



Problem analysis of human immunodeficiency virus-acquired immune deficiency syndrome

Chatarina Umbul Wahyuni ^{1*}, Muhammad Maulidin ¹, A. Y. Setiawan ²

¹ Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, INDONESIA

² Jember District Health Office, INDONESIA

*Corresponding author: chatarina.unair@yahoo.com

Abstract

Problem analysis is a fundamental part of health program planning. In 2016, several HIV-AIDS new cases in Jember District was 566 cases, and in 2017 it increased to 637 occurrences, though in 2018 it decreased to 506 cases. This study aimed to analyze the problem priority of HIV-AIDS in Jember District in 2019. A descriptive observational study was conducted in Jember District Health Office in January 2019. The data collected from the Health Profile of Jember District in 2015-2018 and interviews with officers used questionnaire. Determination of problem priority used the criteria of Urgency, Seriousness, and Growth (USG). The cause of the problem was analyzed using Ishikawa method. Determination of the root of the problem on priority problems is done using the 5M theory (Man, Money, Method, Material, Measurement). However, the incidence of HIV cases in Jember District is seen based on influential factors that are Man, Method and Measurement to classify the causative factors. According to the USG method, HIV-AIDS was chosen as the main priority with score 189, and the finding of HIV cases which has not been optimum was selected as the main problem priority. The number of AIDS-related deaths had fluctuated, and there were 73 cases in 2017. HIV-AIDS facts mostly found in men and at the age range of 20-49 years. Based on the Ishikawa method, the root of the problem was the lack of public knowledge about HIV-AIDS and the lack of public awareness to carry out HIV testing. The finding of HIV cases which has not been optimum was the main problem priority. It is necessary to strengthen the cross-program and cross-sector collaboration, maximizing the role of health cadres and peer educators in the community to educate about HIV-AIDS to reduce stigma and discrimination.

Keywords: HIV-AIDS, problem priority, Ishikawa, finding of HIV cases

Wahyuni CU, Maulidin M, Setiawan AY (2020) Problem analysis of human immunodeficiency virus-acquired immune deficiency syndrome. *Eurasia J Biosci* 14: 3267-3272.

© 2020 Wahyuni et al.

This is an open-access article distributed under the terms of the Creative Commons Attribution License.

INTRODUCTION

The definition of health, according to Law No. 36 of 2009 on Health is the state of being healthy, mentally, physically, spiritually, and socially allowing everyone to live productive both socially and economically. The development of health aiming for Healthy Indonesia 2025 has a goal for increasing awareness, willingness, and capability of being healthy for everyone so that the highest community health degree increment can be obtained (Herman, Handayani, & Siahaan, 2013).

Human Immunodeficiency Virus is a virus that can cause AIDS. The HIV attacks the human immune system, so the body becomes weak in fighting off infections (Del Giudice, et al. 2017). HIV-AIDS is one of the critical global health problems due to the high frequency and mortality rate. This disease has spread widely in almost all countries in various parts of the earth. It means that so far nearly no state in any part of the world escapes the reach of the HIV-AIDS problem (Idele, et al. 2014; Schneider, 2020).

Health problem analysis performance is done to increase effectivity and efficiency of health problem solution by choosing the health problem priority in a certain area. Problem priority stipulation is the most crucial part of the problem-solving process due to two conditions. First, it is due to the lack number of the resources available, causing the inability to solve any problem. Second, it is because of the correlation between one problem to another, making it unnecessary to resolve all problems (Putri, & Isnani, 2015; Assogba, et al, 2017).

