

COGNITION AND APPLICATION OF INFECTION CONTROL PRACTICES AMONG THE PERSONNEL OF HOSPITAL FACILITIES IN CEBU

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ABSTRACT

Health care practitioners are mainly responsible for promoting health, managing disorders and preventing complications among their clients and themselves. To do this, they have to be knowledgeable and must properly implement standard infection control practices. This study aims to determine the relationship between the level of knowledge and extent of implementation of infection control practices among the personnel of Hospital facilities in Cebu. This research study utilized quantitative non-experimental descriptive-correlational design. This study was conducted at various tertiary hospital facilities in Cebu. The 400 respondents of this were hospital personnel rendering their duty in any units/area of the hospital during the data gathering procedures. The researchers utilized researcher-made questionnaire to measure the level of knowledge and the extent of infection control practices among hospital personnel in Cebu City tertiary hospitals. Minitab version 13 statistical software was used in data processing. The results showed that most of the respondents are female nurses ages between 20-30 years and have worked for 1-5 years already. Additionally, the level of infection control cognition was very high yet they does not practice proper infection control often. The Pearson r correlation result illustrated that there is no significant correlation between the level of cognition and application of infection control practices among the hospital personnel of hospital facilities in Cebu. It is then concluded that augmenting the level of knowledge of the health care practitioners cannot guarantee improvement of their practices in the area.

Keywords: Infection control practices, cognition, application, hospital facilities, Cebu

BACKGROUND AND RATIONALE OF THE STUDY

Health care professionals are very significant because they are primarily responsible for the promotion of health, prevention of diseases and treatment and rehabilitation of the clients. Thus, health care professionals themselves must maintain their own wellness in order to continue serving the community. According to the Communicable Disease Control (CDC), anyone who is in the hospital is at risk of acquiring hospital-acquired infections (HAIs) or nosocomial infections. Patients and Health Care Practitioners (doctors, nurses, interns/students, dietitian, PT's, OT's, nursing attendants, midwives, and other health care practitioners) are really at higher risk of developing any nosocomial infections/HAIs since they are more exposed to infection causative agents in the hospital.

Public Health Reports stated that HAIs are a common cause of morbidity and mortality and are among the most common adverse events in healthcare. Recently, new emphasis on HAIs for patient safety and public health problem has underscored the need for systematic HAI surveillance as part of a broad-based prevention and control strategy. Furthermore, CDC strives to understand how HAIs happen in order to develop appropriate interventions. A new report from CDC updates the previous estimates of HAIs. In American hospitals alone, HAIs account for an estimated 1.7 million infections and 99,000 associated deaths each year. Of these infections: 32 percent of all healthcare-associated infection are urinary tract infections, 22 percent are surgical site infections, 15 percent are pneumonia (lung infections) and 14 percent are bloodstream infections.

However, DOH stated that Health Care Providers/ Infection Control Practitioners (ICPs) can prevent and/or minimize HAIs by adhering to recommended infection control practices including standard, contact, droplet, and airborne precautions. Infection Control Practices refer to interventions implemented by the health care providers in order to prevent further transmission of infections in hospital settings. Infection Control Practitioners are usually registered nurses but also may be microbiologists, epidemiologists, or medical technologists. The researchers wanted to find out the level of knowledge and the extent of implementation of infection control practices of the hospital personnel in various facilities in Cebu and to determine the relationship between knowledge and practice, to prevent further transmission of infections in hospitals by the healthcare professionals.

THEORETICAL-CONCEPTUAL FRAMEWORK

This study is anchored on Environmental Manipulation theory by Florence Nightingale, Cognitive theory by Jean Piaget and Operant Conditioning by Ivan Pavlov. Florence Nightingale's environmental model is utilized as the core theory which viewed the manipulation of the physical environment as a major component of nursing care. She identified ventilation and warmth, light, noise, variety, bed and bedding, cleanliness of rooms and walls, and nutrition as major areas of the environment that the nurse could control. In her theory, she stated that when one or more aspects of the environment are out of balance, the client must use increased energy to counter the environmental stresses. These stresses drain the client of energy needed for healing. These aspects of the physical environment are also influenced by the social and psychological environment of the individual (*Alligood, 2002*).

One way of organizing Nightingale's environmental model is by implementation client, nurse, and these major environmental concepts must be in balance. The nurse can manipulate the environment to compensate for the client's response to it. The goal of the nurse is to assist the patient to stay in balance. If the environment of a client is in disparity, the client expends unnecessary energy (*George, 1995*).

