

Nurses' perceptions of universal precautions for HIV/AIDS prevention based on health belief model approach

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Abstract

Introduction: The phenomenon of the increase and spread of human immunodeficiency viruses (HIV)/acquired immunodeficiency syndrome (AIDS) in South Kalimantan is a concern in prevention and treatment efforts. Efforts are directed at behavioral changes, such as changes in perceptions of healthcare workers in implementation of universal precautions for prevention of HIV/AIDS.

Material and methods: This study aimed to analyze the perception of nurses in implementing the universal precaution measures for prevention of HIV/AIDS using a cross-sectional approach and instrument questionnaire. The study applied primary data taken from all nurses who work in the hospital of Banjarmasin.

Results: Results showed that the most dominant variables influencing the actions of nurses in the implementation of universal precautions for prevention of HIV/AIDS were perceived severity, perceived benefits, and perceived barriers. It can be concluded that the perception of nurses' severity, barriers, and benefits can influence the actions of nurses in implementing universal precautions for prevention of HIV/AIDS.

Conclusions: Efforts are needed to improve the implementation of universal precaution measures by utilizing reward and punishment in the implementation of universal precautions. Nurses need to be re-socialized about universal standard precautions to minimize difficulty in their application.

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Key words: perceptions, nurse, universal precaution, HIV/AIDS.

Introduction

In Indonesia, an increase of human immunodeficiency viruses (HIV)/acquired immunodeficiency syndrome (AIDS) cases showed alarming acceleration [1,2]. Raising prevalence of HIV/AIDS increases the risk of health professionals who work in healthcare facilities and are exposed to potentially life-threatening infection. Both government and society need to make efforts to maintain and improve public health, according to the mandate of Health Act No. 36 of 2009 [3] as well as the Presidential Decree 75 of 2006, which highlight the need for increased efforts to combat

HIV/AIDS (acquired immunodeficiency syndrome) in Indonesia. The response must be designed to reduce the number of deaths as much as possible [3]. High rates of HIV/AIDS infection require an act of universal precautions to prevent the spread of infection in order to reach development goals of optimal health status realization [4-6].

As listed in Table 1, the cumulative number of HIV and AIDS cases is increasing every year. Based on these facts, an effective procedure is needed to protect healthcare workers and patients suffering from HIV/AIDS.

Healthcare personnel is providing nursing care to patients by direct contact with body fluids and blood of a patient.

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Table 1. Number of cumulative cases of HIV/AIDS in South Kalimantan Province, Indonesia

No.	Year	HIV	AIDS
1	2009	110	30
2	2010	138	63
3	2011	104	27
4	2012	201	134
5	2013	366	334
6	2014	526	364
7	2015	843	429
8	2016	1,036	429
9	2017	1,297	429
10	2018	1,869	429

Source: Directorate General of Communicable Disease Control and Environmental Restructuring, 2018

This is where infectious agents can live and breed, and then spread from one patient to another, especially if precautions against blood and body fluids are not undertaken among all patients and the staff [5-7].

Universal precaution is an effective method to protect healthcare workers and patients. This method is not anything special to prevent HIV infection, but the same procedure to prevent infection of other diseases. The application of universal precautions concern every party involved in the management of a health facility, including administrative staff, executive staff, and healthcare workers as well as service users who work optimally with the visitor. To be able to work optimally, healthcare workers should always be protected from the risk of contracting a disease [8, 9].

Centers for Disease Control and Prevention (CDC) in Atlanta recommend that all healthcare workers should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices. Data from the CDC estimated that each year, 385,000 healthcare workers' injuries from sharp objects with contaminated blood occur in US hospitals [5, 8].

Results of a research conducted in Semarang Hospital show that the number of healthcare workers adhering to implementing of various elements of the application of universal precautions is less than 50%. Preliminary studies conducted in Abdoel Muluk Hospital in 2006 showed that 58% of healthcare workers are exposed to blood and body fluids [8]. In Dr. Soetomo hospital and private hospitals in Surabaya, there were 16 cases of occupational injuries to healthcare workers in the last 2 years, who were evaluated, followed up, and proven to be exposed to HIV [2].

South Kalimantan Provinces' HIV cases are included in the ranking of 23 out of 33 provinces, and AIDS cases are included in the ranking of 22 out of 33 cases [10]. HIV/AIDS in South Kalimantan Province spread over several districts in South Kalimantan [11]. Banjarmasin is the capital of South Kalimantan Province, and an area with the highest number of AIDS cases in all cities in South Kalimantan.