Problem analysis is the first stage in health program planning to define the problem based on reality. Problem analysis determines the efficacy of the program. It is not arduous to prepare and apply for the program when the issue is adequately defined based on fact. This study aims to identify the problem, seek the problem root, as

Received: September 2019

Accepted: March 2020

Printed: September 2020

Table 1. List of the Top 10 Diseases in Jember District in 2017

No	Diseases	Number of Cases
1	Other Acute Infections of the Respiratory Tract	177,329
2	Primary Hypertension	93,155
3	Gastritis	68,826
4	Headache	65,701
5	Diarrhoea and Gastroenteritis (Colitis)	65,525
6	Other Disorders of Muscle Tissue	54,589
7	Common Cold/Acute Nasopharyngitis	51,008
8	Unknown Fever	47,629
9	Allergic Contact Dermatitis	39,313
10	Pulp and Periapical Tissue Disease	32,829

well as formulate the problem-solving alternative found by the Health Office of Jember in 2019.

MATERIAL AND METHODS

Health Problem Analysis activity is a descriptive observational study was done by the Health Office of Jember starting from January 14th to February 9th, 2019. There are three stages given to analyze the health problem following the problem-solving cycle to the phase of an alternative problem-solving formulation. Health situation analysis and health problem identification were made by studying the secondary data retrieved from the Health Profiles of Jember in 2015 – 2018 and primary data obtained by interviewing related parties (head of the department, section head, and program holder) using a questionnaire. The collected data types are health status data, citizenship aspect, health behavior, environmental data, as well as morbidity and mortality data.

The use of USG method criterion is based on urgency, seriousness, and growth of the problem done to select health problem priority. The scoring system was participated by 15 participants consisting head of the department, section head, and program holder in Health Office of Jember. Following the scoring process, the problem root is identified using the Ishikawa diagram (*fishbone diagram*). Ishikawa diagram is a diagram that shows the relationship between quality characteristics and factors. In this case, quality is a character indicating a result (*output*) of a process due to many factors that influence. Determination of the root of the problem on priority problems is done using the 5M theory (*Man, Money, Method, Material, Measurement*). However, the incidence of HIV cases in Jember District is seen based on influential factors that are Man, Method and Measurement to classify the causative factors. After obtaining the problem root, it is essential to do alternative problem-solving formulation.

RESULTS

Description of the Health Status in Jember

In illustrating the situation of the Jember Health Status, four indicators of health development are used, namely maternal and child mortality, morbidity, life

Table 2. List of Health Problems in Jember District

Health Problems	Indicator of Health Problems	Realization of Health Problems		
		2016	2017	2018
Dengue Hemorrhagic Fever	2,419,000	2,419,000	2,430,185	2,440,714
	∑ Cases	1,298	405	389
	∑ Deaths	9	4	0
HIV-AIDS	∑ Cases	566	637	506
Maternal Mortality Rate	∑ Pregnant Maternal Mortality	11	13	-
	∑ Maternity Maternal Mortality	5	10	-
	∑ Puerperal Maternal Mortality	17	26	-
	∑ Death Cases	33	49	41
Infant Mortality Rate	∑ Cases	218	225	166
Stunting	∑ Stunting	-	29,020	17,574

Table 3. Results of the Assessment of Health Problems with USG Criteria

No	Health Indicators	U	S	G	Score Total	Rank
1	HIV-AIDS	62	66	61	189	I
2	Maternal Mortality Rate	64	65	58	187	II
3	Infant Mortality Rate	64	66	54	184	III
4	Dengue Hemorrhagic Fever	63	61	58	182	IV
5	Stunting	58	60	54	172	V

expectancy and nutritional status. Based on data obtained from the Monthly Report that the number of Community Health Center visits in Jember in 2017 is 1,539,955 visits. We can see ten significant diseases, in **Table 1**, were obtained in 2017.

Priority Problems Selection

After reviewing the data on the Health Profile of Jember in 2015-2018 and on the data from interviews with the head of the department, section head and program holder, a list of health problems was prepared according to a mutual agreement in Jember (**Table 2**).

The selection of priority health problems is made by scoring each health problem with USG criteria, namely urgency, seriousness and problem growth. Scores are in the range of 1-5 by the number of the issues raised. The higher the score indicates that the problem is getting priority. The following is the result of the recapitulation of health problems in Jember with USG criteria followed by 15 participants (**Table 3**). The assessment results indicate HIV-AIDS as priority problems in Jember with a total score of 189. Data on health problems related to HIV-AIDS in Jember are the number of new cases of HIV-AIDS, number of AIDS-related mortality, HIV-AIDS cases based on gender and HIV-AIDS cases based on age.

