

Research Article

STANDARD OF INFECTION MANAGEMENT, PREVENTION CONTROL, MITIGATION, AND COMPLIANCE ON HEALTHCARE FACILITIES AMONG WORKERS

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ABSTRACT

Compliance standards are set of precautionary measures devised to be used for the care of all patients in hospitals. Thus, these practices are required to achieve a maximal level of infection control for the treatment of all clients regardless of their presumed infection safe. This study investigated the relationship of standard of infection management, infection prevention and control, mitigation and compliance on standard precautions among healthcare workers in hospitals in Iligan City this year 2021. A descriptive-correlational and causal research designs were used. A 5-point Likert scale survey questionnaire was utilized in gathering the data from 117 healthcare workers. Furthermore, descriptive statistics such as mean, standard deviation, Pearson Product - Moment Correlation, and Multiple regression analysis to organize the data. The study revealed that the nurses have high level of standard of infection management, infection prevention and control, and mitigation and compliance on standard precautions. All variables have significant relationship and influence the nurses' compliance standards. Healthcare administrators may strengthen the monitoring of IPC programs for its implementation, heighten the assessment of health-related risk that healthcare construction workers may be exposed, and offer protection against biohazards on construction sites.

Keywords: structure, function, responsibilities, relationship, influence, health -related risks, biohazards.

INTRODUCTION

Quality nursing care management is the most important aspect in the care of patients across the life span. Patients seeks medical advice to any health care facility of their choice for the alleviation of their disease and not to add more injury to their condition. These patients come from different walks of life and across the life span to seek medical treatment of their signs and symptoms and not to experienced additional signs and symptoms which may be a result of poor standard infection control. It is in this sense that all health care facilities envisioned an effective standard infection control, infection prevention program, alongside with the health care facility's mitigation program and they make sure that health care workers complied with what has been set as standards by the World Health Organization in the hope of providing quality health care service while maintaining cost effective medical and nursing care to all patients under their care. Moreover, the topmost priority of any health care facility is to accomplish quality consideration in understanding the health security and well-being and the decrease of health-care related contamination. Furthermore, preventing and decreasing the transmission of irresistible infections that present worldwide dangers like the pandemic N Corona virus. Pandemic flu, Ebola infection illness and other viral hemorrhagic fevers are crucial. Spotless safe consideration is a patient's right and ought to likewise be the obligation and pride of everyone working in the medical services area.

Standard of infection management, infection prevention control, mitigation, and compliance on standard precautions on health care facilities are cross-cutting issues in medical care. Solid, compelling IPC programs impact the nature of care, improve quiet security, and secure every one of those who give consideration in the wellbeing framework.

In addition, standard of infection management, infection prevention control, mitigation, and compliance on standard precautions (IPCMC) is a logical methodology and functional arrangement intended to forestall damage brought about by contamination to patients and wellbeing of health workers. Productive standard of infection management, infection prevention control, mitigation and compliance programs in health care facilities depends on understanding the facilities issues or needs, organizing exercises, and utilizing accessible assets adequately. Assets are constantly restricted, so cautious arranging, usage, and assessment of IPCMC exercises are basic, regardless of whether in a little facility or on the other hand a bustling area medical care facility. Hence, IPCMC is not just the most financially a savvy choice, yet additionally the best procedure accessible to secure patients and cutoff the spread of infection inside any health care facility. Any health care facility should have a strong policy and guidelines on standard of infection management, infection prevention control, mitigation, and compliance to reduce the likelihood of one of the most common health care complications. Standard safeguards are intended to diminish the danger of transmission of blood borne and different microorganisms from both perceived and unrecognized sources. They are the fundamental degree of disease control precautionary measures which are to be utilized, as a base, under the watchful eye of all patients. Contamination anticipation and control is needed to avert the transmission of transferable illnesses in all medical care settings. In addition, health care facilities should not only have a strong infection and control guidelines but also utilizes a comprehensive mitigation program in case there a break in the infection prevention and compliance (WHO, 2014).

In addition, the execution of all World Health Organization (WHO) suggestions on center segments is needed to assemble working programs prompting the successful decrease of Healthcare Associated Infections (HAIs) and Antimicrobial Resistance (AMR). In any case, satisfaction of all Infection Prevention and Control (IPC) center segments require some investments. In numerous settings, disease observation frameworks, microbiology lab assets to

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distinguish the reason for medical care related contaminations (HAIs), and therapy alternatives for contaminations are restricted. Hence, IPCMC is not just the most financially savvy choice, but also the best procedure accessible to secure patients and cut off the spread of infection inside any health care facility. Any health care facility should have a strong policy and guidelines on infection prevention, control, mitigation and compliance to reduce the likelihood of one of the most common health care complications, and a comprehensive mitigation program in case there is a break in the infection prevention and compliance. They are the fundamental degree of disease control precautionary measures which are to be utilized, as a base, under the watchful eye of all patients. Contamination anticipation and control is needed to forestall the transmission of transferable illnesses in all medical care settings. Furthermore, mitigation relief is also necessary to decrease its destructive impacts.