South Kalimantan has a referral hospital for HIV/AIDS patients, according to Minister of Health Decree No. 760/Menkes/SK/VI/2007 [3]. This was deemed necessary for treatment, prevention, and providing quality health services for people living with HIV/AIDS (PLWHA). Based on initial observations that have been made by researchers among paramedic care, out of 10 paramedic care workers, only 2 use gloves in every nursing action.

The obtained observation revealed that standard operating procedures (SOP) for universal precaution protocols are not known to nurses; therefore, they do not perform universal precautions optimally, neither were there any rewards/sanctions applied for nurses who always/never implement universal precautions. Although, no data reflect the real load of HIV/AIDS transmission on paramedics, in those who are not accompanied by the application of universal precautions' management, there is an increased risk of possible exposure to blood and body fluids due to direct contact with patients [4]. In this case, the role of nurses is very important because of their direct contact with patients in providing services [12].

From the above data, it was found that the incidence of HIV/AIDS, especially in the city of Banjarmasin, the capital of South Kalimantan Province, has increased. Also, because the city is the capital of the Province and major trade center as well as a transit point, which contribute to the increased incidence of HIV/AIDS.

Nurses are working in referral hospitals with PLHIV, and most likely experience occupational exposure to blood and body fluids of patients living with HIV/AIDS. If the nurse implements universal precaution measures appropriately and correctly, the management of HIV/AIDS patients improve. Therefore, nurses' safety and health are better protected, greatly reducing the risk of HIV/AIDS infection [9, 13].

The purpose of this study was to analyze the extent of perceptions about universal precaution measures carried out by nurses for HIV/AIDS prevention in the hospital. The results were expected to improve adherence to standards of care and nursing precautions for the prevention of HIV/AIDS.

Material and methods

In the present study, the perception of nurses in implementing universal precautions as the effort to prevent HIV/AIDS was analyzed, with an emphasis on reproductive health and HIV/AIDS. All nurses ($n = 107$), who work as civil servants in the in-patient department at the Banjarmasin City Regional General Hospital were included. Quantitative methods and questionnaires based on the theory of health belief model (HBM) were applied as research instruments.

Results and discussion

The application of universal precautions in action paramedic nurses was directly dependent on their assurance of implementing universal precaution measures. The assessment of risks when implementing universal precautions, belief in the consideration of advantages or disadvantages in implementing uni-

Table 2. Multivariate analysis [3]

Step 1 ^a	B	S.E.	Wald	Df	SS Sig.	Exp. (B)	95% CI for Exp. (B)	
							Lower	Upper
Severity (1)	1.7*	0.5	10.9	1	0.001	5.7	2.0	16.0
Benefits (1)	1.4	0.5	7.9	1	0.005	4.2	1.5	11.5
Barriers (1)	1.0	0.5	3.8	1	0.049	2.8	1.0	7.9
Constant	-1.0	0.8	1.5	1	0.210	0.3		

^aStep 1 variable(s): vulnerability, severity, benefits, barriers.

*Probability of nurses who perceive high severity is not likely to carry 5.7 times compared with nurses with low perception of severity.

versal precautions, and consideration of the information obtained from other people and sources were shown in the analysis.

Factors that influence behavior change to implement the universal precaution measures affected the individual assessment of universal precaution measures, interactions with healthcare providers who offer or deliver universal precautions, and experience gained were considered as an encouragement to implement universal precautions.

Based on the results of analysis in Table 2, it can be concluded that three independent variables have a significant effect, including perceived severity, perceived benefits, and perceived barriers to universal precautions' implementation. Furthermore, the perceived severity variable is considered having the most influence on nursing actions in the implementation of universal precautions for HIV/AIDS prevention.

Perceptions about severity

Perception of severity is very important factor; it is the basis, on which a person can consider HIV/AIDS as a threat or not. If a nurse ignores the disease, the services performed, involving direct contact with blood and human fluids, would not be regarded as a possible threat to be infected with HIV/AIDS. This was reflected in a research by Efstathiou (2010), where the high impact in implementing preventive measures was the most important factor in providing good protection against exposure to micro-organisms [5, 10, 14]. In this study, the lack of attention to universal precautions due to nurses' perceptions on the severity of HIV/AIDS was shown.

Perceptions about vulnerability

The results show that respondents do not have a good perception regarding vulnerability when not using universal preventive measures. This shows that the respondent's perception is that they are not using universal preventive measures to prevent HIV/AIDS, assuming that even if they do not use gloves, they will not be infected with HIV/AIDS, even if they do not care for PLHIV patients.

