

Implementation Standard Precaution of Risky Dental Treatments on Patient with HIV-AIDS in X Public Health Center Yogyakarta

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INDEXING

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ABSTRACT

Health services are currently required to do services by following implementation standard precaution that has been established, to create good quality services. Infection that needs to be an alert for the dental health care professional is the Human Immunodeficiency Virus. Implementation standard precautions need to be applied to a patient with HIV-AIDS or non-HIV-AIDS infection on risky dental treatments. Qualitative research was chosen in this case studies. The approach in this study is a content analysis which means analyzing the contents of interview results, direct observation, and document observation. Direct observation of PLHIV patients was done perfectly: hand hygiene 46.7%, PPE 95.5%, safe injection 100%, waste and sharp object management 75%, patient care equipment 80%, linen management 100%, environmental management 53.3%, employee health protection 0%, and cough ethics 0%. Results of documents observations related to hand hygiene, patient care equipment, and environmental management are well listed; related to PPE, management of waste and sharp objects, and employee health protection are listed but not yet complete; and related to safe injections, linen management, and cough ethics are not listed on document in X Public Health Center Yogyakarta. Implementation standard precaution overall is quite good and still needs to be improved, in order to prevent and control infections, especially HIV-AIDS infections in X Public Health Center Yogyakarta.

Kata Kunci:

Kewaspadaan Standar;
Pasien dengan HIV-AIDS;
Perawatan Gigi Berisiko;

Pelayanan kesehatan saat ini dituntut melakukan pelayanan sesuai penerapan kewaspadaan standar yang ditetapkan, demi terciptanya pelayanan yang bermutu. Salah satu infeksi virus yang perlu menjadi kewaspadaan para tenaga medis gigi adalah Human Immunodeficiency Virus. Penerapan kewaspadaan standar perlu diterapkan pada pasien dengan HIV-AIDS atau tanpa HIV-AIDS pada perawatan gigi berisiko. Penelitian kualitatif dan jenis penelitian adalah studi kasus. Pendekatan dalam penelitian ini adalah analisis isi. Menganalisis isi dari hasil wawancara, checklist observasi langsung, dan observasi dokumen. Hasil observasi langsung pada pasien ODHA yang dilakukan dengan sempurna: kebersihan tangan 46.7%, APD 95.5%, penyuntikan yang aman 100%, manajemen limbah dan benda tajam 75%, peralatan perawatan pasien 80%, penanganan linen 100%, manajemen lingkungan 53.3%, perlindungan kesehatan karyawan 0%, dan etika batuk 0%. Hasil observasi dokumen terkait kebersihan tangan, peralatan perawatan pasien, dan manajemen lingkungan sudah tercantum dengan baik; terkait APD, manajemen limbah dan benda tajam, dan perlindungan kesehatan karyawan sudah tercantum tetapi belum lengkap; dan terkait penyuntikan yang aman, penanganan linen, dan etika batuk tidak tercantum dalam dokumen Puskesmas X Yogyakarta. Penerapan kewaspadaan standar secara keseluruhan cukup baik dan masih perlu ditingkatkan lagi untuk mencegah dan mengendalikan infeksi terutama infeksi HIV-AIDS di Puskesmas X Yogyakarta.

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INTRODUCTION

HAIs are infections that occur in patients and health workers in health services during the treatment process or while working in health services.¹ Dentists are one of the professions susceptible to HAIs, usually

caused by dental treatments that are often in contact with blood, tissues, and secretions of fluids which have the potential to transmit infections. One viral infection that needs to be alert for dental health workers is Human Immunodeficiency Virus (HIV).²

The number of HIV-AIDS cases at Special Province of Yogyakarta in period 1993-2016 was 3,334 cases of HIV and 1,314 cases of AIDS. The highest number of HIV-AIDS cases was (23.2%) in Yogyakarta City, followed by Sleman District (23%), and Bantul District (22.3%).¹ People with HIV-AIDS 40% -50% have problems with their dental and oral health. Therefore, dentists in practice must be prepared to get patients with HIV-AIDS.¹

Tooth extraction is one of the dental treatments that have a high risk to transmit HIV-AIDS infection.⁴ Cleansing tartar is also a dental treatment that has the potential to transmit an infection through blood droplets. This is too risky for dental health workers who are taking treatments on PLHIV patients. This spark also causes contamination of objects around it that has the potential to transmit infection.⁵

According to the results of the interview with the companion coordinator of the PLHIV in the city of Yogyakarta, it was said that most PLHIV friends did dental treatments at X Public Health Center Yogyakarta. According to the results of recapitulation in 2013-2017, there were 8 dental extractions both permanent and primary teeth or around 11.3% of all dental treatments, and tartar cleansing has 4 visits or about 5.6% of all dental treatments for PLHIV in the X Public Health Center in Yogyakarta.⁶

Strategy to prevent and control HIV-AIDS infection in dental health services is standard precautions. Standard precautions in implementing dental health services include 9 items including hand hygiene, personal protective equipment (PPE), safe injection, waste and sharp objects management, patient care equipment, linen management, environmental management, employee health protection, and cough ethics. In the practice of dental services, structural workers should make procedures in accordance with applicable regulations and functional personnel carrying them out according to established procedures. If not, it can be detrimental to dental health workers themselves and patients who are

treated because in doing dental and oral treatments, it is directly related to the patient's oral cavity as a mediator of HIV-AIDS infection.⁷

Based on the description of the problem above, the researcher would like to analyze the implementation standard precautions as prevention and control of HIV-AIDS infection in high-risk dental treatments at X Public Health Center Yogyakarta.