According to the World Health Organization, no one should catch an infection while receiving health care, yet hundreds of millions of people are affected every year; this is avoidable. This is also an alarming figure that affects those who provide health care too. Infection prevention and control (IPC) is a practical, evidence-based approach which prevents patients and health workers from being harmed and ensures quality health care. It involves practicing WHO hand hygiene recommendations, having a clean and hygienic environment, monitoring infection, and having action plans to reduce their frequency, never reusing needles and syringes, using antibiotics but only when truly needed, to reduce the risk of resistance. A large proportion of infections are caused by antibiotic resistant organisms; there is global consensus that urgent action is needed.

In the Philippines for instance, there were few studies which carried out aspects in compliance with standard precautions on health care facilities. (Padilla *et al.*, 2006; Tayaben, 2015). Research on standard precautions is important and timely taking into account the high incidence of infectious diseases in various regions of the country as compliance to standard precautions are vital to prevent the spread of potentially life-threatening infectious diseases.

Meanwhile, despite extensive actions in the hope to safeguard patient safety, the attainment of health care-associated infections (HAIs) by patients are dramatically common globally. The World Health Organization (WHO) estimates that at least 2 million patients worldwide are affected by HAIs annually. Between 6% and 27% of inpatients from developing countries are affected by HAIs with mortality rates ranging between 18% and 22%. To address this problem, the 57th WHO Congress endorsed the global alliance initiative on infection prevention and control (IPC) in 2004, ratifying the role of hospital IPC committees. It is also believed that no health care facility in the country has a strong infection prevention and control program starting from the formulation of policies down to the creation of an infection prevention and control surveillance team. However, in spite of the various efforts of the health care facility, still health-care related infections still exist. Hence, the researcher finds it necessary to evaluate and identify the standard of infection management, structure, infection prevention control program, and mitigation program in terms of the healthcare facilities' compliance on standard precautions.

THEORITICAL AND EMPERICAL BACKGROUND

This study is anchored on the Health Belief Model (HBM) which is a theoretical model to guide health promotion and disease prevention programs. This Health belief Model is considered one of the first theories on health behavior and most commonly used conceptual frameworks to understand one's health behavior. It was first

developed in the 1950s by social psychologists working in the U.S. Public Health Services, namely, Rosenstock, Hochbaum and Kegels (1950). It was used to explain and predict individual changes in behavior in order to measure preventive measures for the promotion of health (Kozier and Erb, 2010).

The Health Belief Model (HBM) is based on the notion that a person would take one's behavior especially on health-related action if the individual believed that there is the occurrence of a negative health condition which can be avoided: has some positive consequences, if necessary, when a recommended action is taken. In addition, the HBM can be used to design short- and long- term interventions.

The model presents four (4) key concepts which are: (1) perceived susceptibility or one's opinion of chances of getting a condition, (2) perceived severity or one's opinion of how serious a condition and its consequences are, (3) perceived benefits or one's belief in the efficacy of the advised action to reduce risk or seriousness of impact, and (4) perceived barriers or one's opinion of the tangible and psychological costs of the advised action. An added concept, cues to action, was added later to "stimulate behavior". Eventually, a recent addition to the model is the concept of self-efficacy, or one's confidence in the ability to successfully perform an action. This concept was added in 1988 to help the HBM better fit the challenges of changing habitual unhealthy behavior.

Moreover, the study is anchored on the Health Belief Model in the context that in the clinical practice, safe, and quality nursing practice should always be in one's mindset of a clinical practitioner. In the midst of a perceived threat, a perceived susceptibility, and seriousness must also be considered. A clinical practitioner must be efficient and effective in his or her course of actions to achieve health-promoting behaviors for the benefit of the patients, its significant others and the, and the health care team as well.

Additionally, the study is anchored on World Health Organization's Infection Control Standard Precautions in Health Care in 2007 study which states that the standard precautions are meant to reduce the risk of transmission of blood borne and other pathogens from both recognized and unrecognized sources. They are the basic level of infection control precautions which are to be used, as a minimum, in the care of all patients. Hand hygiene is a major component of standard precautions and one of the most effective methods to prevent transmission of pathogens associated with healthcare. In addition to hand hygiene, the use of personal protective equipment should be guided by risk assessment and the extent of contact anticipated with blood and body fluids, or pathogens.

