NURSES' KNOWLEDGE, ATTITUDE AND PRACTICE ON EYE CARE IN CRITICAL CARE AREA AT HOSPITAL UNIVERSITI SAINS MALAYSIA

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by

NUR SABRINA BINTI HASHIM

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CERTIFICATE

This is to certify that the dissertation entitled "Nurses' Knowledge, Attitude and Practice on Eye Care in Critical Care Area at Hospital Universiti Sains Malaysia" is the bona fide record of research work done by Ms Nur Sabrina binti Hashim during the period from October 2020 to June 2021 under my supervision. I have read this dissertation and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfillment for the degree of Bachelor of Nursing (Honours).

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research and promotional purposes.

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LIST OF ABBREVIATIONS

ICU	Intensive Care Unit
HUSM	Hospital Universiti Sains Malaysia
SPSS	Statistical Package for Social Science Software

ABSTRAK

Penjagaan mata adalah komponen penting dalam penjagaan kejururawatan bagi pesakit yang mengalami penyakit kritikal yang sangat terdedah kepada kecederaan mata kerana penyakit dan rawatan mereka boleh menjejaskan mekanisme pelindung mata. Oleh itu, penjagaan mata adalah bidang penting dalam penjagaan kritikal. Walau bagaimanapun, kurangnya kajian penjagaan mata adalah masalah biasa di seluruh dunia. Tujuan kajian ini adalah untuk mengetahui tahap pengetahuan, sikap dan amalan jururawat mengenai penjagaan mata di wad rawatan kritikal di Hospital USM. Di samping itu, kajian ini juga mengkaji hubungan dan korelasi data demografi antara pengetahuan, sikap dan amalan jururawat mengenai penjagaan mata. Kajian ini dilakukan dengan menggunakan soal selidik yang dikendalikan sendiri dan data dikumpulkan dari 118 jururawat di lima jenis ICU di HUSM. Hasil kajian mendapati bahawa majoriti responden mempunyai tahap pengetahuan yang tidak memuaskan (94.1%). Sebaliknya, majoriti responden mempunyai tahap sikap yang memuaskan (94.1%) dan praktik (89.8%) pada penjagaan mata. Di samping itu, hasil kajian menunjukkan bahawa dua faktor sosiodemografi yang berkaitan dengan pengetahuan jururawat mengenai penjagaan mata adalah jantina ($p = 0.027$) dan pengalaman bekerja sebagai jururawat ($p = 0.041$). Selain itu, penemuan ini juga merangkum bahawa terdapat hubungan yang signifikan secara statistik antara sikap jururawat terhadap kepentingan penjagaan mata dan amalan penjagaan mata pada pesakit yang berventilasi mekanik ($r = 0.51$, $p = 0.000$).

ABSTRACT

Eye care is an essential component of nursing care for critically ill patients who are particularly vulnerable to eye disorders because their illness and treatment can compromise ocular protective mechanisms. Hence, eye care is important in critical care area. However, lack of eye care studies is a common issue across the globe. The aimed of this study to determine the level of nurses' knowledge, attitude and practice on eye care in critical care ward at Hospital USM. Besides, this study also investigated the association and correlation of demographic data between nurses' knowledge, attitude and practice on eye care. This study was conducted using a self-administrated questionnaire and the data were collected from 118 nurses in five kinds of ICUs at HUSM. The findings revealed that majority of the respondents had unsatisfactory level of knowledge (94.1%). In contrast, majority of the respondents had satisfactory level on attitude (94.1%) and practice (89.8%) on eye care. In addition, the results showed that two sociodemographic factors significantly associated with nurses' knowledge on eye care were gender ($p=0.027$) and years of experience working as a nurse ($p=0.041$). Plus, the findings also summarized that there is statistically significant correlation between nurses' attitude towards the importance of eye care and eye care practices in mechanically ventilated patients ($r=0.51$, $p=0.000$).

CHAPTER 1:
INTRODUCTION

1.1 Background of study

Eye care is a prevention or minimization of threats to eye or visual integrity (Medical Dictionary, 2020). It is an essential component in the management of critically ill patients. Standardized eye care can prevent corneal complications in ventilated patients (Azfar, Khan, & Alzeer, 2013). According to Kalhori, Ehsani, Daneshgar, Ashtarian, & Rezaei (2015) vision sense is vital sense of human. Visual impairment is associated with a reduced quality of life, loss of independence, reduced mobility and poor mental health (Sansome & Lin, 2020).

