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# Descriptions of Adolescent Holistic Knowledge About HIV/AIDS at State Islamic Junior High School 2 Jember

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ARTICLE INFO	ABSTRACT
ORCHID ID	HIV/AIDS is a global health issue, with the number of sufferers
Author 1: -	tending to increase each year. In 2015, there were 30,935 new
Author 2: -	HIV cases, and by 2020, this number had risen to 41,987 cases,
Author 3: -	indicating a 35.77 percent increase in new cases between 2015
Author 4: -	and 2020. Adolescents constitute one of the groups vulnerable
Author 5: -	to HIV/AIDS due to a lack of holistic knowledge on the subject.
Article History:	Knowledge related to HIV/AIDS is crucial for adolescents, as the
Paper received: 30-12-2023	adolescent phase is characterized by an increase in hormone
revised: 27-05-2024	production, which may trigger risky sexual behavior. This study
accepted: 15-12-2024	used a qualitative descriptive method with Focus Group
Keywords:	Discussion (FGD) with 22 respondents at State Islamic Junior
knowledge; adolescents; HIV; AIDS.	High School 2 Jember grades 7 and 8. The five indicators of knowledge asked respondents include definition, mode of transmission, characteristics of people affected, prevention and treatment of HIV/AIDS classified as less. Based on research results, knowledge about HIV/AIDS among adolescents is still relatively low, despite the respondents being organizational activists at school. As adolescents active in their organizations, they play an important role in disseminating appropriate information about HIV/AIDS to their peers. To address this issue, it is recommended that schools and other relevant stakeholders provide comprehensive sexual education for adolescents. Integrating education on sexual health into school subjects can help adolescents understand this disease comprehensively and realize the importance of sexual health and HIV/AIDS prevention.

### 1. Introduction

Human Immunodeficiency Virus (HIV) and Acquired Immuno Deficiency Syndrome (AIDS) are global health problems. The number of new HIV cases tends to increase from year to year, in 2015 new HIV cases found were 30,935 cases and in 2020 there were 41,987 cases, so there was an increase of 35.77% of new HIV cases from 2015 and 2020 (Kemenkes RI, 2021). An increase in HIV/AIDS cases occurred in both developed and developing countries, in Indonesia the cumulative number of HIV cases for the period January - March 2022 was 10,525 people out of 941,973 people who had been tested for HIV, and as many as 8,784 of them had received ARV treatment (Kemenkes RI, 2023). HIV can infect all age groups, including adolescents who are transitioning to adulthood. It is estimated that there will be 12 new HIV cases in children between 2010 and September 2022.

The high number of HIV cases in the adolescent age group is caused by several factors such as injecting drug use and risky sexual behavior, both of which are based on a low level of knowledge regarding HIV/AIDS (Marni & Ratnasari, 2019). Therefore, knowledge related to HIV/AIDS is very important in efforts to prevent and transmit the disease. However, data shows that adolescents' knowledge of HIV/AIDS is still relatively low. In a study conducted on adolescents in Menteng Village, Central Jakarta, 41.7% of male adolescents and 53.2% of female adolescents had insufficient knowledge regarding HIV/AIDS (Pangaribuan et al., 2021). In addition, the results of another study indicate that adolescents' knowledge related to HIV/AIDS in Sanawetan Subdistrict, Blitar, is still insufficient, with 63.7% (20 adolescents) lacking knowledge, while 33.3% (10 adolescents) have sufficient knowledge. This data underscores the need to improve adolescents' understanding of HIV/AIDS in various regions (Sabhita et al., 2022).

Knowledge is closely related to the information that teenagers get. Adolescents who do not receive information about HIV/AIDS tend to have low knowledge of HIV/AIDS. Data obtained from research on adolescent knowledge about HIV/AIDS at *IFP* Muhammadiyah 2 Cirebon found that out of 142 adolescents, 82 of them (57.74%) had never received information related to HIV/AIDS and 60 adolescents (42.26%) had received information regarding HIV/AIDS. As many as 76.67% of the 60 adolescents who already know information related to HIV/AIDS get this information through lessons at school (Kumalasary, 2021). Knowledge related to HIV/AIDS in adolescents is still relatively lacking, while knowledge regarding HIV/AIDS in adolescence is very important because during the adolescent phase there is an increase in hormone production. This can trigger an increase in risky sexual behavior which is one of the causes of HIV/AIDS (Ismail et al., 2022). Low basic knowledge related to HIV/AIDS which includes prevention and transmission tends to cause adolescents not to think about accessing risky things that can transmission HIV/AIDS (Novianti, 2020).

