infection during the late stage usually lasts at least 10 years or more until it develops opportunistic infections if left untreated.

HIV/AIDS Prevention Efforts

Development of strategies or efforts to prevent HIV/AIDS transmission such as condom use, clean syringes, behavioral interventions, and blood supply screening. According toRodger et al,58,000 people performing unprotected sex acts infected with HIV (Yuan et al., 2018). A variety of effective interventions are currently available to reduce HIV/AIDS transmission. However, most of these HIV prevention interventions focus on changing an individual's risky behavior. HIV prevention interventions that have been running there is one of the inhibitory

factors or that facilitate or change behavior, namely the external environment (Abdul-Quader & Collins, 2011).

Effective HIV prevention intervention strategies should be improved and evaluated the effectiveness of HIV prevention intervention methodologies (Kurth et al., 2011). The reduction in the risk of HIV transmission resulting from behavioral interventions is integrated with health education about preventing HIV transmission at the community level, officials, adolescents, and commercial sex workers (PSK) to avoid HIV infection (Mills et al., 2012).

New infection rates are particularly high in community environments,such as sex workers, gay men and other men who have sex with men, people who inject drugs and transgender people. But access to HIV prevention services for key populations lags far behind. Therefore,according to UNAIDS report (2016) as the World Organization dealing with HIV/AIDS channeled a budget of 40-50% for HIV/AIDS prevention programs worldwide (Kilmarx & Mermin, 2012).

A quarter of all resources need to be invested in HIV prevention, particularly for people who are at high risk of infection. There are basically 5 levels of disease prevention in general, namely (Piot et al., 2002):

1) A*(Abstinence):* Absent sex or not having sex for the unmarried.
2) B*(Be faithful):* Be loyal to one sex partner (Do not change partners).
3) C*(Condom):* Prevents transmission of HIV through sexual intercourse by using condoms.
4) D*(Drug No):* Prohibited from using drugs.
5) E*(Education):* Education and correct information about HIV, how it is transmitted, prevention and treatment.

If you suspect you have recently been infected or contracted the HIV virus, such as after having sex with someone with HIV, then you should see a doctor immediately. In order to get *post-exposure prophylaxis* (PEP) drugs is a method of HIV prevention by taking antiretrovirals for those at high risk of contracting HIV. Those who had more than one sexual partner had an HIV-positive partner who was taken for 28 days and consisted of 3 antiretroviral drugs.

Since 2016, WHO has recommended that all people living with HIV be given art lifetime care, including children, adolescents, adults, and pregnant and lactating women, regardless of clinical status or CD4count.

HIV/AIDS Treatment Efforts

Although until now there is no cure for HIV, but there are types of drugs that can slow the progression of the virus. This type of medication is called antiretroviral (ARV). ARVs work by eliminating the elements the HIV virus needs to multiply and prevent the HIV virus from destroying CD4 cells. Types of ARV drugs have various variants, including *Etravirine, Efavirenz, Lamivudin, Zidovudin,* and *Nevirapine* to reduce death and morbidity related to human immunodeficiency virus (HIV) infection (Granich et al., 2011).

Early diagnosis is related to the treatment and treatment of people with HIV/AIDS. HIV infection can be detected very accurately using WHO prequalification tests in 30inter-nationallyapproved testing strategies. The most widely used HIV diagnostic ice t detects

antibodies produced by the person as part of an immune response to fight HIV. In most cases, people develop antibodies to HIV within 28 days ofinfection.

Once infected, a person can transmit HIV transmission through sexual intercourse or their partner's drug use or to the pregnant woman to her baby during pregnancy or lactation. The use of antiretroviral therapy (ART) for HIV-1 treatment is currently one of the most popular ideas for reducing HIV transmission (Cohen et al., 2012).

Current developments prove that the use of Anti Retriviral Treatment (ART) as one of the treatments to extend the life expectancy of people with HIV / AIDS. ART regimens require at least 85% compliance to suppress HIV replication, avoid treatment-resistant variants of the virus, and reduce infections. Evidence also suggests that individuals who have difficulty following ART engage in high-risk sexual behavior (Kalichman et al., 2011).

Before taking treatment in people with HIV / AIDS, the first step that needs to be considered is diagnosis. Diagnosis of HIV/AIDS infection can be established based on the Clinical Classification Organization or CDC. One of the contoh diagnosis of HIV positif di Indonesia there are2 symptoms, namely minor symptoms and major symptoms (Suryono & Nasronudin, 2015).