Health of houses: In Notes on Nursing, Nightingale discussed the importance of health of houses as being closely related to the presence of

pure air, pure water, efficient drainage, cleanliness and light. To support the importance of hospital-based nursing attending to these, Nightingale (*1859/1992*) said, "Badly constructed houses do for the healthy what badly constructed hospitals do for the sick. For insured that the air is stagnant and illness is certain to follow". Nightingale also noted that cleanliness outside the house affected the inside. Nightingale noted that dung heaps outside the houses affected her health in her time, modern families can also be affected by toxic waste, contaminated water and polluted air.

Factors considered in the study correlates with an individual's cognition and behavioral indifferences. Jean Piaget's theory on cognitive development, states that cognitive development consists of age-related changes that occur in mental activities. According to Piaget, intelligence enables individuals to make adaptations to the environment that increases the probability of survival, and through their behavior individuals establish and maintain equilibrium with the environment (*Alligood, 2002*).

Operant Conditioning is rooted in the work of Ivan Pavlov the famous scientist who discovered and documented the principles governing the procedure of teaching animals (humans included). The Cognitive Learning Approach described learning as the acquisition of knowledge. This approach focuses on cognition, that refers to mental activity including thinking, remembering, learning and using language. Thus when applied to learning and teaching, the focus is on the understanding of information and concepts, the understanding of the connections between concepts, or the breaking down of information and rebuilding with logical connections. Thus, this way retention of material and understanding will increase.

Cognitive theory maintains that, how one thinks largely determines how one feels and behaves. This relates to and incorporates all forms of knowledge, including memory, psycholinguistics, thinking, comprehension, motivation, and perception. Allied to this theory is the instrumental conditioning that happens when an animal learns to perform particular behaviors in order to obtain an intrinsically rewarding stimulus. In an experiment, instrumental conditioning has occurred when a trained dolphin leaps out of the water in order to obtain a fish reward, and when a human employee shows up at work in exchange for a paycheck, or when a person does a job for a

certain intention and reward. In the same manner, health care professionals who consider improving and manipulating the environment as necessary to improve health will behave in the same way.

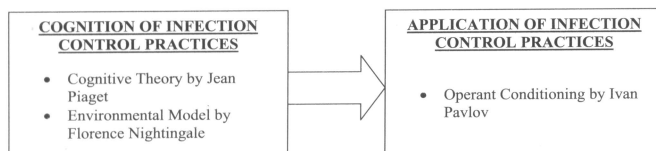


Figure 1. Schematic Diagram of the Conceptual-Theoretical Framework

The figure 1 above shows the relationship between knowledge and practices of the hospital personnel. As illustrated, knowledge (cognitive ability) supported by Jean Piaget and Florence Nightingale can affect their practices (operant conditioning).

REVIEW OF RELATED LITERATURE AND STUDIES

There were various studies regarding infection control practices. Some were determining the level of knowledge and implementation and some others were identifying their correlation.

A study titled "Impact on knowledge and practice of a Multiregional long-term care facility Infection Control Training Program" by Daly, *et al.* (1992) found out that there was a significant difference between the trained and the wait-control group in use of infection control practices, providing evidence for a causal relationship between training and increased use of practices. The training program was effective in producing improvements in knowledge and implementation of recommended infection control practices in long-term care facilities.

A study was conducted on the knowledge level and behavioral practices of staff nurses of Cebu Velez General Hospital in 1998. But there was no strict implementation of the suggested recommendations of the study addressing the problem on nosocomial infections because of the lack of motivation from the nurses (Dimpas, 1998). Included in the study was a discussion on the practice of medical asepsis which takes on added importance in the presence of individuals who have been made more susceptible to infection by illness, surgery, or immunosuppression. Because the nurse may be in contact with a number of patients during any given day, it is especially important to be aware of

the principles of medical asepsis to avoid transferring microorganisms from a patient to the nurse, from the nurse to a patient, from the nurse to co-worker, or from one patient to another.

According to Aarti Vij *et al.*, there existed a positive relationship between knowledge and practice. Both were directly proportional to each other. This indicates that with improved knowledge, we can also improve the practice.

HYPOTHESIS

Health Care Providers who have high level of knowledge will have better infection control practices (Daly, *et al* 1992; Aarti Vij, *et al.*, 2001).

