Representation of Dimensions Supporting and Inhibiting HIV/AIDS Information System in Surakarta Indonesia

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Abstract. This research aims to study dimensions supporting and inhibiting HIV/AIDS Information System (SIHA) in Surakarta Indonesia using Hall's representation theory. Primary data used in this exploratory research conducted in Surakarta Indonesia derived from staff of Information Technology of Surakarta's Health Office, Voluntary Counselling and Testing clinic of Dr. Oen Hospital of Surakarta, Public Health Centre of Banjarsari Surakarta, and outreach workers and administration staff of SPEK-HAM, and some people with HIV/AIDS in Surakarta. Secondary data were document and archive relevant to HIV/AIDS information. Data were collected through observation, in-depth interview, and documentation. Data validation was conducted using data source triangulation and data were analysed using interactive model. Result shows that SIHA could be learnt, operated, processed, and managed according to SIHA operation. Promotive, preventive, curative, and rehabilitative programs related HIV/AIDS is less optimal in Surakarta, because of IT personnel operating SIHA mastering poorly the HIV/AIDS recording and reporting system, budget not supporting information system development; error server, limited internet access and not well-maintained open access data, leading to incomplete data and information on HIV/AIDS. Optimizing the implementation of SIHA in Surakarta Indonesia must be supported by capacity building of officers in information technology, financial support, and an integrated information system.

Keywords: Representation, supporting and inhibiting dimensions, HIV/AIDS Information System

1 Introduction

HIV/AIDS is serious problem and challenge to public health, because it transmits so quickly that its management requires special attention; moreover no drug has been found to cure HIV/AIDS comprehensively. The data of the Republic of Indonesia's Ministry of Health in 2022 indicates that people with HIV (PWH) are found in 338,760 cases up to September 2022 and cumulatively 140,024 AIDS cases are found up to June 2022. In the period of January-June 2022, about 18,479 persons have received ARV medication. The PWH cases found in the period of January-June 2022 consist of 25-49 year (68.1%) and male groups (70%). Meanwhile, the AIDS cases were reported in 1,531 persons in the period of April-June 2022, consisting of 20-

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29 year age group as the one with highest percentage of AIDS (31.6%), 30-39 year age group (31.5%), and 40-49 year age group (19.7%). Five provinces with the largest number of AIDS cases reported are: Bali, Sulawesi Selatan, Papua, *Jawa Timur* (East Java), and *Sumatera Utara* (North Sumatera).

In Central Java Province, the number of positive HIV cases was reported to increase over years, but in 2021 it began to decrease and 2,708 cases were reported. The estimated number of people at risk of infection in 2021 is 654,951 people, 79.1 percent of this number (517,812 people) have received standard HIV early detection services. The discovery of HIV cases in men is more common than in women and affects ages from early to old age. In 2021, there were 835 new cases of Acquired Immunodefficiency Syndrome (AIDS), a decrease compared to that in 2020 (1,549 cases).

Meanwhile, in Surakarta and surrounding areas, in the first semester of 2022, there were 120 HIV/AIDS cases, consisting of 70 HIV and 50 AIDS cases. In Surakarta City area, 982 people have been infected with the HIV/AIDS virus, and 158 of them have died. The number of cases of HIV/AIDS infection has been calculated since 2005. In fact, recently HIV/AIDS is found to infect a number of adolescents in Surakarta city.

The government is obliged to strengthen the health care system, expand treatment coverage, and address the HIV/AIDS problem through improving prevention programs [1,2]. In Law of the Republic of Indonesia no. 36 of 2009 concerning Health mandates that to carry out effective and efficient health efforts, health information is needed which is organized through health information systems and across sectors. The Republic of Indonesia's Government Regulation Number 46 of 2014 concerning Health Information Systems states that to support the implementation of health development, detailed and classified Health Data, Information and Indicators are required which are managed in the Health Information System.

HIV AIDS Information System (Indonesian: *Sistem Informasi HIV AIDS*, thereafter called SIHA) is a web-based information system application developed by the Indonesian Ministry of Health to support recording and reporting on HIV AIDS services. SIHA is still not optimal because it is not integrated, lacks flexibility and so on. The quality of SIHA is still not optimal, in fact the information is not fast enough, less complete, less relevant and less accurate so the quality is also not optimal [3,4].

SIHA is interpreted differently by its users, both individuals and institutions. The meaning of SIHA is constructed by the representation system and produced through verbal and visual expressions. The representation system is composed not of individual concepts, but rather through ways of organizing, organizing and classifying concepts as well as various complex relationships. Representation has two main processes. Mental representations are in the form of concepts about something that exists in each of our heads (conceptual maps). The form is still something abstract. Language representation, this process plays an important role in the production of meaning. The abstract concepts in our heads are then translated into frequently used language, so that we can connect concepts and ideas about something to certain signs or symbols. This relationship is called representation [5].

If the system is difficult to use for service processes, the methods for evaluating information system recording and reporting will include the Performance, Information, Economic, Control, Efficiency and Services (PIECES) method aiming to find out problems

arising and will be usable as a reference for improving and developing information systems . The Technology Acceptance Model (TAM) method for evaluating the use of information systems can analyse the acceptability of SIHA application to the users and can provide recommendations for system improvements and development for SIHA management to make SIHA to be better and more useful [6,7]. This research aims to study the Representation of Dimensions Supporting and Inhibiting HIV/AIDS Information System in Surakarta, Indonesia.