1) Minor Symptoms
    a) Coughing for more than a month
    b) Dermatitis generalisata
    c) Multisegmental and/or recurrent shingles
    d) Oro-pharyngial candidiasis
    e) Simplek chronic progressive herpes
    f) Lymphadenopathy generalisata
    g) Fungal infection of recurring at female genitals
    h) Retinitis cytomegalovirus
2) Major Symptoms
    a) Weight loss of more than 10% in 1 month
    b) Chronic diarrhea for a month
    c) Fever for more than a month
    d) Decreased consciousness and neurological disorders
    e) Dementia/HIV encefalopati

After making a diagnosis identified positif, then the next step is to make treatment efforts to reduce transmission, increase antibodies and extend the life expectancy of people with HIV / AIDS. HIV treatment needs to be done gradually and lasts a long time.

CONCLUSION

HIV/AIDS is one of the deadliest diseases in the world. One of the viruses that attack white blood cells called CD4 cells is human immunodeficiency virus (HIV), the virus can cause AIDS in a certain period of time can damage the immune system in humans. The accompanying opportunistic infection can be a visible clinical manifestation. Decreased immune system occurs due to weakened immunity due to HIV infection so that opportunistic infections can occur. HIV /AIDS is one of the diseases that spread in the form of viruses and until now there is still no way or cure to treat it.

HIV lives in the blood and body fluids of an infected person. Fluid that can remove HIV from blood fluids, walls, breast milk, sperm and vaginal fluid including menstrual blood. While transmission can occur through: free intercourse / sex without the use of safety with people infected with HIV, syringes or piercings and can be through tattoos that are not sterile and used interchangeably, can also be through blood transfusions containing the HIV virus, HIV-positive mothers during childbirth or through breast milk given.

REFERENCES

Abdul-Quader, A. S., & Collins, C. (2011). Identification of Structural Interventions for HIV/AIDS Prevention: The Concept Mapping Exercise. *Public Health Reports*, *126*(6), 777–788. https://doi.org/10.1177/003335491112600603

Aids, G. (2018). *Country Progress Report: Colombia*. 14.

Carey, V. J., Pahwa, S., & Weinberg, A. (2005). Reliability of CD4 Quantitation in Human Immunodeficiency Virus-Positive Children: Implications for Definition of Immunologic Response to Highly Active Antiretroviral Therapy. *Clinical and Vaccine Immunology*, *12*(5), 640–643. https://doi.org/10.1128/CDLI.12.5.640-643.2005

Cohen, M. S., McCauley, M., & Gamble, T. R. (2012). HIV treatment as prevention and HPTN 052. *Current Opinion in HIV and AIDS*, *7*(2), 99–105. https://doi.org/10.1097/COH.0b013e32834f5cf2

DeBell, D., & Carter, R. (2005). Impact of transition on public health in Ukraine: case study of the HIV/AIDS epidemic. *BMJ*, *331*(7510), 216–219. https://doi.org/10.1136/bmj.331.7510.216

Granich, R., Gupta, S., B. Suthar, A., Smyth, C., Hoos, D., Vitoria, M., Simao, M., Hankins, C., Schwartlander, B., Ridzon, R., Bazin, B., Williams, B., Lo, Y.-R., McClure, C., Montaner, J., & Hirnschall, G. (2011). Antiretroviral Therapy in Prevention of HIV and TB: Update on Current Research Efforts. *Current HIV Research*, *9*(6), 446–469. https://doi.org/10.2174/157016211798038597

Kalichman, S. C., Pellowski, J., & Turner, C. (2011a). Prevalence of sexually transmitted co-infections in people living with HIV/AIDS: Systematic review with implications for using HIV treatments for prevention. *Sexually Transmitted Infections*, *87*(3), 183–190. https://doi.org/10.1136/sti.2010.047514

Kalichman, S. C., Pellowski, J., & Turner, C. (2011b). Prevalence of sexually transmitted co-infections in people living with HIV/AIDS: systematic review with implications for using HIV treatments for prevention. *Sexually Transmitted Infections*, *87*(3), 183–190. https://doi.org/10.1136/sti.2010.047514