In the same manner, this study is also anchored on the theory of Planned Behavior Framework (Icek Ajzen, 1985) to explore hand hygiene beliefs at the '5 critical moments as cited in the study of Katherin White in 2015, which accentuated that improving hand hygiene among health care workers (HCWs) is the single most effective intervention to reduce health care associated infections in hospitals. Understanding the cognitive determinants of hand hygiene decisions for HCWs with the greatest patient contact (nurses) is essential to improve compliance. The aim of this study was to explore hospital-based nurses' beliefs associated with performing hand hygiene guided by the World Health Organization's (WHO) 5 critical moments. Using the belief-base framework of the Theory of Planned Behavior, we examined attitudinal, normative, and control beliefs underpinning nurses' decisions to perform hand hygiene according to the recently implemented national guidelines.

This study focused on the standard of infection management, infection prevention control, health care mitigation program on infection, and compliance on health care facilities among workers.

Moreover, the diagram below shows the relationship of the variables of this study. It indicates the independent variables which are the standard of infection management (infection control program, infection control committee, surveillance standard, and standards on education training), infection prevention control program (Management of Blood Fluid Spills, Hand Hygiene, Standard Precautions, and Transmission-Based Precautions), and the Mitigation Program of the health care facility which include the designing, constructing, and renovation-infection control, cleaning and disinfection, infection prevention, and control service program, disease specific management A-Z, influenza-plan for the prevention of in-hospital spread, notifiable diseases, multi-drug resistant organism (MRDO) management, and outbreak management for patients, clients, and workers. Evaluating the health-care facilities standard of infection management, infection prevention and control program together with its mitigation program would determine if the health care facility is compliant to the IPC standards set by the World Health Organization.

RESEARCH QUESTIONS

This study aimed to determine the influence of standard of infection management, infection prevention control, and mitigation practices on health care facilities on compliance on standards precautions.

Specifically, it sought answer to the following questions:

1. What is the status of the standard of infection management in terms of:
 - 1.1 Infection control program;
 - 1.2 Infection control committee;
 - 1.3 Surveillance standard; and
 - 1.4 Standards on education and training?
2. What is the status of the infection prevention control of the health care facility in terms of:
 - 2.1 Management of blood and body fluids spills; and
 - 2.2 Transmission based precautions?
3. What is the status of the mitigation program of the health care facilities in terms of:
 - 3.1 Notifiable Diseases;
 - 3.2 Multi-drug Resistant Organism (MRDO);
 - 3.3 Design, construction, and renovation-infection control;
 - 3.4 Cleaning and disinfection;
 - 3.5 Disease specific management A-Z; and
 - 3.6 Influenza-Plan for the In-hospital spread?
4. What is the level of the health care facility's compliance with standard precautions in terms of:
 - 4.1 Hand Hygiene;
 - 4.2 Personal Protective Equipment; and
 - 4.3 Other Compliance Activities?
5. Is there a significant relationship between compliance on standards precautions and: standard of infection management, structure, functions and responsibilities, health care facility infection prevention control, and mitigation programs?
6. Which of the variables, singly or in combination, influence compliance on standard precautions?

Hypotheses

Based on problems 5 and 6, the following null hypotheses were tested at a 0.05 level of significance:

H0₁: There is no significant relationship between compliance on standards precautions and: standard of infection management, structure, functions and responsibilities,

health care facility infection prevention control and control, and mitigation programs.

H0₂: None among the variables such as standard of infection management, structure, functions and responsibilities, infection prevention and control, and mitigation programs influence the compliance on standard precautions.

METHODOLOGY

This study used the Descriptive - Correlational and Causal Research designs all through the preliminary and exploratory investigation to allow the researcher to gather information, summarize, present, and interpret for interpretation. It is also intended to illustrate statistical information from the expected data using the online survey and structured online interview schedule with the participants. A correlational research design measures a relationship between two variables without the researcher controlling either of them (McCombes, 2020). However, causal research design is a kind of research design which is used to obtain the evidence of cause-and-effect relationship between two or more than two variables, where one/some variable/s would be the Dependent and another/rest of the variable would be independent ones (Singh,2020). Under this research, the researcher deliberately manipulates the level or nature of dependent variable in order to see its effect on dependent variable.

Furthermore, the setting of this study were the following identified health care facilities and their health care workers from Iligan City. The identified hospitals were Gregorio T. Lluich Memorial Hospital and Mercy Community Hospital, Inc

RESULTS AND DISCUSSION

The following results were disclosed after analyzing the data gathered.