1.1.1 Prevalence

According to a study by Güler et al. (2017) in Palestine and Turkey, the study stated that eye infections, dry eye syndrome, and conjunctival chemosis were the most indicated eye problems by the Palestinian nurses. While, eye infections, dry eye syndrome, exposure keratopathy and eyelid disorders (32.1%) were reported by a higher population of the Intensive Care Unit (ICU) nurses participating from Turkey.

In another study, it stated that ocular surface disease is common in the intensive care population with 20-42% of patients developing corneal epithelial defects (Hearne, Hearne, Montgomery, & Lightman, 2018). In addition, according to a study by Azfar et al. (2013) in Saudi Arabia, the study concluded that the incidence of eye-related complications in intensive care patients in different studies varies from 3% to 60% which include exposure keratitis and other corneal complications as well.

Moreover, it was concluded that corneal injuries developed in 59·4% of ICU patients (Werli-Alvarenga, Ercole, Botoni, Oliveira, & Chianca, 2011).

Plus, a study in Jordan, exposure keratopathy occurred in 57% of comatose patients in ICU (Jammal et al., 2012). In addition, a study summarized that the main eye complications in ICU patients are conjunctivitis, corneal abrasion, chemosis, lagophthalmos, dry eye, exposure keratopathy, microbial keratitis and endophthalmitis. If untreated, it may lead to loss of vision (Güler et al., 2017). In a retrospective study conducted in Korea, eye disorder incidence in ICU patients was 8 to 6% occurring at an average of 6 to 8 days after admission to the ICU (Cho, Yoo, Yun, & Hwang, 2017).

1.1.2 Causes

In normal individuals, a healthy ocular surface is vital in preventing infection. In critically ill unconscious patients, they are often immunocompromised due to the underlying pathological process and impairment of consciousness. These complex medical conditions and other factors arising from ICU environment can reduce the natural defense mechanisms of the eye. For instance, use of sedatives and neuromuscular blockers inhibit active contraction of the orbicularis oculi muscle, resulting in incomplete eyelid closure, corneal exposure, and dryness. Moreover, insufficiency in protective mechanisms makes the patients' eyes more susceptible to ocular surface disorders (Alansari, Hijazi, & Maghrabi, 2015; Cho et al., 2017; Güler et al., 2017; Milutinovic, Cvijanovic, Ciric, Jovanovic, & Andrijevic, 2017). The study by Güler et al. (2017) also concluded that lack of defense mechanisms in

critically ill patients may lead to drying, infection, ulceration, perforation, and scarring of cornea that can seriously impaired visual acuity and quality of life.

1.1.3 Risk factors of Eye Complication in Critical Care Area

According to studies, it stated that incomplete lid closure is the major significant predisposing factor for ocular surface disease. In critically ill individuals, they frequently have poor eye lid closure and a reduced ability to use the protective blink reflex due to the effects of sedation and muscle relaxants used to enable other aspects of care (Alansari et al., 2015; Hearne et al., 2018).

Furthermore, a study by Alansari et al. (2015) also concluded that all the ICU patients with ocular infections were preceded by colonization of the respiratory tract by the pathogenic organism. Procedures such as endotracheal suctioning may lead to aerosol inoculation of the susceptible patients' corneal surface by respiratory tract organisms and thus increasing the risk of eye infection and then vision loss.

In addition, in a study of a cluster of ten nosocomial eye infections occurring in three ICUs, researcher found that nine of the ten patients were intubated, all of whom had copious sputum production. The study indicates that the bacteria isolated from the patients' sputum samples and the eyes were identical in nine cases. It is also stated that only the left eye was infected in all cases and three patients lost their sight. In this investigation, nurses were found to withdraw the tracheal suctioning catheter diagonally across the patient's face, which may explain the selective involvement of the left eye (Alansari et al., 2015).

1.1.4 Management of Eye Care

Güler et al. (2017) concluded that eye care is recognized as a fundamental nursing procedure essential for ICU patients to eliminate ocular complications. The study also concluded that effective management of eye diseases in ICU patients is accomplished through monitoring signs of complications and an effective eye care. A variety of eye care regimens are available for intensive care patients. Moreover, according to Azfar et al. (2013), the basic principle for preventing eye related complication is meticulous and protocolized care. According to a study, regular eye care for intubated and ventilated patients is considered routine nursing practice. Specific eye care practice has included regimens of cleaning the eyes with sterile water or normal saline every two to four hours, twice daily or daily (Johnson & Rolls, 2014). Plus, eyelid closure must be assessed at the time of admission and at least daily thereafter, with findings clearly documented. It is crucial to examine for the presence of incomplete closure of the eyelid and, if it is present, the grade of severity must be assessed to help determine management (Sansome & Lin, 2020).

