

HIV / AIDS Prevalence and Risk Factors: Analysis of Changes over Time at H. Adam Malik General Hospital in Medan

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Abstract: **Introduction:** HIV / AIDS has long been one of the epidemic diseases in the world. Some risk factors have proven to be the cause of transmission of HIV / AIDS, such as through sexual intercourse, through non-sterile needles, and others. Until now there are no accurate data on the number of cases and risk factors that influence the development of HIV transmission. This study aims to provide an overview of the characteristics and risk factors for people with HIV / AIDS. **Methods:** This type of research is a descriptive study with a cross-sectional approach. The sample in this study was all HIV / AIDS patients in Haji Adam Malik General Hospital from 2003 to 2018. Inclusion criteria were: All patients with HIV / AIDS were recorded in the Inpatient Installation of the General Hospital of Haji Adam Malik Medan in 2003 - 2018. The exclusion criteria were HIV / AIDS patients who had never been treated at H. Adam Malik General Hospital Medan. **Results:** From 2003-2018 there were 5639 new cases of HIV / AIDS. Of all patients, male patients were 3990 cases (71%) and women were 1649 cases (29%). In 2003 the male ratio: women with HIV was 3.6: 1, whereas in 2018 the ratio of men: women was 1.8: 1. The highest prevalence of age for HIV patients was age 25-49 as much as 68%. Most HIV/AIDS sufferers came from the city of Medan as many as 2264 patients (40%). The most recent education of HIV sufferers was high school graduates with 2959 cases (52%). A total of 2347 people with HIV (42%) worked and as many as 2597 (46%) patients did not work. Risk factors for HIV/AIDS sufferers, namely: 4160 cases (73%) heterosexuals, 722 cases (13%) injection users, 303 cases (5%) homosexuals, 144 cases (3%) perinatal, 134 cases (2%) blood transfusions, 124 cases (2%) unknown, 52 cases (1%) bisexual. **Conclusion:** This study illustrates the distribution of characteristics and risk factors for HIV/AIDS that occurred from 2003-2018.

1 INTRODUCTION

1.1 Background

HIV/AIDS has long been one of the epidemic diseases in the world. From the beginning of the discovery of HIV disease, it is estimated that more than 70 million people are infected with the HIV virus and around 35 million people have died from HIV disease. Globally, as many as 36.9 million of the world's population suffer from HIV by the end of 2017, with total mortality of 940,000 deaths in 2017. As many as 0.8% of the world's population aged 15-49 are HIV sufferers, although the HIV epidemic differs between countries and regions. Africa was most severely affected, with almost 1 in every 25 adults (4.1%) being HIV sufferers and a total of almost two-thirds of the entire HIV population in the world (WHO, 2019).

In 2017, in the Asia Pacific, around 5.2 million people living with HIV. HIV prevalence at 15-49 years of age is around 0.2%. 280,000 new cases of HIV were found throughout 2017, followed by the death rate due to HIV was around 170,000 deaths. Only 53% of HIV-infected adult patients who received antiretroviral therapy and 71% of HIV-infected children also received antiretroviral therapy. In Indonesia HIV cases up to March 2017 accounted for 242,669 cases, with the highest prevalence of HIV incidence in the 25-49 age group as much as 70% and more suffered by men as much as 66% of all HIV cases. North Sumatra is the top 10 region with the most HIV cases in Indonesia, with seventh ranking having 13,454 HIV cases until March 2017 (WHO, 2019).

Some risk factors have been proven to be the cause of transmission of HIV / AIDS, such as through sexual intercourse, through blood

transfusions or blood products that have been mixed with the HIV virus, through non-sterile needles, transplanting HIV-infected organs and transmission from mother to child while at the womb. Until now there are no accurate data on the number of cases and risk factors that influence the development of HIV transmission in the H. Adam Malik General Hospital in Medan. Therefore, it is necessary to conduct a study of the characteristics and risk factors of HIV/AIDS sufferers in Medan. By knowing the risk factors for HIV / AIDS transmission clearly, it is hoped that it can be an input to hospitals and the government to prioritize HIV/AIDS prevention programs appropriately, effectively in accordance with existing resources.