STATEMENT OF THE PROBLEM

The main purpose of this study is to determine if there is a correlation between level of knowledge and extent of implementation of infection control practices.

Specifically, this study aims to answer the following questions:

1. What is the profile of the hospital personnel in terms of:
 - 1.1 Gender;
 - 1.2 Age;
 - 1.3 Profession; and
 - 1.4 Length of service?
2. What is the level of knowledge and the extent of implementation of infection control practices among hospital personnel?
3. Is there a significant correlation between the level of knowledge and the extent of implementation of infection control practices among hospital personnel?

RESEARCH METHODOLOGY

Research Design

This research study utilized descriptive-correlational design. This is a method designed to determine if two or more variables are associated with each other and to describe the present behaviour or characteristics of a particular population. The relationship between level of knowledge and infection control practices of the respondents is determined.

Research Respondents

The respondents are the health care providers of the hospital facilities, public or private, in Cebu like physicians, nurses, physical therapist/occupational therapists, nurse aids and medical technologists.

Research Locale

This study was conducted at various tertiary hospital facilities in Cebu. The 400 respondents were hospital personnel rendering their duty in any units/area of the hospital during the data gathering procedures. Two private and two public hospitals were included. The names of the hospital cannot be divulged to maintain confidentiality.

Research Instrument

The researchers utilized a researcher-made standardized questionnaires from WHO, measuring the level of knowledge and the extent of infection control practices among hospital personnel on Cebu City hospitals. There are two parts of the questionnaire, knowledge and practices. Each part has 20 questions to determine the profile of the respondents in terms of employment position, area of assignment and length of service, their level of knowledge and extent of implementation.

DATA GATHERING PROCEDURES

The researcher submitted a transmittal letter to the heads of the institutions and informed about the consent of the respondents. Then the proponents distributed the standardized questionnaires to the respondents. The collected data were then gathered, analyzed and interpreted. Minitab version 13 statistical software was used in data processing.

STATISTICAL TREATMENT

To process the demographics of the respondents, percentage was utilized and to determine the relationship of knowledge and practices, Pearson r correlation was used.

RESULTS AND DISCUSSIONS

This section interprets results of this study.

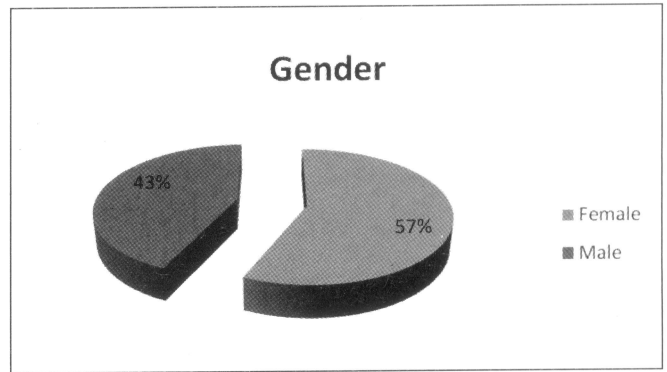


Figure 2. Gender Distribution of Respondents

As shown in the graph, there is a slight difference between the distributions of the respondents when gender is concerned. Females are 14% more compared to the males. This is contributed to the fact that medical related professions are highly female dominated. The study by Beckers (2005), supports that medical-related professions are dominated by females.

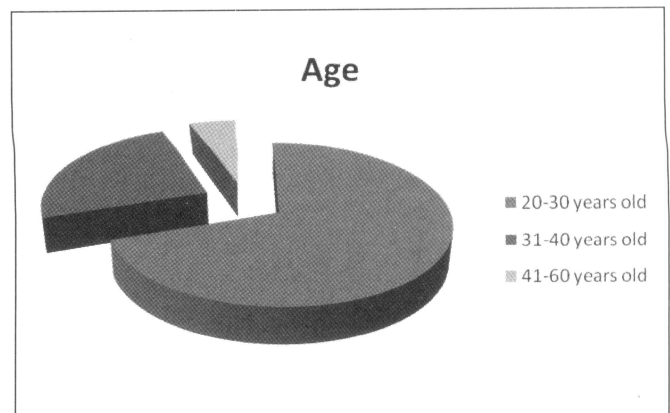


Figure 3. Age Distribution of Respondents

Accounting for more than a half of the sample (75%) are medical professionals that belong to the age group of 20 and 30 years. Almost one-fourth (20%) are between 31 and 40 years of age while barely one tenth of the proportion belongs to the older adult age group (ages between 40 and 60 years old). Young professionals are being accepted in the hospitals facilities because in the last decade, it is noticeable that young generations continue their professional/ educational qualification like masteral and doctoral degrees. These young professionals are hired because they are highly competitive and qualified.