The discovery of HIV cases has not been maximized. In 2015 the number of new cases of HIV-AIDS in Jember was 669 cases, in 2016 it dropped to 566 occurrences, and in 2017 it increased again to 637 cases then in 2018 it dropped to 506 cases (**Table 4**). The number of AIDS-related mortality in Jember has fluctuated. In 2015 the case fatality rate of HIV-AIDS was 8.52%, in 2016 it increased to 11.31%, and in 2017 it increased again to 11.46% then in 2018 it dropped to 4.74%. Frequency

Table 4. Results of the Number of New Cases HIV-AIDS, AIDS-Related Death Cases, Frequency Distribution Based on Gender and Age

No	Years	New Cases HIV-AIDS	CFR	Gender		Age		
				Male	Female	< 19 Years	20 - 49 Years	> 50 Years
1	2015	669	8.52	381	288	33	575	61
2	2016	566	11.31	279	287	33	483	50
3	2017	637	11.46	333	304	26	549	62
4	2018	506	4.74	252	254	23	445	38

distribution of HIV-AIDS cases by gender in 2015 showed the number of men was 381 cases and women were 288 cases, in 2016 the number of men was 279 cases and women were as many as 287 cases. In 2017, the number of men was 333 cases, and women were 304 cases, then in 2018, the number of men were 252 cases, and women were 254 cases.

In 2015, the frequency distribution of HIV-AIDS cases by age indicated that aged <19 years-old were 33 cases, aged 20-49 years-old were 575 cases, and for aged >50 years-old were 61 cases subsequently. In 2016, people aged <19 years-old were 33 cases, aged 20-49 years-old as many as 483 cases and for those aged >50 years-old were 50 cases. In 2017, people aged <19 years-old as many as 26 cases, aged 20-49 years-old as many as 549 cases and for those aged >50 years-old as many as 62 cases. Later in the year 2018, people aged <19 years-old were 23 cases, aged 20-49 years-old were 445 cases, and for that > 50 years-old were 38 cases.

Problem Root Determination

After determining the priority of the problem using the USG method, Ishikawa diagram (*fishbone diagram*) was prepared to determine the root cause of HIV-AIDS in Jember. The compilation of the Ishikawa diagram was carried out with the head of the department, section head and program holder of the Health Office of Jember (**Figure 1**).

Based on the root problems found in the Ishikawa Diagram (*Fishbone Diagram*), there is a lack of public knowledge about HIV-AIDS and the role of health cadres and peer educators that has not maximized yet. Therefore, it becomes one of the factors that cause the low achievement of testing and handling of HIV-AIDS cases.

Problem Solving Priority Formulation

Determination of the problem root on the priority of existing problems is done using the 5M theory. Nevertheless, the issues contained in the HIV-AIDS program in Jember are seen based on influential factors, namely Man, Method, and Measurement. In the Man factor, there are still patients who pass the follow-up due to the lack of maximum supervision provided, lacking in reporting of HIV's due to initial reports of tests and

treatments that are still lacking. Besides, there is still a lack of awareness of patients to seek treatment even though HIV can only be suppressed by ARV (Antiretroviral) therapy to slow down its growth. Still, the inadequate socialization of HIV also influences this.

In the Method, it can be seen that the discovery of HIV cases has difficulty in determining the initial diagnosis in HIV positive patients due to incomplete data received from the hospital. It is also because the hospital only provides data in the form of figures and does not provide data per case, so it is difficult to determine the initial diagnosis. There is still a lack of utilization of VCT due to the lack of maximal health cadres and peer educators seen from the testing results that have not been maximized.