1.2 Methods

This type of research is a descriptive study with a retrospective study design, which collects secondary data on patients with HIV / AIDS at the Haji Adam Malik Central General Hospital in Medan from 2003 - 2018. Samples in this study the entire study population, namely all HIV / AIDS patients in Haji Adam Malik Hospital from January 2003 to December 2018. Inclusion criteria were: All patients with HIV / AIDS were recorded in the Inpatient Installation of the Adam Malik Haji Central Hospital Medan from 2003 - 2018. Exclusion criteria were HIV / AIDS patients who never went to H. Adam Malik General Hospital in Medan.

1.3 Operational Definition

Diagnosis of HIV infection is based on clinical examination and laboratory examination. Laboratory tests include serological tests and virological tests. Criteria for risk factors: heterosexuals are unprotected sexual relations in heterosexuals; homosexuals are unprotected sexual relations with homosexuals (fellow men); bisexual is unprotected sexual intercourse on bisexuals; perinatal is the mother to child transmission during the 20-28 week pregnancy period up to 7-28 days after delivery.

1.3.1 Data Analysis

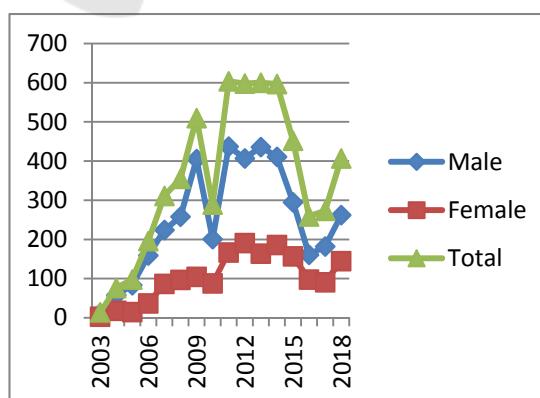
Data from the research results were analyzed statistically with the help of computer programs. Descriptive analysis is used to see an overview of the basic characteristics of patients and risk factors.

1.3.2 Results

Patients with HIV / AIDS in Medan Haji Adam Malik Hospital in the period 2003 - 2018 which were sampled in this study amounted to 5,639 people. Most people with HIV / AIDS in Medan Haji Adam Malik General Hospital are men with a percentage of 71% (3,990 people), while women are 29% (1,649 people).

Table 4.2 Distribution of HIV / AIDS patients in Haji Adam Malik General Hospital in 2003 - 2018 based on sex and incidence per year

Year	Gender		Ratio (M: F)	Total	Percentages (%)
	Male (M)	Female (F)			
2003	11	3	3.6:1	14	0.25
2004	58	18	3.2:1	76	1.35
2005	83	15	5.5:1	98	1.74
2006	159	37	4.3:1	196	3.48
2007	224	87	2.5:1	311	5.52
2008	258	97	2.6:1	355	6.30
2009	405	105	3.8:1	510	9.04
2010	201	88	2.2:1	289	5.13
2011	437	167	2.6:1	604	10.71
2012	407	191	2.1:1	598	10.60
2013	436	164	2.6:1	600	10.64
2014	411	186	2.2:1	597	10.59
2015	295	157	1.8:1	452	8.02
2016	161	98	1.6:1	259	4.59
2017	182	91	2.0:1	273	4.84
2018	262	145	1.8:1	407	7.22
Total	3.990	1649		5639	100,0



Graph 4.2: Overview of the incidence of HIV / AIDS from 2003 to 2018 according to sex

In general, HIV / AIDS infection in Haji Adam Malik Hospital is mostly experienced by the age

group 25-49 years with a total of 3,809 people (68%). While the lowest incidence was found in the age group under one year with a total of 47 people (1%).

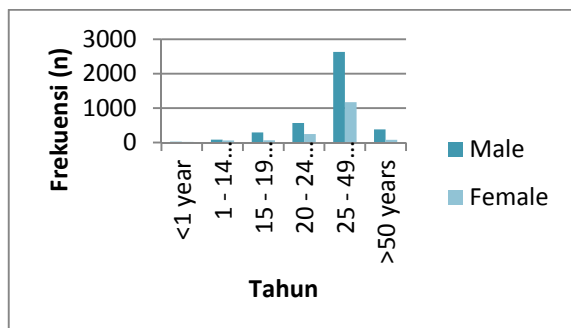


Diagram 4.2 Distribution of HIV/AIDS patients based on age groups 2003 – 2018

From 2003 to 2018, most HIV / AIDS patients in Haji Adam Malik Hospital came from Medan City with a percentage of 40.15% (2,264 cases), followed by Karo and Deli Serdang Districts with a percentage of 11.54% respectively. (651 cases) and 9.54% (538 cases). While those from outside the Province of North Sumatra mostly came from Aceh Province with a percentage of 1.56% (88 cases).