Student activity unit Health and Reproductive Education Organization (HERO) at the University of Jember is an organization that focuses on efforts to promote and prevent HIV/AIDS. This research was conducted to explore and find out the extent of knowledge about HIV/AIDS among students at State Islamic Junior High School 2 Jember, which is one of the leading State Islamic Junior High School in Jember Regency qualitatively.

### 2. Method

This research article was compiled from the results of community service activities, namely the HERO Goes To School activity carried out by the Health and Reproduction Education Organization (HERO) FKM UNEJ using a qualitative descriptive research method. The total number of respondents in this study was 22 students at State Islamic Junior High School 2 Jember. The respondents involved in the FGD were active members or activists of student organizations at State Islamic Junior High School 2 Jember grades 7 and 8. The selection of active student organization members as respondents was because they represent and are agents of change for other students. This research was conducted in May 2023. This study aims to explore and find out the extent of knowledge about HIV/AIDS through FGD activities. FGD activities are carried out offline or face-to-face by asking 5 questions, namely the meaning of HIV/AIDS, transmission of HIV/AIDS, characteristics of people affected by HIV/AIDS, prevention of HIV/AIDS, and treatment of HIV/AIDS, for approximately 20 minutes to find out the extent of students' knowledge at State Islamic Junior High School 2 Jember. The coding of

respondents in this study was done by giving the code IF (FGD Informant) to each informant. Since the number of informants was 22, the coding was written from IF 01 to IF 22.

### 3. Result and Discussion

### 3.1 Characteristics of Respondents

There were 22 respondents in this study who were active organizational students at State Islamic Junior High School 2 Jember grades 7 and 8. The ages of the respondents ranged from 13 to 14 years. The results of the FGD discussed in this article are the results of the informal FGD (FGDI) in general.

### 3.2 Overview of Adolescents' Knowledge of the Definition of HIV/AIDS

Respondents in this study were some junior high school students in grades 7 and 8 with an age range of 13-15 years. In this age range, hormone production in adolescents increases. Increased hormone production can trigger an increase in risky sexual behavior which is one of the factors causing HIV/AIDS (Ismail et al., 2022). Therefore, increased hormone levels in adolescents need to be balanced with adequate knowledge, especially related to HIV/AIDS in order to avoid behaviors that lead to the risk of contracting HIV/AIDS. However, it turns out that the knowledge of adolescents, both boys and girls, is still relatively low (Pangaribuan et al., 2021).

The low knowledge of adolescents regarding the definition of HIV/AIDS can be seen in the respondents in this study. Many of the respondents' answers were incorrect regarding the definition of HIV/AIDS.

"HIV/AIDS is a disease." explained Informant 1 (IF,01)

Informant 4 stated, "Infectious diseases, yes, the main ones are quite dangerous. That's my understanding of it." (IF,04)

Informant 3 shared, "HIV/AIDS is a blood-borne disease, I believe." (IF,03)

Informant 2 expressed some uncertainty, "From my understanding, HIV/AIDS is a disease that can be transmitted through unprotected sexual intercourse. But I'm not completely sure about the details." (IF,02)

Based on the FGD results on the knowledge of young people at State Islamic Junior High School 2 Jember about the definition of HIV/AIDS, the results show that judging from the statements of the respondents, knowledge related to the definition of HIV/AIDS is still low. Respondents defined HIV/AIDS incompletely and were unsure of the statements given to researchers. The first statement only states that HIV/AIDS is a disease, the second statement has started to say that HIV/AIDS is a contagious and dangerous disease, the third statement explains that HIV/AIDS is a blood disease, and the fourth statement states that HIV/AIDS is an infectious disease that occurs when a person has risky sexual intercourse before marriage, and no one says what HIV/AIDS stands for.