RESEARCH METHOD

This research is qualitative and type of this research is a case study regarding the analysis implementation of standard precautions for HIV-AIDS infection prevention and control in high-risk dental treatments at X Public Health Center Yogyakarta. Qualitative researchers as human instruments functioned to determine the focus of research, chose informants as data sources, conducted data collection, assessed data quality, analyzed data, interpreted data and made conclusions on their findings. The qualitative approach used in this study was a content analysis which included analyzing interview contents from informants, directing observation checklist, and documenting observation. Primary data were obtained from in-depth interviews and direct observation, while secondary data were obtained from document observation. Data collection requires tools as additional instruments. The instruments in question were ballpoint, cellphone, interview questionnaire sheet, paper, direct observation checklist sheet, and document observation checklist.

RESULT AND DISCUSSION

Document Observation Results at X Public Health Center Yogyakarta

X Public Health Center Yogyakarta in developing efforts provides HIV-AIDS Comprehensive Services (LKB) carrying out its functions coordinates across sub-district level through regular meetings held at the sub-district level. This situation can be seen in the following table.

Table 1. Cases of Infectious Diseases in X Public Health Center Yogyakarta

Num	Disease	2014	2015	2016	2017	2018
1	DHF	16	25	54	19	3
2	Diarrhea	242	551	510	573	763
3	HIV-AIDS	12	22	68	60	127
4	Leprosy	0	0	0	0	0
5	Malaria	0	0	0	0	0
6	Tuberculosis	24	28	39	28	21

Based on table 1. Infectious diseases above can be seen as an increasing case from year to year. The biggest

increase was the case of HIV-AIDS which in 2018 doubled from 2017 and increased tenfold from 2014.

This trend needs special attention for health workers at X Public Health Center Yogyakarta in order to prevent and control infectious diseases and increase the degree of public health. The lack of concern about the application of health workers in implementing standard precautions may also cause infectious diseases to happen.

The next data on documents at a dental clinic in X Public Health Center Yogyakarta imply that the availability of facilities, information, and documents on this dental clinic are still unavailable. In the following can be seen a table about the availability of documents.

Table 2. Availability of Documents at X Public Health Center Yogyakarta

Num	Documents	Exist	Doesn't Exist
1	SOP (Standard Operating Procedure) hand hygiene that is posted on the wall	√	
2	SOP for the use of PPE attached to the wall		√
3	SOP of cough ethics posted on the wall		√
4	SOP for handling syringes and other SOPs posted on the wall		√
5	SOP document hand hygiene	√	
6	SOP document for using PPE	√	
7	SOP document management of waste and sharp objects	√	
8	SOP document environmental management	√	
9	SOP document handling linen		√
10	SOP document for patient care equipment	√	
11	SOP document for employee health protection	√	
12	SOP document safe injection		√
13	SOP document for cough ethics		√

Based on table 2, it is known that there are still facilities that do not exist in dental health services, such as the absence of SOPs for the use of PPE which are attached to the wall, cough ethics SOPs attached to the wall, syringe SOPs and other SOPs posted on the wall, linen handling SOP documents, safe injection SOP documents, and cough ethical SOP documents. The guidelines used are the Standards for the Prevention and Control of Infection of Dental and Oral Health Services in Health Care Facilities based on the Ministry of Health

of the Republic of Indonesia in 2012. The prevention and control team coordinator has a role in providing training and training to public health center staff, conducting periodic evaluations of prevention and control effectiveness and the incidence of infection in a public health center.

The next table is risky dental treatments for PLHIV and non-PLHIV patients at a dental clinic in X Public Health Center Yogyakarta that can be seen as follows.

Table 3. Recapitulation of Dental Treatments at Risk to PLHIV and Non-PLHIV Patients at Dental Clinic in X Public Health Center Yogyakarta

Num	Treatments	PLHIV Patient	Non-PLHIV Patient
1.	Tooth extraction with block anesthesia and infiltration anesthesia	2	21
2.	Tooth extraction with topical anesthesia and chlor ethyl	0	13
3.	Scaling / tartar cleaning	3	15
4.	Tooth filling with composite resin near soft tissue	1	21
5.	Tooth filling with glass ionomer cement near soft tissue	0	1
	Total	6	71

Based on table 3 above, it can be observed that the treatment of "scaling / cleaning of tartar" is mostly carried out by dental health workers in X Public Health Center Yogyakarta for PLHIV patients with 3 patient visits. The treatments were carried out to reach 6 patient visits for 14 working days. Treatments of "tooth extraction with block anesthesia and infiltration anesthesia" and "tooth extraction with composite resin

near soft tissue" are mostly carried out by dental medical personnel in X Public Health Center Yogyakarta for non-PLHIV patients with a number of each -one 21 patient visits. The treatments were carried out to reach 71 patient visits for 14 working days. These treatments have a high risk of infection transmission, especially HIV-AIDS infection. Therefore, the good implementation of standard precautions is needed.

Result of Interviews with Informants in X Public Health Center Yogyakarta

In the following are primary data from interview.

Results about standard precaution risky dental treatments at a dental clinic in X Public Health Center Yogyakarta.