Kilmarx, P. H., & Mermin, J. (2012). Prevention With People With HIV in the United States. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *60*(3), 219–220. https://doi.org/10.1097/QAI.0b013e3182531ba2

Kurth, A. E., Celum, C., Baeten, J. M., Vermund, S. H., & Wasserheit, J. N. (2011). Combination HIV Prevention: Significance, Challenges, and Opportunities. *Current HIV/AIDS Reports*, *8*(1), 62–72. https://doi.org/10.1007/s11904-010-0063-3

Levy, N. C. (2005). From Treatment to Prevention: The Interplay Between HIV/AIDS Treatment Availability and HIV/AIDS Prevention Programming in Khayelitsha, South

Africa. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, *82*(3), 498–509. https://doi.org/10.1093/jurban/jti090

Lozada, J. S. (n.d.). Joint United Nations Programme on HIV/AIDS. In *Encyclopedia of Global Health*. SAGE Publications, Inc. https://doi.org/10.4135/9781412963855.n665

Mills, E. J., Beyrer, C., Birungi, J., & Dybul, M. R. (2012). Engaging Men in Prevention and Care for HIV/AIDS in Africa. *PLoS Medicine*, *9*(2), e1001167. https://doi.org/10.1371/journal.pmed.1001167

Parker, R. (2002). The Global HIV/AIDS Pandemic, Structural Inequalities, and the Politics of International Health. *American Journal of Public Health*, *92*(3), 343–347. https://doi.org/10.2105/AJPH.92.3.343

Pendse, R., Gupta, S., Yu, D., & Sarkar, S. (2016). HIV/AIDS in the South-East Asia region: progress and challenges. *Journal of Virus Eradication*, *2*, 1–6. https://doi.org/10.1016/S2055-6640(20)31092-X

Piot, P., Zewdie, D., & Türmen, T. (2002). HIV/AIDS prevention and treatment. *The Lancet*, *360*(9326), 86. https://doi.org/10.1016/S0140-6736(02)09342-X

Simon, V., Ho, D. D., & Abdool Karim, Q. (2006). HIV/AIDS epidemiology, pathogenesis, prevention, and treatment. *The Lancet*, *368*(9534), 489–504. https://doi.org/10.1016/S0140-6736(06)69157-5

Smith, C., & Sullenger, B. A. (1995). AIDS and HIV infection. In *Molecular and Cell Biology of Human Gene Therapeutics* (pp. 195–236). Springer Netherlands. https://doi.org/10.1007/978-94-011-0547-7_11

Suryono, S., & Nasronudin, N. (2015). Clinical Description and Diagnosis of HIV/AIDS. *Indonesian Journal of Tropical and Infectious Disease*, *5*(1), 23. https://doi.org/10.20473/ijtid.v5i1.212

TRACHTENBERG, A. I., & HULLEY, S. B. (1988). AIDS Education. *Science*, *240*(4854), 867–868. https://doi.org/10.1126/science.240.4854.867-b

UNAIDS. (2020). *Seizing the moment: Tackling entrenched inequalities to end epidemics*.

Valdiserri, R. O., & Holtgrave, D. R. (2020). Responding to Pandemics: What We've Learned from HIV/AIDS. *AIDS and Behavior*, *24*(7), 1980–1982. https://doi.org/10.1007/s10461-020-02859-5

Vohra, P., Jamatia, K., Subhada, B., Tiwari, R. C., Althaf, M. N., & Jain, C. (2019). Correlation of CD4 counts with oral and systemic manifestations in HIV patients. *Journal of Family Medicine and Primary Care*, *8*(10), 3247. https://doi.org/10.4103/jfmpc.jfmpc_767_19

WHO. (2020). *Infection prevention and control during health care when COVID-19 is suspected*.

Yannascoli, S. M., Schenker, M. L., Carey, J. L., Ahn, J., & Baldwin, K. D. (2013). How to write a systematic review: A step-by-step guide. *University of Pennsylvania Orthopaedic Journal*, *23*, 64–69.

Yuan, Z., Kang, G., Daharsh, L., Fan, W., & Li, Q. (2018). SIVcpz closely related to the ancestral HIV-1 is less or non-pathogenic to humans in a hu-BLT mouse model. *Emerging Microbes & Infections*, *7*(1), 1–12. https://doi.org/10.1038/s41426-018-0062-9