1. The healthcare facilities' status Standard of Infection Management has an overall mean of 3.81 and a standard deviation of 0.05 which was described to be "high". Under such variable are infection control program with a mean of 3.86 and a standard deviation of 0.01 which is referred to be "high". Moreover, Infection control committee has an overall mean of 3.84 with a standard deviation of 0.02 which is described to be "high". Additionally, the overall mean and the standard deviation of surveillance standard is 3.83 and 0.02, respectively. Finally, standards on education and training have an overall mean of 3.72 and a standard deviation of 0.05 which is also labelled as "high". This means that the standard of infection management of the health care institutions were found to be reliable and substantially support the institution on infection management.
2. The healthcare facilities' status on infection prevention, and control; management of blood and body fluids spills and transmission-based precaution is "high". Specifically, management of blood and body fluids spills has an overall mean of 3.90 with a standard deviation of 0.03 while transmission-based precaution has 4.12 and 0.06, respectively. Both of which are described to be "high". This means that health care agencies status on infection control is reliable and substantial.
3. The healthcare facilities status on mitigation program in terms of notifiable diseases, multi-drug resistant organism, design, construction and renovation, cleaning and disinfection, diseases-specific management, and influenza plan for the in-hospital spread is illustrated as "high". Putting into details, the overall mean of notifiable diseases is 3.92 with a standard deviation of 0.03, multi-drug resistant organism has 3.64 overall mean and 0.04 standard deviation. Further, design, construction and

renovation has an overall mean of 3.54 and a standard deviation of 0.02. The overall mean and the standard deviation of cleaning and disinfection is 4.064 and 0.03, respectively. Moreover, the overall mean of diseases-specific management is 3.81 and the standard deviation is 0.04. Finally, the overall mean and standard deviation of influenza plan for the in-hospital spread is 4.01 and 0.03 respectively.

The healthcare facilities' status on compliance to standard precaution is described to be "high". Under standard precaution are hand hygiene with an overall mean of 4.40 with a standard deviation of 0.05, personal protective equipment with an overall mean of 4.15 and standard deviation of 0.07. While other compliance standard activities have an overall mean and a standard deviation of 4.28 and 0.06 respectively. The healthcare facilities compliance on standard precautions in terms of standard of management structure, functions, and responsibilities (.414**), infection prevention control (.857**), and mitigation program (.645**) are described to be "significant".

- The final model under regression analysis states that an increase in nurses' compliance standards is a decrease of (.107) on Institutional Infection Control Program, a decrease of (-.056) on Infection Control Committee and ICN Nurse, an increase of (.002) on Standards on Education and Training, an increase of (.132) on Management of Blood and Body Fluid Spills, an increase of (.380) on Transmission-Based Precautions, a decrease of (.046) on Notifiable Disease, an increase of (.118) on Multi-drug Resistant Organism (MRDO), a decrease of (.112) on Design Construction and Renovation Infection Control, an increase of (.146) on Cleaning and Disinfection, an increase of (.069) on Disease-Specific Management A-Z, and lastly an increase of (.127) on Influenza Management Strategy.

CONCLUSIONS

Based on the findings of the study, the following were formulated:

There is a high evidence in the status of the healthcare facilities' standard on infection management, structure, function, and responsibilities which means that nurses observe infection control program where in this an infection control committee is also established. Furthermore, the healthcare facility also establishes surveillance standard that oversee these. Education and training among nurses are also provided. Additionally, infection prevention control (management of blood and body fluids, and transmission-based precautions) is "high". This is understood that nurses strictly follow the infection prevention precautionary measures to avoid the spread of any infection related diseases.

Moreover, the mitigation status of the healthcare facility is also high which means that healthcare facilities clearly observe mitigation programs that help infections, diseases, and other health related issues to become more severe and dangerous. Overall, among the variables, only transmission-based infection influence the compliance standard precautions.

RECOMMENDATIONS

In the light of the findings and conclusions in the study, the researcher presents the following recommendations:

- The Department of Health may strengthen the monitoring of IPC programs for its proper implementation among the health care facilities specifically on the indicators which are low performing.

- The health care facilities in charge perhaps review of health-related risk prior to the construction of the facility and may suggest activities that could reinforce the protection of the construction workers against biohazards on the construction sites.
- The local government may constantly communicate and fortify the connection to the healthcare administrators in the making of policies pertaining to the areas of mitigation programs, infection control, and standard management.
- Future researchers may explore other factors influencing the compliance standard precautions. Profiling is also recommended to be included in the future study.

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