In the Measurement factor, the lack of openness of the patient with the family due to the community's stigma about HIV is still high. Moreover, the low number of socialization of ARV therapy is also affected because the role of cadres and peer educators is not yet optimal towards the achievement of tests and handling of HIV-AIDS cases.

DISCUSSION

The situation faced by people with HIV-AIDS is very complicated. Besides having to deal with the disease, they also face the stigma and discrimination, so that they experience physical, psychological and social problems. In some areas, negative thoughts about HIV have become the norm. Many people think that HIV is an incurable disease and inevitably ends in death. They even assume that HIV is a curse. They do not know how HIV is transmitted and are irrationally afraid of being infected by HIV-infected people. HIV transmission is often associated with moral violations related to sexual behavior, so that people who are infected with HIV are labelled as having done a bad thing. The use of VCT services is also inseparable from the stigma in the community and individual awareness of HIV-AIDS risk groups (Burhan, 2013; Porto, et al. 2014). Research on the influence of community stigma on the use of VCT clinics should be conducted in Jember due to the high level of negative stigma in Jember community regarding HIV-AIDS.

Given that the case of HIV-AIDS is an iceberg phenomenon, the number of instances found is less than the actual amount in the population or other words; the official report does not reflect the real problem. It is necessary to make a comprehensive primary health care effort by creating an extensive effort covering preventive, promotive, curative and rehabilitative (Hardisman, 2009; Tufts, Clements, & Wessell, 2010).

Besides, it should be remembered that in the case of HIV-AIDS, there is a "*window period*", i.e. the period in which a person infected with HIV has not produced antibodies to the virus so that test results are negative.