Perception behavior act

In HBM (health belief model) theory, cues to action are shown as the belief in external information or advice from others, the experience of others who underwent the same

thing, news from the media, etc. These all reinforces the decision to act to move someone out of a desire to make a change in health [15].

If the view of variables of cues to action, the respondents perceived instructions to follow as low in the implementation of universal precautions, they perceived as they may not be infected with HIV/AIDS despite wounded during suturing wounds in patients, perceived that they do not contract HIV/AIDS through cleaning medical devices without using gloves; also, there was a perception of no need of taking precautions in avoiding contracting HIV/AIDS if injured while doing appliance washing.

There were cues to action as the confidence in external information or advice from others, though someone's believe that was vulnerable to HIV/AIDS, knowledge about HIV/AIDS and dangers involved, and not blindly accept universal precautions to prevent HIV/AIDS. Cues to action were also influenced by a proper understanding of vulnerability, severity, benefits, and barriers in universal precaution measures to prevent HIV/AIDS.

Respondents' perceptions of benefits

As seen from the results of the study, the respondents had a not good perception of benefits of implementing universal precautions. The nurses answered it is not easy to implement universal precautions.

HBM theory suggests that the perceived benefits of individual's confidence to act, a person would not blindly accept universal precaution enforcement action unless he/she is convinced that these measures can reduce the threat of disease and the person would be able to do it [15].

Respondent's perceptions of barriers

The variables in the study showed that the respondents had a not good perception of barriers to the implementation of universal precautions. The respondents answered that the equipment immersed for 20 minutes in a disinfectant solution should only take 10 minutes.

Based on theory of perceived barriers (HBM), perception is a negative aspect of universal precaution measures aimed at inhibiting the implementation of universal precautions. This is maybe due to constraints related to the nature

of preventive measures, such as discomfort, high cost, unpleasant, painful, disappointing, time-consuming, etc. [15].

Multivariate analysis

From the results of multivariate analysis, in nurses who have a low perception of severity, it was not possible to implement universal precautions with 5.7 times compared with nurses with a high perception of severity.

In a previous study conducted by Efstathiou [5], the standard precautions provided good protection against exposure to micro-organisms. The degree of influence of factors to implement the preventive measures contributed to a person's decision to adhere or not. Therefore, a variety of efforts are necessary for the implementation of universal precaution activities in preventing HIV/AIDS. Universal precaution measures can provide good protection for nurses in carrying out their duties and functions as well as to protect PLWHA from becoming more severe ill and improve their quality of life.

The results show that the vulnerability of perception, perception of severity, perceived benefits, and perceived barriers affect each other. The perceived threat assessment based on perceived susceptibility and severity is accepted; the assumption is if the perceived threat increases, preventive behaviors also increase. Perceived benefits showed individual's beliefs to behave, while perceived barriers may act as obstacles for recommended behaviors. This precaution is also influenced by other factors, such as demographics, social psychology, and knowledge [7].

Conclusions

Based on the above results, the perception of severity of universal precautions showed an enormous influence on the perception of benefits and barriers. Nurses who have a low perception of severity of not implementing universal precautions showed 5.7 times increase compared with nurses who had a high perception of severity.

Perceptions of paramedic nurses showed confidence in the management of universal precaution measures to prevent HIV/AIDS. It can be concluded that the nurses would implement measures of universal precautions influenced by their perceptions of severity, susceptibility, perceived barriers, and benefits of their actions in the prevention of HIV/AIDS.

The recommendations are addressed to policy-makers in the hospital:

1. The policy-makers in the hospital are expected to provide rewards and punishment method in the implementation of universal precaution. This is due to a lack of confidence in respondents' perceptions of universal precaution actions (perceived severity) in the implementation of universal precaution that can affect their health.
2. There is a false assumption about the benefits of implementing universal precautions for prevention of HIV/AIDS as well as measures that are still lacking good nurses. In implementing universal precautions, there is a need for refreshment of disseminating information about universal precautions, and protocols should be easily available for the nurses.

3. Low perception of nurses is considered a barrier in implementation of universal precaution protocols for prevention of HIV/AIDS. There is a need for increase of the motivation to always implement universal precautions.
4. Media are needed to provide information about universal precaution, thus reinforcing the nurses to implement universal precaution measures on daily basis.

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Conflict of interest

The author declares no conflict of interest.

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