Table 4.4 Distribution of HIV / AIDS patients in Haji Adam Malik General Hospital based on region origin in the period 2003 - 2018

Origin	Total (n)	Percentages (%)
Asahan regency	73	1.29
Batubara Regency	34	0.60
Dairi regency	99	1.76
Deli Serdang regency	538	9.54
Humbang Hasundutan Regency	36	0.64
Karo Regency	651	11.54
Labuhan Batu regency	38	0.67
South Labuhan Batu regency	24	0.43
North Labuhan Batu regency	22	0.39
Langkat regency	302	5.36
Mandailing Natal regency	35	0.62
Nias regency	43	0.76
Phakpak Barat regency	24	0.43
Samosir Regency	39	0.69
Simalungun Regency	103	1.83
Tapanuli Selatan regency	47	0.83
Tapanuli Utara regency	57	1.01
Tapteng regency	39	0.69
	95	1.68
	22	0.39
	83	1.47
	2264	40.15
	31	0.55
	361	6.40

Toba Samosir regency	55	0.98
Kalimantan Province	30	0.53
Binjai city	39	0.69
Medan city	88	1.56
Padang Sidempuan city	2	0.04
Pematang Siantar city	9	0.16
Sibolga city	4	0.07
Tanjung Balai city	1	0.02
Tebing Tinggi city	54	0.96
Aceh Province	5	0.09
Bengkulu Province	2	0.04
DKI Jakarta Province	290	5.14
West Java Province		
Lampung Province		
Riau Province		
Sumatera Barat Province		
Sumatera Selatan Province		
Unknown		
Total	5.639	100,00

The most cases of HIV / AIDS were experienced by sufferers with the last history of high school education with a total of 2,959 people (52.5%), while those with the least amount were those with the most recent education history of the elementary school with 105 people (1.9%).

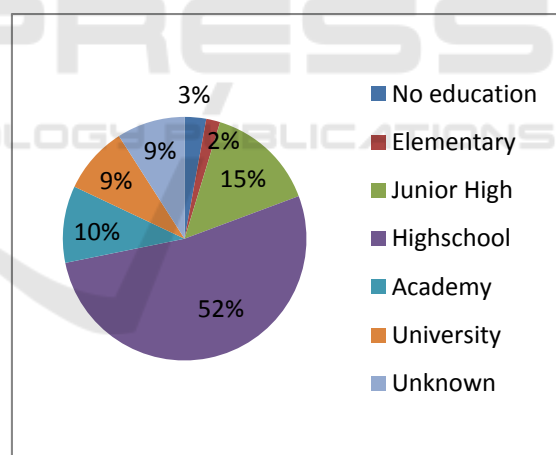


Diagram 4.3 Distribution of HIV / AIDS patients based on recent education history

Based on employment status, HIV / AIDS cases are mostly experienced by patients who do not work with a percentage of 46% (2,597 people). But the number is not much different from the group of patients who work, where the percentage is 42% (2,347 people).

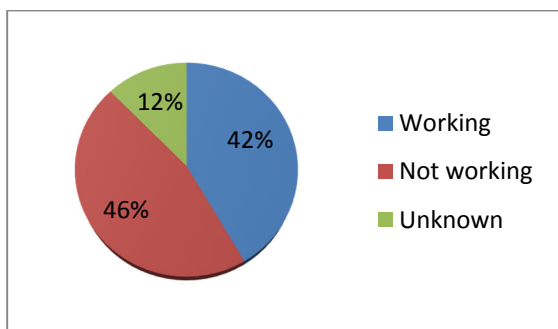


Diagram 4.4: Distribution of HIV / AIDS patients based on employment status

From 5,639 HIV / AIDS cases handled at Adam Malik General Hospital Medan from 2003 to 2018, the majority of cases were experienced in patients who had risk factors for heterosexual risky sex history with a percentage of 73% (4,160 cases), shared needles and drug users. Intravenous drug (IVDU) is 13% (722 cases) and risk sex offenders are 5% (303 cases).