Table 4. Results of Interviews with Informants

Num	Standard Precaution	Results of Interviews
1	Hand Hygiene	<ul style="list-style-type: none"> All dental health workers do not know the indication of handwashing yet. They may also not perform 7 steps of handwashing yet. It is standard, but the sink faucet and place have not met the standard.
2	Personal Protective Equipment	<ul style="list-style-type: none"> Not all PPEs are used by operators. PPE is used one time except for protective glasses.
3	Waste and Sharp Object Management	<ul style="list-style-type: none"> Solid waste has been separated between medical, non-medical, and sharp objects and then processed by a third party appointed by the Health Office. Liquid waste is managed by the Health Ministry.
4	Patient Care Equipment	<ul style="list-style-type: none"> It has been done well by immersing the disinfectant solution, washing and drying it, entering sterilizer, entering the sterile instrument cabinet
5	Linen Management	<ul style="list-style-type: none"> The dental poly linen is the cleanest because it is bought every year, replaced by a clean one every day and cleaned by a third party once a week.
6	Environmental Management	<ul style="list-style-type: none"> It has been tried as much as possible in maintaining the comfort and cleanliness of the health center.
7	Employee Health Protection	<ul style="list-style-type: none"> There has never been a vaccination because of budgeting problems and do not need to be implemented.
8	Cough Ethics	<ul style="list-style-type: none"> Patients with coughs are provided with masks in the registration section and are considered to be effective, for medical personnel, they must use a mask or back of the arm or tissue.

Discussion

Standard Precautions related to Hand Hygiene in X Public Health Center Yogyakarta

The results of direct observation of non-PLHIV patients with a total of 71 visits were observed in 4 observation assessments. The observations regarding hand hygiene that had the most done perfectly were "operators have short and clean nails", which is 71 or (100%). The most incomplete was "the operator is washing hands after removing the glove", which is 44 or (62%). The most not implemented assessment was "operators wash their hands before taking action" which is 15 or (21.1%).

The direct observation of PLHIV patients with a total of 6 visits was observed in 4 observation assessments, of which the most done perfectly was "the operator has short and clean nails" which is 6 or (100%). The most incomplete assessments were "the operator washed his hands before taking action" and "the operator washed his hands after removing the glove" which are 4 or (66.7%). The most not implemented assessments were "the operator washed his hands before taking action" and

"the operator washed his hands after removing the gloves" which is 1 or (16.7%).

This shows that dental health workers at a dental clinic in X Public Health Center Yogyakarta, the level of implementation in carrying out hand hygiene as a whole can be said to be quite good. The results agree with the 2012 Ministry of Health guidelines that must be considered regarding hand hygiene in caring for PLHIV or non-PLHIV, such as: (1) before the hand hygiene: rings, clocks and all jewelry on the wrist must be removed, (2) nails must be short and clean, (3) do not use nail coloring or false nails because it can be a place where bacteria are trapped and make it difficult to see dirt inside the nails, (4) always use running water, if not available, one as follows: closed buckets, buckets, and dipper, where someone pours water while others wash their hands, (5) hands must be dried using paper towel or allow the hands to dry themselves before using gloves.²

In addition to having to keep nails clean and short, dental health workers are also required to wash their hands with disinfectants through 7 steps. According to the results of an interview with one of the dental health workers at a dental clinic in X Public Health Center Yogyakarta, he said that he had done 7 steps of

handwashing, such as the following quote, "in poly, according to 7 steps". However, on the results of direct observation, it was found that there were still many applications of hand hygiene carried out with imperfect meaning. In its implementation, it still had not been implemented properly and correctly in accordance with WHO guidelines and guidelines established by X Public Health Center Yogyakarta itself.

The application of hand hygiene cannot be ignored because according to WHO guidelines hand hygiene must always be carried out properly and correctly before and after taking care so that it can suppress the formation of bacterial colonies in the hands of medical personnel, which results in decreasing cross-infection rates in medical care. The habit of washing hands of dentists is a very basic action in an effort to prevent cross-infection. This is because a public health center is a gathering place for all diseases, both contagious and non-infectious.⁸

According to a quote from an interview with one of the informants regarding hand hygiene, it can actually be applied well because it has been well facilitated, "There is already a sink, soap, hands, tissue". The following is also a quote from an interview with one of the dentists that the moment at any time in hand washing, "Before the action, after the action, if it is dirty". While indications of handwashing are, if the hand looks dirty; after touching material / objects contaminated with blood, body fluids, excretion and secretions; before wearing gloves; immediately after removing the glove; before touching the patient; before carrying out an aseptic procedure; after contacting with the surface in the practice room including equipment, dentures, casts.⁷

Washing your hands must be done properly before and after taking action to eliminate or reduce the microorganisms that are in your hands so that the spread of the disease can be reduced and the environment is protected from infection. Hands must be washed before and after wearing gloves. Hand washing cannot be replaced by wearing gloves. Hand washing must be done in anticipation of the transfer of germs. This action is to eliminate or reduce microorganisms in the hand so that the spread of infection can be reduced and the work environment is maintained.⁹

Standard Precautions related to PPE in X Public Health Center Yogyakarta

The results of direct observation for 14 working days with a total of 71 visits of non-PLHIV patients observed in 3 standard assessments related to PPE and one other assessment only had a total of 36 visits of non-PLHIV patients observed. This is because the assessment

of the use of protective goggles is only used during scaling and tooth filling treatments that cause saliva splashes and even blood. There are 2 assessments of observations regarding personal protective equipment in non-PLHIV patients who have the most done perfectly are "the operator uses disposable gloves for one patient" and "the operator uses a mask when there is the possibility of splashes of blood or body fluids" which are 71 or (100%). The most incomplete is "the operator uses protective glasses when there is the possibility of splashing saliva/body/ blood fluids into the eyes, when scaling, hunting teeth and others" which is 5 or (13.9%). The most not implemented is "the operator uses protective glasses when there is the possibility of splashing saliva/body/ blood fluids into the eyes when scaling, hunting teeth and others", which is 21 or (58.3%).