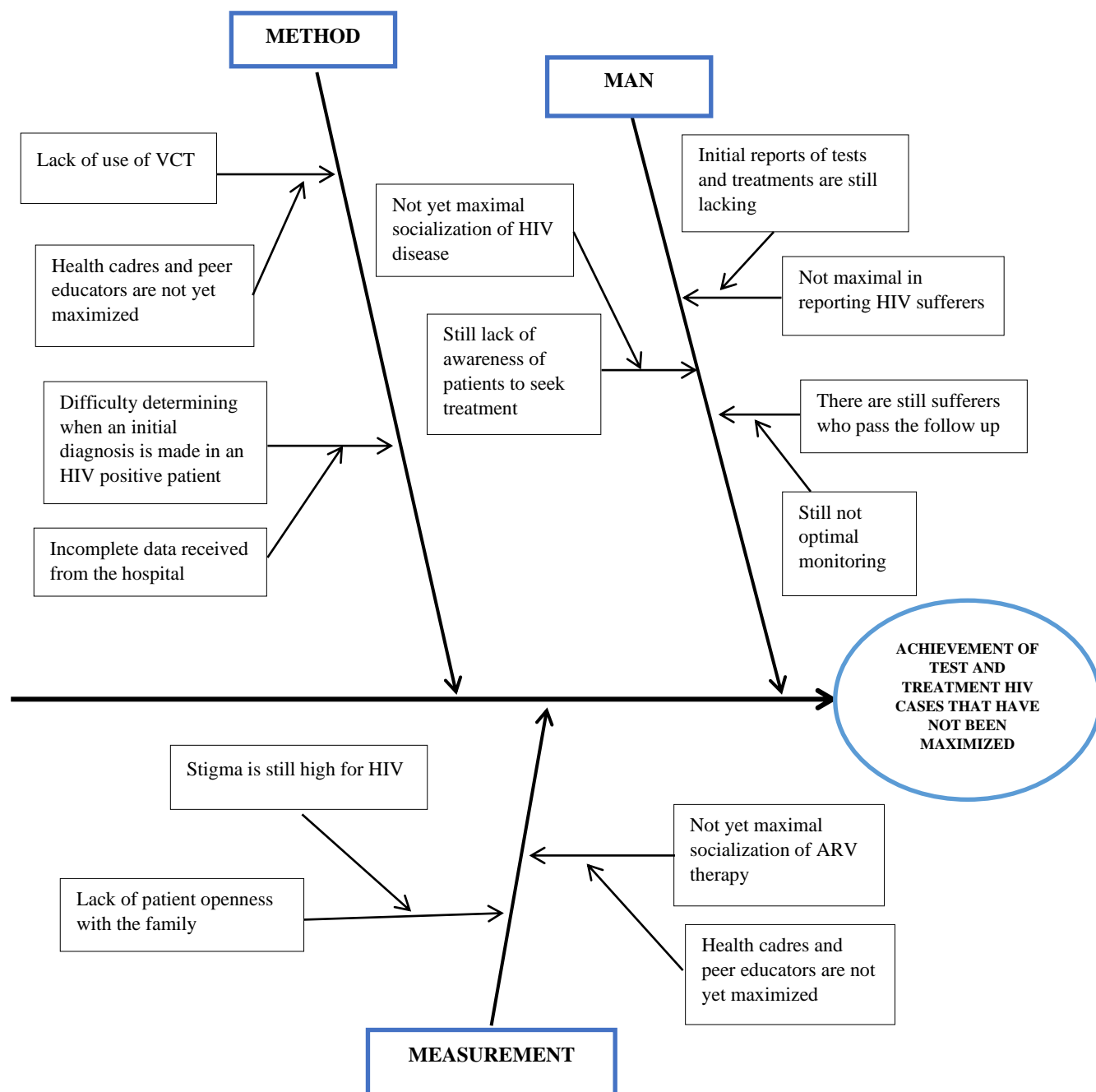


Fig. 1. The Ishikawa Diagram of HIV-AIDS Problems in Jember District

Although at that time, the results of the HIV test were negative, transmission continued. It needs to be considered to reduce the number of new cases of HIV (Idemudia, & Matamela, 2012; Van Dyk, 2010).

In **Table 4**, it is seen that new cases of HIV-AIDS in Jember during 2015-2018 tended to be higher in male. It might be related to the type of work of men who demand high mobility.

Research on the relationship between mobility and the spread of HIV-AIDS has been conducted in Jember. The results of the study indicate that many residents do vertical movement by leaving work as farmers to

become factory workers or other jobs in urban areas. It allows male residents who engage in premarital sex or sex with sex workers. In contrast, female residents who mobilize to the city are faced with "survival sex" conditions because they are lack of adequate skills and education (Rokhmah, 2014; Silver, 2019).

In **Table 4**, it can be seen that the majority of PLWHA (People Living with HIV-AIDS) are in the age group of 20-49 years-old. It is the productive age. Early antiretroviral therapy (ARV) and appropriate in PLWHA is expected to reduce morbidity and mortality, improve quality of life, maintain immunity, and suppress virus

replication as much as possible. To achieve the therapeutic effect of suppressing virus replication optimally, it requires an adherence rate of at least 95%. Mentoring PLWHA by a Drugs Supervisor becomes very important, especially for the success in achieving adherence to taking ARV drugs in PLWHA. PLWHA Drug Supervisor can come from family members, friends, PLWHA volunteers, members of the AIDS care forum, as well as a health worker (Culbert, et al. 2015; Rahmalia, et al. 2015).

LIMITATION OF THE STUDY

The limitation in this study is the limited time and inability to conduct interviews directly with PLWHA, so the root cause of the problem is only based on the system approach (Man, Method and Measurement) in the Health Office of Jember.

CONCLUSION

Based on the results of the analysis of health problems in the Health Office of Jember, it was discovered HIV cases that are not optimal is the priority problem. Based on Ishikawa diagram (*fishbone diagram*), the root of the HIV-AIDS problem that occurred in Jember is due to the lack of public knowledge about HIV-AIDS and the lack of public awareness to carry out HIV testing. It is necessary to increase and expand cross-sectoral and cross-program collaboration. It aims to get involved in HIV prevention and control by conducting self-socialization activities in the surrounding environment and optimizing training to increase the number of health cadres and peer educators in the community to reduce stigma and discrimination.