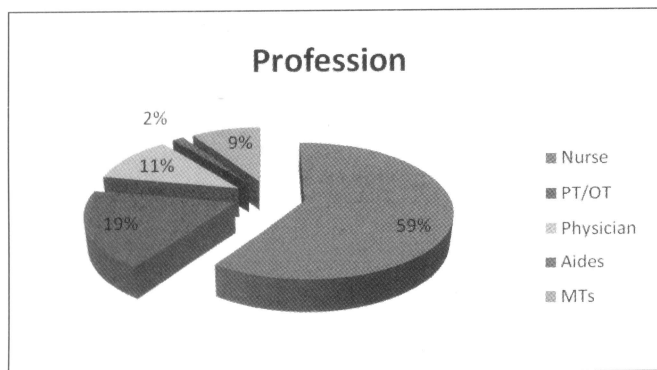


Figure 4. Distribution of Respondents according to Profession

Figure 4 shows the distribution of the respondents in terms of profession. More than half of the respondents are nurses, one-fifth are occupational and physical therapists, one tenth are physicians and another one tenth are medical technologists while the remaining are nurse aids. Thus it can be deduced from this fact that the majority of the manpower of health care facilities are nurses.

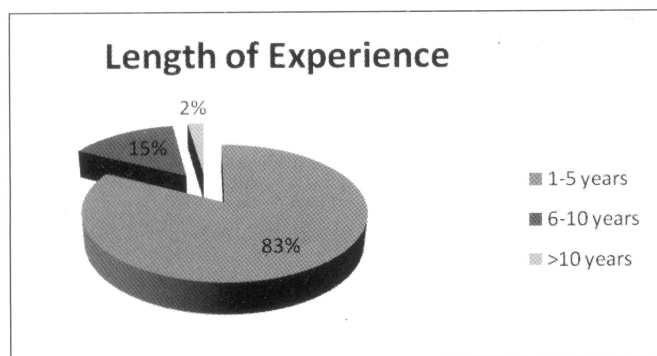


Figure 5. Distribution of Respondents according to Length of Service

When the length of service is concerned, medical professionals whose experience ranged between 1 and 5 years comprised an astounding fraction of respondents accounting to over 83% of the total respondents while those with experiences 10 years and above account for a trivial 2% of the respondents only. This can be explained by the study conducted by Soria (2011) that elucidated the increasing incidences of overseas employment of experienced Filipino professionals, including those of the medical-related careers. With fewer jobs and less opportunities for nurses in the Philippines, many nurses and nursing students have

a desire to work overseas where the salary is better and they feel compensated for their hard work.

Table 1. Pearson Correlation Result

Variables	Mean Scores	r	p value
Cognition	82.67	0.110	0.206
Application	74.56		

The results show that the infection control knowledge of the respondents is very high. However, in terms of application, they does not often practice proper infection control. The statistical p value illustrated that there is no significant correlation between knowledge and practices of the respondents. This is supported by a study conducted on the knowledge level and behavioral practices of staff nurses of Cebu Velez General Hospital in 1998 (Dimpas, 1998). This implies that improved knowledge does not necessary improve the practice and that training programs focusing on enhancing knowledge were not effective in developing appropriate practices.

CONCLUSION

The results showed that most of the respondents are female nurses ages between 20-30 years and have worked for 1-5 years already. Additionally, the level of infection control cognition was very high yet they did not practice proper infection control often. The Pearson r correlation result illustrated that there is no significant correlation between the level of cognition and application of infection control practices among the hospital personnel of hospital facilities in Cebu.

It is then concluded that augmenting the level of knowledge of the health care practitioners cannot guarantee improvement of their practices in the area.

RECOMMENDATIONS

1. The administration and other authorities should evaluate the health care providers' development techniques (seminars, information dissemination, etc.) since knowledge is not enough to ensure enhancement of their practices.
2. For researchers to explore on other factors that could possibly influence the practices of health care providers.

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