The results of direct observation for 14 working days with a total of 6 visits of PLHIV patients observed in 3 standard precautions related to personal protective equipment and one other assessment only had a total of 4 visits of PLHIV patients observed. This is because the assessment of the use of protective goggles is only used when scaling and tooth extraction that causes salivary fluid splashes and even blood. Assessment of observations related to PPE in PLHIV patients who have the most done perfectly was "the operator uses disposable gloves for one patient", "the operator uses a mask when there is the possibility of splashing blood or body fluids", and "the operator uses protective clothing when there is the possibility of contamination of body/blood fluids into the skin and clothing" which are 6 or (100%). Incomplete application is 0 or (0%). The most not implemented is "the operator uses protective glasses when there is the possibility of splashing saliva/body/blood fluids into the eyes, when scaling, hunting teeth and others" which is 1 or (25%). This shows that the health workers at a dental clinic in X Public Health Center Yogyakarta have a good level of application in using PPE. However, there are still many dental health workers who do not use protective goggles when scaling, hunting teeth and others that allow for saliva splashes.

This is due to budget constraints so that the availability of protective goggles is still minimal. According to Nurkhaasanah (2013), the availability of facilities, especially PPE, is a very important supporting factor for dentist compliance in applying standard precautions, especially in serving patients in public health center, accidentally or intentionally Contaminated center equipment, where dangerous equipment contamination is caused by viruses HIV-AIDS.¹⁰

According to OSHA (2016), surgery mask available in a lot of kinds to prevent infections through the nose and mouth.¹¹

The other researchers have the same results. They are Shara et al (2014), that category for implementation used mask by respondents in RSGM Sultan Agung Semarang is 37 or 92,5%.¹² Another research shows the same result which implies dentists in RSGM Sam Ratulangi Manado used masks with total 30 or 100%.¹³ The other research also shows the dentists did extraction teeth in RSGM Sam Ratulangi Manado used masks with total 44 or 100%.¹⁴

Even though the implementation has been well implemented, the SOP document using PPE has not been completely listed by dental health workers in X Public Health Center Yogyakarta. Existing SOPs are Safety and Occupational SOPs which only mention the use of gloves and masks, but do not mention the use of protective clothing and protective goggles as part of PPE. PPE SOP is not attached to the wall, it should be attached to the dental clinic wall in X Public Health Center Yogyakarta so that all staff who carry out dental care can remind other officers and carry out the correct PPE procedure to reduce the spread of infection in the room.

Standard Precautions related to Safe Injections in X Public Health Center Yogyakarta

The results of direct observation for 14 working days with a total of 21 visits of non-PLHIV patients were observed in a standard precaution assessment regarding safe injections. This is due to assessments related to syringe use only in patients who perform dental extraction treatment with block anaesthesia and infiltration anaesthesia. The observation that "the operator does not give anaesthetic drugs from one syringe to several patients" has a perfectly implemented level of 18 or (85.7%). The implementation was done but less than 3 or (14.3%). The application that is not carried out is 0 or (0%).

The results of direct observation for 14 working days with a total of 2 visits of PLHIV patients were observed in a standard precaution assessment regarding safe injections. This is due to assessments related to syringe use only in patients who perform dental extraction treatment with block anaesthesia and infiltration anaesthesia. Assessment of observations related to safe injections in PLHIV patients, namely "the operator does not give anaesthetic drugs from one syringe to several patients" has a level of application that is done perfectly as much as 2 or (100%), which is done but less than perfect and which is not done as much as 0 or (0%).

The application is supported by the CDC's 2016 statement, namely unsafe practices that have caused patient harm including the use of one needle with or without the same needle to deliver medicine to many patients, reinserting used syringes with or without the same needle into a medicine bottle or solution container to get additional medication in one patient and then use the bottle container or solution for the next patient, and preparation of the adjacent medication for contaminated supplies or equipment.¹⁵

This research has a similar result to Anugrah Perdana Masloman et al (2015), that management application at surgery room in RSUD Dr. Sam Ratulangi Tondano has done the procedures according to Kemenkes RI guidelines.¹⁶ According to Dewi et al (2019), in the future, if medical waste is not well-managed, it can be a risk potential to increase health problems and environmental health.¹⁷

Although the implementation has been well implemented, the safe SOP injection document is not listed by dental health workers in X Public Health Center Yogyakarta. The absence of SOP documents is posted on the poly wall in X Public Health Center Yogyakarta. Safe injection SOPs must be posted on the dental poly wall in X Public Health Center Yogyakarta so that all staff who perform dental care can remind other officers and carry out the correct injection procedures to reduce the spread of infectious infections.

Standard Precautions related to Management of Waste and Sharp Objects in X Public Health Center Yogyakarta

The results of direct observation for 14 working days with a total of 71 visits of non-PLHIV patients were observed in a standard precaution assessment regarding waste management and one assessment of sharp object management only had a total of 21 visits of non-PLHIV patients observed. This is due to the assessment of sharps management about the use of one-handed needle closing techniques when there is a tooth extraction treatment that requires block anaesthesia and infiltration anaesthesia. Assessment of observations regarding the management of waste and sharps in non-PLHIV patients by observing the observation that "operators dispose of infectious waste in separate containers with non-infectious waste" was carried out perfectly in 71 or (100%), which was performed less than perfect and not as many 0 or (0%). Assessment of observations about "operators using the single-handed recapping method or closing the needle with one hand" was

done perfectly as many as 10 or (47.6%), which was done with less than perfect as much as 6 or (28.6%), and which were not done as much as 5 or (23.8%).