REFERENCES

- Assogba, S., Noumavo, P. A., Dagbenonbakin, G., Agbodjato, N. A., Akpode, C., Koda, A. D., ... & Blanca, M. (2017). Improvement of Maize Productivity (*Zea Mays L.*) by Mycorrhizal Inoculation on Ferruginous Soil in Center of Benin. *International Journal of Sustainable Agricultural Research*, 4(3), 63-76.
- Burhan, R. (2013). Pemanfaatan pelayanan kesehatan oleh perempuan terinfeksi HIV/AIDS. *Kesmas: National Public Health Journal*, 8(1), 33-38.
- Culbert, G. J., Earnshaw, V. A., Wulanyani, N. M. S., Wegman, M. P., Waluyo, A., & Altice, F. L. (2015). Correlates and experiences of HIV stigma in prisoners living with HIV in Indonesia: a mixed-method analysis. *Journal of the Association of Nurses in AIDS Care*, 26(6), 743-757.
- Del Giudice, G., Goronzy, J. J., Grubeck-Loebenstein, B., Lambert, P. H., Mrkvan, T., Stoddard, J. J., & Doherty, T. M. (2017). Fighting against a protean enemy: immunosenescence, vaccines, and healthy aging. *npj Aging and Mechanisms of Disease*, 4(1), 1-8.
- Hardisman, H. (2009). HIV/AIDS di Indonesia: Fenomena Gunung Es dan Peranan Pelayanan Kesehatan Primer. *Kesmas: National Public Health Journal*, 3(5), 236-240.
- Herman, M. J., Handayani, R. S., & Siahaan, S. A. (2013). Kajian praktik kefarmasian apoteker pada tatanan rumah sakit. *Kesmas: National Public Health Journal*, 7(8), 365-372.
- Idele, P., Gillespie, A., Porth, T., Suzuki, C., Mahy, M., Kasedde, S., & Luo, C. (2014). Epidemiology of HIV and AIDS among adolescents: current status, inequities, and data gaps. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 66, S144-S153.
- Idemudia, E. S., & Matamela, N. A. (2012). The role of stigmas in mental health: A comparative study. *Curationis*, 35(1), 1-8.
- Porto, T. S. A. R., Silva, C. M., & Vargens, O. M. D. C. (2014). Caring for women with HIV/AIDS: an interactionist analysis from the perspective of female healthcare professionals. *Revista gaúcha de enfermagem*, 35(2), 40-46.
- Putri, D. T. N., & Isnani, G. (2015). Pengaruh minat dan motivasi terhadap hasil belajar pada mata pelajaran pengantar administrasi perkantoran. *JPBM (Jurnal Pendidikan Bisnis dan Manajemen)*, 1(2), 118-124.
- Rahmalia, A., Wisaksana, R., Meijerink, H., Indrati, A. R., Alisjahbana, B., Roeleveld, N., ... & van Crevel, R. (2015). Women with HIV in Indonesia: are they bridging a concentrated epidemic to the wider community?. *BMC research notes*, 8(1), 757.
- Rokhmah, D. (2014). Implikasi Mobilitas Penduduk dan Gaya Hidup Seksual terhadap Penularan HIV/AIDS. *KEMAS: Jurnal Kesehatan Masyarakat*, 9(2), 183-190.
- Schneider, M. J. (2020). *Introduction to public health*. Jones & Bartlett Learning.
- Silver, R. E. (2019). *Sex, Schooling, and Moral Triage in Malawi*. The University of Wisconsin-Madison.

- Tufts, K. A., Clements, P. T., & Wessell, J. (2010). When intimate partner violence against women and HIV collide: Challenges for healthcare assessment and intervention. *Journal of Forensic Nursing*, 6(2), 66-73.
- Van Dyk, A. C. (2010). *HIVAIDS care and counselling: a multidisciplinary approach*. Pearson South Africa.

www.ejobios.org