HIV and AIDS are 2 different definitions. HIV or the abbreviation of Human Immunodeficiency Virus is defined as an infectious disease caused by a virus and damages the

human immune system by infecting and destroying white blood cells so that the immune system is vulnerable to disease (Kemenkes RI, 2020) While AIDS or the abbreviation of Acquired Immuno Deficiency Syndrome are symptoms that arise due to infection with the HIV virus (Kemenkes RI, 2020). So judging from the answers of the respondents and compared with the definition of HIV/AIDS, it can be concluded that the knowledge of adolescents is still low. Because the statement that the respondent gave was not in accordance with the definition of HIV/AIDS.

## 3.3 Adolescents' Knowledge Depiction on HIV/AIDS Transmission

Many ordinary people misjudge or understand the transmission of HIV/AIDS, including teenagers. Junior high school students in grades 7 and 8 as respondents in this study were mostly between 13-15 years old. At this age it is considered a critical period where a teenager wants to find his identity so that their curiosity tends to bring changes to him (Mustika & Effendy, 2020). So it is very important for teenagers to know the transmission of HIV / AIDS. The following are statements that respondents gave to researchers when asked about their knowledge of HIV/AIDS transmission.

Informant 3 shared, "From what I remember, yes. For example, we just got an injection, and that's the name of the injection that is being used again. That's it, do you understand?" (IF,03)

Based on the response from the first respondent, it did not indicate that HIV is a contagious disease, but the respondent answered correctly regarding the mode of HIV/AIDS transmission, which is through the repeated use of injection needles. The transmission of HIV/AIDS is indeed correct from the repeated use of injection needles, but that is not the only way, there are several other ways it can be transmitted, such as through unprotected sexual intercourse before marriage and blood transfusions using non-sterile equipment. Therefore, the first response can be interpreted as the respondent knowing but not fully understanding the modes of transmission.

Informant 1 stated, "Maybe it can be contagious." (IF,01)

Informant 4 explained, "It's contagious because, from what I understand, it's from people who are sick." (IF,04)

Informant 2 expressed some uncertainty, "I think you can get infected if the person is not clean. If there are traces of it, as was explained to us by Ms. Rin, unclean conditions can also be dangerous." (IF,02)

Based on the statements from the three respondents during the FGD regarding the transmission of HIV/AIDS at State Islamic Junior High School 2 Jember, it shows that their knowledge on the topic is still limited. This can be seen as the second respondent stated that it could only be contagious without explaining how it is transmitted. The third respondent's statement indicated that it can be transmitted from people who are sick. The fourth respondent's statement suggested that it can be transmitted due to poor hygiene, especially after defecation or urination. These respondent statements are inaccurate, as HIV is transmitted through the exchange of various bodily fluids from people infected with HIV/AIDS, such as semen, blood, breast milk, and vaginal fluids. HIV can also be passed from a mother to her child during pregnancy and childbirth. A person cannot be infected through everyday

contact such as kissing, hugging, shaking hands, or sharing personal objects, food, or water (WHO, 2024). Therefore, the responses from the respondents suggest that their knowledge about the transmission of HIV/AIDS is still limited.

# 3.4 Description of Adolescents' Knowledge of the Characteristics of Someone Affected by HIV/AIDS

If HIV/AIDS has attacked the human immune system, it has characteristics that start with general symptoms that are common, are considered normal and are found in sufferers of other diseases (Syahputra et al., 2019). Adolescent knowledge related to HIV/AIDS is relatively low, this is evidenced by data obtained in a study on adolescents in the Menteng Village, Central Jakarta which stated that 41.7% of male adolescents and 53.2% of female adolescents had insufficient knowledge regarding HIV/AIDS (Pangaribuan et al., 2021).

The knowledge level of adolescents is still relatively low regarding HIV/AIDS, most of them do not have knowledge and understanding about HIV/AIDS, one of which is the characteristics of someone who is infected with the virus. Answers from respondents who were wrong and did not know about the statement given regarding the characteristics of a person affected by HIV/AIDS.

Informant 1 said, "Are their nails turning blue? No? The nails here," while pointing to a particular area." (IF,01)

Informant 2 responded, "I don't know, I don't remember yet, hehe." (IF,02)

Based on the results of FGDs conducted with young people at State Islamic Junior High School 2 Jember about the characteristics of a person affected by HIV/AIDS, the results showed that when viewed from the statements of 2 respondents, knowledge and understanding of the characteristics of a person affected by HIV/AIDS were still unsure and did not know in the statement submitted to the researcher. The first respondent's answer stated doubtfully and was not sure that the characteristic of a person affected by HIV/AIDS was blue fingernails. Whereas in the second statement the respondent stated that he did not know the characteristics of a person affected by HIV/AIDS.