The results of direct observation for 14 working days with a total of 6 visits of PLHIV patients were observed in a standard precaution assessment related to waste management and one assessment related to sharps management only had a total of 2 visits of PLHIV patients observed. This is due to the assessment of sharps management about the use of one-handed needle closing techniques when there is a tooth extraction treatment that requires block anaesthesia and infiltration anaesthesia. Assessment of observations related to waste management and sharp objects in PLWHA patients with an observation "operators dispose of infectious waste in separate containers with non-infectious waste" carried out perfectly as many as 6 or (100%), which is performed less than perfect and not done i.e. 0 or (0%). Assessment of observations about "operators using the single-handed recapping method or closing needles with one hand" is done perfectly as much as 0 or (0%), which is done with less than 1 or (50%), and which is not done as much as 1 or (50%).

This shows that dental health workers at the X Public Health Center in Yogyakarta, the level of application in waste management can be considered very good and the application of sharp objects can be considered poor. The most widely applied application is that the operator removes infectious waste in separate containers with non-infectious waste. Show compliance with the 2012 Ministry of Health guidelines that need to be considered in the management of waste and sharp objects in dental services are; (1) there are regulations on waste disposal in accordance with applicable local regulations; (2) ensure that dental health service personnel handling medical waste are trained in an appropriate waste management, disposal methods and health hazards; (3) use color codes and container labels, yellow for infectious waste and black for non-infectious waste; (4) place sharp waste such as needles, scalpel blades, orthodontic bands, metal instrument fragments and bur on the right container, namely puncture resistance and leak resistance, yellow code; (5) blood, suction liquid or other liquid waste is discharged into the drain connected to the sanitation system; and (6) extracted teeth must be removed into infectious waste, unless given to the family.²

Even though the implementation has been well implemented, the SOP document for waste and sharp objects management has not been completely listed by

dental health workers in X Public Health Center Yogyakarta. Standard Operating Procedure in X Public Health Center Yogyakarta, namely Safety and Accident SOP. The Safety and Occupational Accident SOP itself only mentions removing medical waste and sharp objects in their place but does not mention how to close a syringe with one hand, not bending or breaking needles before being removed, releasing bur before lifting the hand piece from the dental chair, etc. The absence of SOP documents posted on the poly wall in X Public Health Center Yogyakarta. SOPs for waste and sharps management must be attached to the dental poly wall in X Public Health Center Yogyakarta so that all staff that performs dental care can remind other officers and carry out the correct PPE procedure to reduce the spread of infection in the room.

Standard Precautions related to Patient Care Equipment in X Public Health Center Yogyakarta

The results of direct observation for 14 working days with a total of 71 visits of non-PLHIV patients were observed in 4 standard alertness assessments related to linen handling, then the assessment of antiseptic administration in the operating area had a total of 49 visits of non-PLHIV patients because this application was only performed on patients with treatment of tooth extraction with block anaesthesia and infiltration anaesthesia, tooth extraction with topical anaesthesia and ethyl chlorine and scaling, and 2 other assessments had a total of 36 visits of non-PLHIV patients due to the use of aprons and suction use in patients with scaling and filling with resin composite.

Assessment of observations regarding patient care equipment in non-PLHIV patients who have the most level of application was done perfectly, there are 3 assessments, namely "the operator uses the tool in a sterile state", "the dental nurse prepares the tools and materials used before starting patient care", and dental nurses soak the equipment with detergent solution before cleaning "that is as much as 71 or (100%). The most important application was "dental operators/nurses instructed patients to rinse antiseptics before the procedure" i.e. as many as 54 or (76%). The most not implemented application was "dental nurses provide/wear a waterproof apron for one patient" that is as many as 30 or (83.3%).

Assessment of observations related to patient care equipment in PLHIV patients who have the most level of application is done perfectly, there are 3 assessments, namely "the operator uses the tool in a sterile state", "the dental nurse prepares the tools and materials used before starting patient care", and "dental nurse soak the equipment with detergent solution before cleaning" which is as much

as 6 or (100%). The most widely performed imperfectly was "dental operator/nurse instructs the patient to rinse antiseptic before the action" i.e. as many as 3 or (66.7%). The most not implemented application was "dental nurse provides/replaces/replaces single-use suction for each patient" which is 3 or (75%).

Dental hygiene standards consist of standard sterilization of health equipment maintenance, such as (1) statement (preparing and sterilizing dental instruments that will be used for examination or treatment, sterilizing and storing tools after implementation), (2) rational (clean, sterile appliance, stored in place), (3) input criteria (the presence of non-critical, semi-critical, critical dental instruments, sterilizers, disinfectants and storage cabinets), (4) process criteria (clean washing and drying of non-critical, semi-critical and critical, sterilizing non-critical dental instruments with disinfectants, sterilizing boiled semi-critical dental instruments, sterilizing critical teeth by autoclaving, re-sterilizing at least 2 weeks if not in use, and compiling and storing non-critical, semi-critical and critical instruments in appropriate locations with storage conditions), and (5) output criteria (sterile and usable tools, neatly arranged tools p there is a place.¹⁵

Cleaning, disinfection, and sterilization of dental equipment must be assigned to dental health personnel with the training needed to ensure that reprocessing results on the instrument can be used safely for patient care. Training must also include the use of appropriate PPE needed to safely handle contaminated equipment.¹⁵

Sterilization and disinfection are intended for all instruments used or touched during the treatment procedure. Before sterilizing and disinfecting all the equipment must be cleaned first. This is useful for removing blood, saliva, tissue or other debris that can interfere with the sterilization and disinfection process. Tools must be thoroughly cleaned with soap or detergent, or with mechanical devices such as ultrasonic cleaners that can reach areas that cannot be reached with a brush.¹⁸