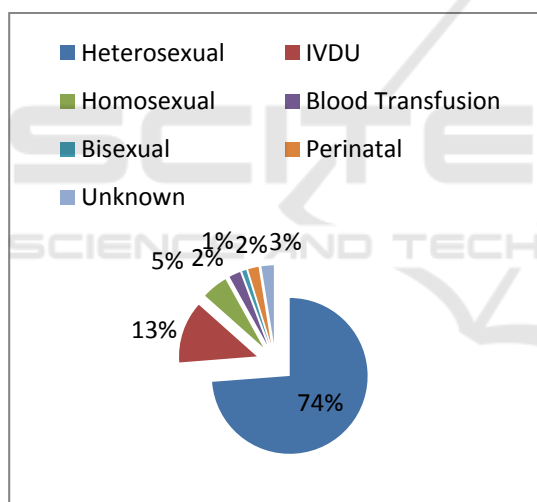
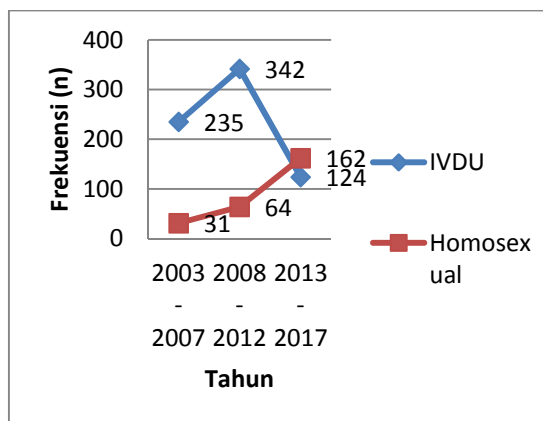


Diagram 4.5 Percentage of risk factors in patients with HIV / AIDS in Haji Adam Malik Hospital Medan 2003 – 2018

In patients with homosexual behavior, initially there were 31 people (2003 - 2007), increasing in 2008 - 2012, namely 64 cases and in 2013 - 2017 there were 162 cases. Conversely, a decrease in the incidence in patients with IVDU risk factors. In 2008 - 2013, the incidence in patients with IVDU risk factors was 342 cases. Looks decreased in 2013 - 2017 to 124 cases.



Graph 4.4: HIV / AIDS incidence per 5 years based on risk factors

2 DISCUSSION

In this study, it was found that there was an increase in new cases of HIV each year. This is in line with data from UNAIDS and the Ministry of Health which also shows an increase in the number of people infected with HIV and die of AIDS globally. Male HIV sufferers more than women with HIV. But if you look at trends every year between 2003 and 2008, the number of female HIV sufferers is increasing. According to WHO, 47% of all AIDS cases worldwide are women. At present, almost half of all new HIV infections are reported in women¹². Non-marital sex that is not protective and sex with commercial sex workers by husbands is described as the most likely source of infection among women. Women can also transmit HIV to their offspring. So AIDS in women is a separate epidemic and the approach to control must be gender specific (WHO, 2009)

The most age group in HIV patients is the age of 25-49 years. This is in line with data from the Ministry of Health¹¹ and WHO¹⁵. Adolescence and young adults are a period of considerable biological and physiological changes and are a developmental phase when involvement in high-risk sexual behavior and alcohol and other drug use peak and the risk of acquiring HIV infection increases¹⁵. Most HIV-AIDS sufferers are at a level of education that is quite good and adequate. A study in Kenya and the Dominican Republic reported that higher education has a positive correlation with safer sex (higher condom use). However, although education can increase knowledge about condoms as HIV prevention, there is still a gap between knowledge and behavior (Minaya, 2008)

In this study, the risk factors including the top 3 were heterosexual, injecting drug users and male fellow men. A unique trend in the number of risk factors for male fellow men is increasing every year, where the number of risk factors for injecting drug users tends to decline from year to year. Risk groups Men with Men (MWM) generally have multiple sex partners and the proportion of unprotected sex is higher than non-MWM, indicating that they are a high-risk population for HIV transmission (Kobolina, 2006)

3 CONCLUSIONS

In this study, there was an upward trend in the incidence of HIV / AIDS from 2003 to 2018. Knowing the prevalence of risk factors found in HIV / AIDS patients in Haji Adam Malik Hospital can be input to hospitals and the government in making HIV / AIDS prevention programs right, effective, and in accordance with existing resources.

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