In the early days, people affected by HIV infection (ODHA) did not show or display the characteristics or symptoms. The characteristics that appear will be seen when entering the 3rd to 6th week after infection, namely fever, painful swallowing, swollen lymph nodes, rash, diarrhea, and coughing. Along with decreasing immunity, PLWHA are starting to show characteristics due to opportunistic infections such as decreased body weight, old fever, fungal infections, tuberculosis, herpes, and PLWHA are increasingly showing characteristics that are getting worse until they enter the AIDS stage (Setiarto & Karo MB, 2021).

### 3.5 Description of Adolescents' Knowledge of HIV/AIDS Prevention

In this study, there were respondents, namely junior high school students in grades 7 and 8 aged 13-15 years. During adolescence there is an increase in the hormones estrogen and progesterone which can cause an increase in risky sexual behavior. This is one of the causative factors of HIV/AIDS. In this case, with an increase in these hormones, it is necessary to have sufficient knowledge related to HIV/AIDS in order to reduce other risk factors for HIV/AIDS.

However, it is still found that teenagers are lacking in knowledge regarding risky sexual behavior (Amelia et al., 2022).

This study discusses the answers that respondents gave to researchers when asked about their knowledge of how to prevent HIV/AIDS. The following are the answers from the respondents.

Informant 1 stated, "Maintaining cleanliness." (IF,01)

The first statement only states that HIV/AIDS prevention can be done by maintaining cleanliness. This cannot be said to be true because HIV/AIDS prevention is not related to hygiene but is related to reproductive health, so it can be concluded that someone who maintains reproductive health has a positive effect on HIV/AIDS (Rukmana & Akbar, 2022).

Informant 2 explained, "It's necessary, you have to be able to take care of yourself, because everyone should be able to avoid and prevent this." (IF,02)

The second statement explains that preventing HIV/AIDS can be done by paying attention to oneself to avoid and prevent things that can transmit it. So it can be seen that the statement given by the respondent to the researcher is still unclear. Prevention of HIV/AIDS can also be prevented by taking care of oneself so as not to fall into promiscuity which can lead to premarital relationships and have a negative impact on HIV/AIDS (Kemenkes RI, 2022).

Informant 3 said, "Maintaining a healthy diet." (IF,03)

The third statement explains that HIV/AIDS can be prevented by preserving food. This cannot be related to the prevention of HIV/AIDS because HIV/AIDS is not related to food. HIV/AIDS cannot be prevented through cutlery or food consumed by sufferers, but rather by avoiding sharing needles with sufferers (Butar & Hamzah, 2022).

Informant 4 responded, "Avoiding sexual relations before marriage." (IF,04)

The fourth statement states that HIV/AIDS can be prevented by avoiding sexual intercourse before marriage. This statement can be said to be true because someone who has sexual intercourse without using contraception and has multiple partners has a greater risk of contracting HIV/AIDS (Ajeng, R. H., Kusumah et al., 2023).

Informant 5 simply said, "I don't know, hehe." (IF,05)

In the fifth statement, the respondent stated that he did not know about HIV/AIDS prevention. HIV/AIDS can be prevented by not having premarital relations, not having multiple partners, using contraception during sexual intercourse, not taking illegal drugs, especially narcotics, and having sufficient knowledge through the education provided. So, judging from the respondents' answers, it can be concluded that the knowledge of adolescents is still low because the statements given by respondents to researchers are not in accordance with HIV/AIDS prevention.

Based on the results of the respondents' statements conducted with FGD, adolescents' knowledge of HIV/AIDS prevention. Respondents gave statements related to HIV/AIDS prevention that were not correct and did not know about the statements given to researchers.

### 3.6 Overview of Adolescents' Knowledge of HIV/AIDS Treatment

In this study, the intended respondents were junior high school youth who were still in grades 7 and 8 aged 13-15 years. At that age, adolescence is vulnerable to risky sexual behavior that can cause HIV/AIDS. This happens because during adolescence there are many changes, both physically and non-physically, one of which is a change in the body and an increase in hormone production. So it can be concluded that there needs to be a balance between physical and non-physical changes in adolescents with good knowledge related to HIV/AIDS so that they are farthest from HIV/AIDS and if their family or close people are affected they know how to treat HIV/AIDS. However, there are still teenagers who do not get good knowledge about HIV/AIDS (Eka et al., n.d.).