The results of this study are in accordance with the results of a study conducted by Anugrah Perdana Masloman, et al., which the implementation of processing equipment for patients in the operating room of the DR. Sam Ratulangi Tondano had not run fully in accordance with the Ministry of Health's infection prevention and control guidelines.¹⁶

The application of patient care equipment goes well according to the guidelines of the Indonesian Ministry of Health and patient care equipment SOP documents and SOP sterilization tools are well listed by dental health

workers in X Public Health Center Yogyakarta. It's just that the application of aprons is still not disciplined applied to patients who are treated who are at risk of causing droplets of body fluids or blood from the patient itself. SOPs related to patient care equipment explains the maintenance of equipment by determining the type of instrument are checking the instrument, if it is repaired, and performing maintenance and repairs. The SOP sterilization tool explains about soaking instruments with 'bayclin' 0.5% for 15 minutes. The next step is cleaning with water and soap, then soaking with antiseptic for 15 minutes, drying, and sterilizing with an oven sterilizer.

Standard Precautions related to Handling Linen in X Public Health Center Yogyakarta

The results of direct observation for 14 working days were observed in one observation of linen handling in non-PLHIV patients with a total of 6 times the use of linen. This is due to the observation that the use of linen in the form of an apron is only used as much as 6 times during scaling and tooth filling with composite resin. Assessment of observations "changing linen which is contaminated with blood and body fluids or other infectious material" has a level of application that is carried out perfectly in 5 or (83.3%). The implementation is done but not perfect as much as 0 or (0%). The application that is not done is 1 or (16.7%).

The results of direct observation for 14 working days were observed in one observation of linen handling in PLHIV patients with a total of 2 times the use of linen. This is due to the observation that the use of linen in the form of an apron is only used as much as 2 times during scaling and tooth filling with composite resin. Assessment of observations "changing linen which is contaminated with blood and body fluids or other infectious material" has a level of application that is carried out perfectly by 2 or (100%). The implementation is done less perfectly and is not done in 0 or (0%).

The results of the interview found that the handling of linen was handed over to third parties on a regular basis and had gone quite well. The cleanliness of the linen is in line with the expectations of the health workers and it has been running properly, such as an interview with one of the informants, "the third party every Saturday, the dental poly itself is still good because it always buys a lot every year" The document observation results, no SOP was found to regulate linen.

Linen handling (instrument base cloth, apron, and cloth dental unit cover) must immediately replace linen

contaminated with blood, body fluids or other infectious material and replace linen between patients. Through medical support services, especially in linen management at the *puskesmas*, linen is needed in every room including dental poly services. Therefore, health workers are expected to use linen in health services to maintain or avoid infection.⁷

According to Loveday et al, linen cleanliness is closely related to patient health care, because linen is a tool that is often used by health workers and patients during treatment. In addition, by maintaining clean linen, it will help protect patients.¹⁹

The implementation of linen handling works well according to the guidelines of the Indonesian Ministry of Health, but the linen SOP document is not listed by dental health workers in X Public Health Center Yogyakarta. SOPs related to linen handling that explains linen maintenance, linen change, and linen used are needed so that the procedures carried out are fully contained in the SOP and become procedures that guide the institution itself.

Standard Precautions regarding Environmental Management in X Public Health Center Yogyakarta

The results of direct observation for 14 working days with a total of 71 visits of non-PLHIV patients were observed in 5 standard alertness assessments related to environmental management, assessment of observations related to environmental management in non-PLHIV patients who had the most complete application was "room like floor walls, cabinets, tables, chairs, etc. are neatly arranged and clean "and" dental operators and nurses appear neat using work clothes, clean work clothes and always washed according to the specified time. "That is 71 or (100%). The most incomplete implementation is "avoiding the use of fabric rugs and furniture that absorbs in the work area and processing area of the instrument" as many as 71 or (100%). The most not implemented application was "dental nurses do disinfection on the dental unit after use" that is as much as 11 or (15.5%).

The results of direct observation for 14 working days with a total of 6 visits of PLHIV patients were observed in 5 standard awareness assessments related to environmental management. The most widely implemented perfectly was "dental operators and nurses appear neat using work clothes, clean work clothes and always washed according to the specified time", also "rooms such as floors, walls, cabinets, tables, chairs, etc. are arranged neatly and clean "that is as much as 6 or (100%). The most impeccable application is "avoiding the use of absorbent rugs and

furniture in the work area and processing area of the instrument" and "clean ventilation, lighting and work areas that meet the standards" i.e. as many as 4 or (66.7%). The most not implemented application was "avoiding the use of fabric rugs and furniture that absorbs in the work area and processing area of the instrument", which is as much as 2 or (33.3%).

Based on the results of in-depth interviews and direct observations conducted, it was found that X Public Health Center Yogyakarta dental polyclinic had cleaned the dental unit cuspidor carried out by dental nurses every time the patient was replaced. Daily and weekly cleanings were done by regular cleaning service officers every day. The following is an excerpt from an interview with one of the dental nurses, "Every Friday the dental unit is cleaned or 2-3 times" and quote one of the waste management officers who said, "cleaning service is always monitored for example not clean immediately if we cannot clean it the third party".