2 Methodology

This exploratory research took place in Surakarta, Indonesia. Primary data was obtained from the Information Technology staff of the Surakarta Health Service, the Voluntary Counselling and Testing (VCT) clinic at Dr. Hospital. Oen Surakarta, Banjarsari Surakarta Community Health Centre, 3 (three) outreach workers and 1 (one) SPEK-HAM administrative staff as facilitator NGO as well as 5 (five) people living with HIV/AIDS in Surakarta. Secondary data included documents and archives relevant to HIV/AIDS information. Data was collected through observation, in-depth interviews and documentation. Validity test on the data was carried out using data source triangulation and data analysis was done using an interactive analysis model [8].

3 Results and Discussion

3.1 Results

SIHA has been used since 2012. Surakarta Healthcare Service Office is an agency to implement SIHA. In addition, SIHA is also used in hospitals, public health centres (Indonesian: *Pusat Kesehatan Masyarakat*, thereafter called *Puskesmas*) and clinics existing in Surakarta. Data and information recorded and reported by users include the number of HIV/AIDS cases, the proportion of HIV positive cases by gender and age group, the number of AIDS death cases, the achievement of HIV testing targets in key populations and populations at risk, the achievement of people tested for HIV, Cascading achievement, HIV cascading and others. These data and information were acquired from facilitator and outreach workers for groups at high risk of contracting HIV/AIDS and the general public. This data is input by IT staff at clinics, public health centres (*Puskesmas*), hospitals, NGOs, and Regional AIDS Commission and is connected to SIHA of the Surakarta Health Service Office [9].

An IT staff at Banjarsari Public Health Centre (Puskesmas Banjarsari) and VCT Clinic at Dr. Oen states that the recordings of positive and negative patient data in the system are still mixed-up. SIHA cannot detect the loss of follow-up patients in the ARV treatment process as some errors often occur in the server. This makes the performance of information system less than optimal. Additionally, there is often duplication in recording and reporting HIV/AIDS data by officers, because the system does not contain average (mean) menu in the patient search process so that the users have to search manually every month during certain year period.

SIHA can provide use value because SIHA officers/users have received training and some officers are assigned to repair and develop SIHA in an open source manner, with the costs of improving the system borne by the organizer. The security aspect of system is not protected

from attempts to misuse the system. Although officers have had usernames and passwords, no restriction is available on access rights. Only one username and one password are given for each service, so it is necessary to grant access rights to officers who use SIHA. SIHA users can easily learn, operate and process data on SIHA, because there is a guide book related to the SIHA operations and training is provided during the operation of system. SIHA users stated that SIHA provides convenience to its users when carrying out recording and reporting services for HIV/AIDS patients.

SIHA was built to maximize the healthcare service process, but in its implementation some problems often arise, for example errors often occur when inputting patient data or sending reports. In addition, SIHA is also difficult to access because it can be accessed on Mozilla Firefox only rather than other browsers. Some users' laptop devices are unable to keep up with SIHA because SIHA cannot be accessed on laptop devices with too many applications.

SIHA has been running well. SIHA is useful and beneficial in recording and reporting HIV/AIDS. SIHA makes the user's work easier so that users feel happy and enjoy using SIHA and can accept well the use of SIHA application. Users will keep using SIHA application for a long time and duration to complete their work.

3.2 Discussion

The target of stopping the HIV/AIDS transmission is not easy to achieve because HIV/AIDS cases are like an iceberg phenomenon apparently very small from the top but very large in reality. The Indonesian government already has a one-stop integrated recording and reporting system, SIHA; thus, the recording process can run more optimally.

SIHA specifically functions as official HIV-AIDS and STI recording and reporting covering district, provincial and national levels in one credible, legal and one-stop national data bank so that it can support the treatment and recording of HIV/AIDS patients. A quality information system provides relevant and updated data, accessible to the right people in different places/locations and in a format that can be used [10,11].

The Surakarta Health Service Office has used SIHA to provide HIV/AIDS Recording and Reporting Services in Surakarta which has been running since 2016. However a variety of obstacles are faced in the process of implementing this information system affecting the quality of HIV/AIDS recording and reporting in Surakarta.

HIV/AIDS health data and information include the number of HIV/AIDS cases, the proportion of positive HIV cases according to gender and age group, the number of AIDS deaths, the achievement of HIV testing targets in key populations and populations at risk, the achievement of people tested for HIV, and the achievement of cascading, HIV Cascading and others becoming important references in determining the decision of regional and central governments for HIV/AIDS prevention and control programs and activities [5,12]. Therefore, a proper management of HIV/AIDS data and information is needed to ensure the availability, quality and access to health information.

4 Conclusion

SIHA can be studied, operated, processed and managed according to SIHA operational guidelines and training. In Surakarta SIHA is less optimal because the IT officers who operate SIHA do not understand the HIV/AIDS recording and reporting system, the budget does not support the development of information systems, server errors often occur, internet access problems and open access data security are not protected and therefore, HIV/AIDS data and information are incomplete. It results in less optimal promotive, preventive, curative and rehabilitative programs related to HIV/AIDS.

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