Lack of knowledge in adolescents related to HIV/AIDS can cause adolescents to also have a lack of understanding about this disease, one of which is the treatment of HIV/AIDS. Not only that, in this study there were respondents who answered incorrectly when asked about HIV/AIDS treatment.

One informant stated, "Yes, if one is not yet addicted, it can be cured by going to the doctor. Addiction to HIV." (IF,01)

Another participant explained, "Yes, from a psychologist, uhh no, never mind. Oh, so it can be done. I forget everything." (IF,02)

A third participant simply responded, "Yes." (IF,03)

The FGD results that have been carried out show that the level of knowledge among adolescents about HIV/AIDS treatment is still low. Respondents gave an unclear and incomplete statement. In the first statement, it is said that HIV/AIDS can be cured through a doctor if the patient is not yet addicted, in the second statement the respondent also explained that HIV/AIDS can be cured through a psychologist, and in the third statement it is stated that HIV/AIDS can be cured but does not know how to cure it.

Until now, HIV/AIDS cannot be cured, but some treatments can slow the development of the virus (Kemenkes RI, 2022). There is no specific treatment for this disease, but there are only ARVs or antiretrovirals which are drugs to freeze the virus and maintain life. The use of ARVs will work to help maintain the survival of a PLHIV, namely by freezing the HIV/AIDS virus, ARVs are effectively used in combination form not to cure HIV/AIDS. ARVs will make HIV/AIDS patients healthier and more productive and can increase the number of CD4 cells. However, adherence to ARV consumption is still low due to several factors, namely the presence of side factors to the drug, cost factors, and the stigma that exists in society towards PLWHA (Elok & Kolbi, 2022).

### 4. Conclusion

Based on the research findings regarding the knowledge of junior high school students in grades 7 and 8 concerning HIV/AIDS, it can be concluded that the knowledge level of adolescents, who are organizational activists at school and expected to be agents of change, is still relatively low. Respondents' answers from the results of the Focus Group Discussion (FGD) showed a lack of proper understanding of the definition of HIV/AIDS, HIV/AIDS transmission, the characteristics of a person affected by HIV/AIDS, HIV/AIDS prevention, and HIV/AIDS

treatment. As youths actively involved in organizations, they have the potential to play a crucial role in disseminating accurate information about HIV/AIDS to their peers. To address this issue, it is recommended that schools and other relevant stakeholders provide comprehensive sexual education for adolescents, including information about HIV/AIDS, its transmission, prevention, and treatment. Appropriate sexual education can empower adolescents to make informed decisions about their sexual behavior, thereby reducing the risk of contracting HIV/AIDS. Integrating education on sexual health into school subjects can help youths understand this disease comprehensively and realize the importance of sexual health and HIV/AIDS prevention. Additionally, regular and ongoing education related to HIV/AIDS by community organizations outside of school can contribute to increasing youths' knowledge about HIV/AIDS.