The results of this study are still relevant to the PPI Standard in the Ministry of Health's 2012 Dental Services, namely (1) the manufacturer's instructions are noted for using disinfectant materials for proper cleaning of environmental surfaces, (2) environmental disinfection is not recommended to use high-level disinfectants, (3) always use PPE when cleaning or disinfection of environmental surfaces, (4) use surface protectors to prevent the contact surface of the clinic from being contaminated, especially those that are difficult to clean such as switches on dental chairs and replace the patient's surface shield and disinfection of the contact surface of the clinic protect after one patient's activities, use moderate-level disinfection if contaminated with blood, (5) use disinfectants or detergents and water to clean the entire surface of the environment (floor, wall, table, trolley), depending on the surface, type and level of contamination, (6) clean the cloth clean after use and dry before reuse, or use disposables, (7) disinfectant or cleaning liquid is always available, (8) walls, room dividers, window curtains in the patient's care area should be cleaned if it looks dirty and dusty, (9) if there is a blood spill or infectious material, please clean it immediately using disinfectant liquid, (10) do not use fabric rugs and furniture that absorbs in the work area, laboratory and instrument processing area.⁷

Emphasis on cleaning and disinfection should be placed on the surface most likely to be contaminated with pathogens, including clinical contact surfaces (e.g. frequently touched surfaces such as lamp handles, dental chair switches, computer equipment) in the patient's care

area. When the surface is touched, microorganisms can be transferred to other surfaces, instruments or to the nose, mouth, or dental health personnel or patients. Maintenance of dental poly is a process of cleaning the room along with standard tools in dental poles. Being performed regularly according to schedule the purpose is to prevent cross-infection from or to patients and maintain sterility, daily cleaning methods, weekly cleaning methods and when cleaning.¹⁵

This view is also justified by Loveday et al, stating that there are a number of things that must be considered in maintaining environmental cleanliness, including the following: (1) the *puskesmas* environment must always be clean, clean from dust and clean from any visible or invisible dirt, (2) maintaining the environmental cleanliness of the *puskesmas* must always be carried out at all times and improved as needed. If there is an infection case, it shows the need to increase safeguards in the health center environment, (3) the use of disinfectants must always be done and practically, every environmental corner of the *puskesmas* must be disinfected so that it can be used anytime by anyone in the *puskesmas*, (4) every health equipment used together, it must always be kept clean, and (5) the importance of educating every health worker about the importance of maintaining cleanliness in the health center environment.¹⁹

Other applications that need attention in standard precautions regarding environmental management are adequate lighting and ventilation. The lighting in X Public Health Center Yogyakarta poly dental room is in accordance with the guidelines of the Republic of Indonesia Ministry of Health Regulation number 75 of 2014, which states that public health center buildings must have natural lighting and / or artificial lighting; lighting should be distributed evenly within the room, energy saving.²⁰ It's just that sometimes it is still monitored during direct observation where the weather outside the room is cloudy but the lights in the poly dental room are not turned on. Based on the results of interviews with one of the informants at the in X Public Health Center Yogyakarta, it should be when the weather is cloudy, so the lights are turned on all, like the following quote: "The lights are also turned on it's relative if the darker clouds are turned on all".

Awareness in the Republic of Indonesia Minister of Health Regulation 2014 states that adequate ventilation and good air circulation, extensive natural ventilation must be up to 15% of the floor area fan or room temperature regulator must function properly. This is in accordance with the field where the dental poly room has natural ventilation

of more than 5% of the floor area and has a well-functioning AC (Air Conditioner). According to the interview with one of the informants who stated that this was indeed part of the building regulations of the *puskesmas*, the quotation was as follows: "God willing, because we have done accreditation".

The application of environmental management in the dental clinic in X Public Health Center Yogyakarta is quite well implemented and the SOP document for the maintenance of the dental unit is specified by dental health workers in X Public Health Center Yogyakarta. The SOP for the maintenance of the dental unit includes cleaning the instrument table, handpiece, indicator lights, cuspidor, and others using a disinfectant.

Standard Precautions related to Protection of Employee Health in X Public Health Center Yogyakarta

The results of direct observation of standard precautions related to employee health protection for 14 working days with a total of 71 times operators or nurses handling non-PLHIV patients, where the application of "dental operators and nurses doing hepatitis vaccines etc." has a perfectly implemented level of 0 or (0%). 29 or (40.8%) less than perfect implementation. 42 or (59.2%) were not implemented. Furthermore, the results of direct observations are related to standard precautions related to employee health protection in PLHIV patients.

The results of direct observation of standard precautions related to employee health protection for 14 working days with a total of 6 times the operator or nurse dealing with PLHIV patients, where the application of "dental operators and nurses doing hepatitis vaccines etc." has a perfectly implemented level of 0 or (0%) Application that is done but less than perfect for 1 or (16.7%). The application that is not done is 5 or (83.3%).

Based on the results of interviews regarding health programs for health workers such as giving vaccinations for infectious diseases, almost all informants interviewed stated that they had never been vaccinated for infectious diseases. The following is an excerpt from an interview with one of the informants, "there is no routine vaccination, only health screening includes laboratory tests (blood, VCT, urine)". Vaccinations are still felt to be unnecessary, such as the following interview excerpt, "do not yet need to implement it". According to observations, the document did not find any SOPs regarding the protection of health workers.

This is contrary to the statement of Loveday et al, that vaccination is needed by health workers because they are at risk of infection if exposed while working can also transmit

infections to patients or other health workers. *Puskesmas* management and health workers have the same responsibility to prevent the spread of infections from health workers to patients or vice versa, from patients to health workers by preventing diseases that can be prevented through vaccination. Health facilities must have infection prevention and control program for health workers.¹⁹

For employees who do not contact patients (administrative staff, cleaning service, etc.) can be included in the program depending on their risk of contact with blood or saliva. If found employees who are not willing to get hepatitis B vaccination, they are required to sign an unwilling statement made by the institution and known by the leadership.⁷

The results of this study are consistent with the results of a study conducted by Anugrah Perdana Masloman, et al. That the implementation of employee health programs or protection of health workers in the operating rooms of the DR. Sam Ratulangi Tondano had not run according to the Ministry of Health's infection prevention and control guidelines.¹⁶

The application of employee health protection does not work according to the guidelines of the Indonesian Ministry of Health and employee health protection SOP documents are not listed in full by dental health workers in X Public Health Center Yogyakarta. The SOP is in the in X Public Health Center Yogyakarta Dental Polyclinic, namely the Safety and Occupational SOP. The Safety and Occupational SOPs themselves only mention occupational safety and accidents to the eyes and skin, not listed as accident management with infectious infections. SOPs related to protection and employee health need to contain the risk of exposure to infectious infections such as HIV so that employees do not panic and immediately know the steps they can take.