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#### References

- Garut.
- Ajeng, R. H., Kusumah, W., Sastramihardja, H. S., & Andarini, M. Y. (2023). Tingginya kejadian HIV/AIDS dengan faktor risiko homoseksual di RSUD Slamet Kab. Dr. https://doi.org/https://doi.org/10.29313/bcIFs.v3i1.5785
- Amelia, R., Taherong, F., & Diarfah, A. D. (2022). Manajemen asuhan ebidanan remaja pada Nn "S" dengan diifinorhea primer di poli kebidanan dan kandungan Rs Islam Faisal Makassar tahun 2021. Jurnal Midwifery, Jurnal 4(1), 30 - 42. Midwifery, 4(1), https://doi.org/https://doi.org/10.24252/jmw.v4i1.28851
- Butar, H. F. B., & Hamzah, I. (2022). Hubungan peningkatan jumlah narapidana pengguna narkoba dan ketersediaan tenaga medis terhadap pengidap Hiv/Aids di lembaga pemasyarakatan. Jurnal Ilmiah Dinamika Sosial, 6(1), 103–115. https://doi.org/10.38043/jids.v6i1.3363
- Eka, H. E., Charla, Sabatina Bingan, E., Mawaddah, S., & Nurjanah, A. (n.d.). Karakteristik remaja terinfeksi HIV yang memanfaatkan program pencegahan penularan HIV ke anak di RSUP P Kota Jakarta Timur. In Kemenkes Palangkaraya. http://e-journal.poltekkes-palangkaraya.ac.id/jfk/
- Elok, V., & Kolbi, L. (2022). Literature review: Faktor-faktor yang mempengaruhi kualitas hidup orang dengan Hiv/Aids (ODHA). Media Gizi Kesmas. https://e-journal.unair.ac.id/MGK/article/view/33884
- Ismail, I. A., Febriyanti, A., Alif, D., Namira, A., & All, E. (2022). Hubungan pengetahuan dan sikap terhadap pencegahan HIV/AIDS pada remaja. International Journal of Academic Health and Medical Research (IJAHMR), 6(5).
- Kemenkes RI. (2020). HIV/AIDS. https://doi.org/https://doi.org/10.4324/9781315700724-16
- Kemenkes RI. (2021). Laporan perkembangan HIV AIDS dan penyakit infeksi menular seksual triwulan I tahun 2021. https://siha.kemkes.go.id/portal/files\_upload/Laporan\_TW\_I\_2021\_FINAL.pdf
- Kemenkes RI. (2022). Peringati hari AIDS sedunia, ini penyebab, kendala dan upaya Kemenkes tangani HIV di https://keifas.kemkes.go.id/konten/133/0/peringati-hari-aids-sedunia-ini-penyebab-Indonesia. kendala-dan-upaya-kemenkes-tangani-hiv-di-indonesia
- (2023). Laporan tahunan HIV AIDS 2022. In Kemenkes RI (pp. 1-91). http://p2p.kemkes.go.id/wp-content/uploads/2023/06/FINAL\_6072023\_Layout\_HIVAIDS-1.pdf
- Kumalasary, D. (2021). Pengetahuan remaja tentang HIV/AIDS. MJ (Midwifery Journal), 1(2), 101-106.
- Marni, M., & Ratnasari, N. Y. (2019). Hubungan perilaku beresiko tertular HIV pada remaja dengan pengetahuan pencegahan HIV / AIDS di Wonogiri. Media Publikasi Penelitian, 17(1), 38-45.

- Novianti, W. (2020). Urgensi Berpikir Kritis Pada Remaja Di Era 4.0. *Journal of Education and Counseling (JECO)*, 1(1), 38–52. https://doi.org/10.32627/jeco.v1i1.519
- Pangaribuan, S. M., Maulidanti, N. N., & Siringoringo, L. (2021). Pengetahuan remaja tentang HIV/AIDS di Kelurahan Menteng Jakarta Pusat. *JAKHKJ*, 7(2), 12–20.
- Rukmana, A. S. M., & Akbar, I. B. (2022). Hubungan tingkat pengetahuan dengan sikap pencegahan terhadap HIV/AIDS pada siswa-siswi IFAN X. *Jurnal Riset Kedokteran*, 2(1), 46–50. https://doi.org/https://journals.unisba.ac.id/index.php/JRK/article/view/876
- Sabhita, D., Winarni, S., & Djuwadi, G. (2022). Pengaruh edukasi menggunakan video tentang Hiv/Aids terhadap pengetahuan dan sikap remaja Di Kecamatan Sananwetan. *Jurnal Pendidikan Kesehatan*, 11(2), 139. https://doi.org/10.31290/jpk.v11i2.3253
- Setiarto, R. H. B., & Karo MB, T. T. (2021). Buku penanganan HIVAIDS. In Mira Muari.
- Syahputra, T., Halim, J., & Ishak, I. (2019). Sistem pakar untuk mendiagnosa penyakit menular seksual (HIV/AIDS) dengan menggunakan metode Case Based Reasoning (CBR). *Jurnal SAINTIKOM (Jurnal Sains Manajemen Informatika Dan Komputer)*, 18(1), 62. https://doi.org/10.53513/jis.v18i1.105
- WHO. (2024). HIV and AIDS. WHO. https://www.who.int/news-room/fact-sheets/detail/hiv-aids?gclid=CjwKCAiA-vOsBhAAEiwAIWR0Tek8NOP\_-eNCTx-682IZNAFUtpFXV0oPYq9Lw3RMHCDHpTDRG6x8nBoCLYgQAvD\_BwE