Standard Precautionary Cough Ethics related to Cough Ethics in X Public Health Center Yogyakarta

The results of direct observation for 14 working days with a total of 2 times non-PLHIV patients who experienced coughing or sneezing and a total of 7 times the operators and nurses experienced coughing or sneezing while treating non-PLHIV patients. Assessment of observations about "dental nurses giving masks to patients who are coughing" was done perfectly as many as 1 or (50%), done with less than perfect as much as 1 or (50%), and not done as much as 0 or (0%). Assessment of observations about "dental operators and nurses applying the ethics of coughing correctly" was carried out perfectly

as many as 4 or (57.14%), performed with less than 1 or (14.3%), and not done in 2 or (28.6%).

The results of direct observation of standard precautions related to the ethics of coughing for 14 working days were not found at all on PLHIV patients who experienced coughing or sneezing and also not found by operators and nurses who experienced coughing or sneezing when treating PLHIV patients. Interviews regarding the ethics of coughing in dental poly, not all officers in the dental polyclinic had performed in accordance with the guidelines for the prevention and control of infection using masks. Officer awareness is so important in cough ethics in order to minimize the spread of the virus from its source. There are always masks in dental poles, so the officers always wear masks when they are in dental poles.

According to the CDC's view that infection prevention measures with cough ethics are designed to limit transmission of respiratory pathogens that are spread through droplets. This action targets mainly patients and individuals who accompany patients to a dental practice site who may have undiagnosed respiratory infections but also applies to all (including dental health workers) with signs of the disease including coughing, stuffy nose, or runny nose. Dental health workers must be educated to prevent the spread of respiratory pathogens when in contact with symptomatic people.¹¹

In the results of the interview with one of the operators that patients who can take a mask in the registration section, such as the following quote "patients who are coughed with masks in the registration section and health workers are also required to wear masks". According to one other informant that the ethics of coughing besides masks can be done with the back of the arm or tissue, such as the following quote "if the cough uses the back of the arm or mask or tissue".

This is in accordance with the WHO view, that someone with symptoms of respiratory distress must apply source control measures: (1) covering the nose and mouth when coughing or sneezing with tissues and masks, and cleaning hands after contact with airway secretions, (2) placing patients with symptoms of acute respiratory distress at least 1 meter from other patients while in public spaces if possible, (3) placing warning signs to perform respiratory hygiene and cough ethics at the entrance of health care facilities, and (4) considering putting equipment or hand hygiene facilities in public places and areas of evaluation of patients with respiratory disorders.⁸

Even though the implementation was quite well implemented, the cough ethics SOP document was not

included by dental health workers in X Public Health Center Yogyakarta. There is no SOP document attached to the poly wall in X Public Health Center Yogyakarta. Cough ethics SOPs must be posted on the dental poly wall in X Public Health Center Yogyakarta so that all officers and patients in the dental care room can remind other officers and patients to carry out the correct ethical cough procedure to reduce the spread of infection in the room.

CONCLUSION

Starting from the formulation of the problem, analyzing the data and discussing the results of the study with the title: Standard Alertness Application Analysis as Prevention and Control of HIV-AIDS Infection in High-Risk Dental Care in X Public Health Center Yogyakarta that; The implementation of overall standardized vigilance is quite good and still needs to be improved to prevent and control infections, especially HIV-AIDS infections in X Public Health Center Yogyakarta. The application of standard precautions related to hand hygiene, environmental management, and cough ethics is quite well implemented. SOP documents on hand hygiene and environmental management are well listed. Cough ethics SOP documents are not listed by dental health workers in X Public Health Center Yogyakarta. Implementation of standard precautions regarding PPE, safe injections, management of waste and sharp objects, patient care equipment, and handling of linen have been well implemented. The SOP document for patient care equipment is well listed. PPE SOP documents, management of waste and sharp objects are not completely listed. Safe SOP injections and linen handling documents are not listed at all by dental health workers in X Public Health Center Yogyakarta. Implementation of standard precautions regarding employee health protection is not well implemented. The SOP document for employee health protection is not listed in full by dental health workers in X Public Health Center Yogyakarta.

For X Public Health Center Yogyakarta, Puskesmas management needs to make SOPs related to standard precautions that are still incomplete even to those that have not been made at all, so that the puskesmas has its own guidance in carrying out services properly. Dental health workers together with management need to budget a fee to implement the installation of curtains with plastic material, provide protective goggles for operators, antiseptic solutions for gargling patients, and waterproof aprons for patients. *Puskesmas* management needs to carry out training, supervision, and evaluation of the application of

standard precautions such as hand hygiene, PPE, closing needles with one hand, cough ethics, and others.

For other research, similar research needs to be carried out in relation to the application of standard precautions by dentists by examining variables that may be related to or related to the continuing behavior of dentists in applying standard precautions when serving patients. Similar research needs to be carried out by looking at the intra-oral conditions of HIV-AIDS patients that are carried out continuously or follow-up in order to analyze in more detail the care of health care workers in implementing standard precautions.

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