In conclusion, eye care is one of the most important yet simple nursing procedures needed for critical care patients (Alansari et al., 2015). It is an essential intervention to prevent ocular complications. Nurses may accomplish effective management of eye diseases for critically ill unconscious patients by providing an effective eye care and monitoring signs of complications. Hence, risk of eye complications may be reduced.

1.1.5 Importance of Eye Care

Eye care is a fundamental nursing procedure and highly efficient approach for the prevention of eye problems. The first and most critical step in health care is an early diagnosis. The identification of eye disorders, as well as the documenting of the results, lead the way in care and treatment. Hence, through the assessment, which is conducted regularly, could avoid unnoticed ophthalmic conditions and additional complications that could arise later. As the treatment time reduces, it can minimize the costs of treatment and the workload and enhances the quality of life of the patient (Kocaçal Güler, Eşer, & Eğrilmez, 2018). In the ICU, it is necessary to regularly assess ocular conditions and provide guideline-based eye care to prevent and minimize incidences of ophthalmological complications in ICU patients (Cho, Yoo, Yun, & Hwang, 2017).

1.2 Problem Statement

Eye care is recognized as a fundamental nursing procedure essential for ICU patients to eliminate ocular complications. However, for several factors, eye care is undervalued by nurses who treat unconscious patients as they usually will focus on life threatening matters. Eye problems is often given low priority compared to the life threatening problems (Alansari et al., 2015; Ebadi, Saeid, Ashrafi, & Taheri-Kharameh, 2017; Güler et al., 2017).

The study by Güler et al. (2017) also concluded that anticipating and preventing eye problems are not common among the ICU team. In addition to this negligence, a variety of eye care regimens have been used in point of the frequency and method during performing eye care. The study also concluded that a universally accepted

protocol for eye care in critically ill patients is lacking. Plus, it also stated that lack of eye care studies in critically ill patients is a common issue across the globe, especially in developing and underdeveloped countries. Therefore, little information is currently available about the incidence, treatment, and eye care of ocular problems in ICU patients.

In addition, a study by Alansari et al. (2015) also stated that there is limited research available to determine or compare the efficacy of treatment modalities, making the description of evidence-based practices supporting eye care difficult. As a result, eye care treatment in different ICUs continues to be performed on the basis of individual beliefs and tradition. Plus, eye care protocols are commonly not instigated and documentation of eye care is often poor (Hearne et al., 2018).

Moreover, previous study by Ebadi et al. (2017) reported that critical care staff lack knowledge in terms of standard eye care and hence show considerable variation in caring for similar eye disorders. Consequently, lack of the necessary knowledge, attitudes or skills can be considered as a barrier for providing eye care in the ICU.

Therefore, needs assessment by conducting this study will identify important clinical deficiencies and then will determine by which a particular deficiency can be redressed. Hence, this study will identify which factors such as knowledge, attitudes and practices which lessen from optimum performance on eye management of critical care patients.

1.3 Research Questions

1) What is the level of nurses' knowledge, attitude and practice on eye care in critical care ward at Hospital Universiti Sains Malaysia (HUSM)?
2) Is there any association between demographic data (age, gender, educational level, years' experience as a nurse, years' experience in critical care nursing, type of ICU, eye care guideline) and nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM?
3) Is there any correlation between nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM?

1.4 Research Objective

1.4.1 General objective

The purpose of this research is to assess the level of nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.

1.4.2 Specific objectives

1) To determine the level of nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.
2) To determine the association between demographic data (age, gender, educational level, years of experience as a nurse, years' experience in critical care nursing, type of ICU, eye care guideline) and nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.
3) To determine correlation between nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.

1.5 Research Hypothesis

1) H_0: There is no significant association between demographic data (age, gender, educational level, years of experience as a nurse, years' experience in critical care nursing, type of ICU, eye care guideline) and nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.

   H_A: There is significant association between demographic data (age, gender, educational level, years of experience as a nurse, years' experience in critical care nursing, type of ICU, eye care guideline) and nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.

2) H_0: There is no significant correlation between nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.

   H_A: There is significant correlation between nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.

1.6 Significance of Study

The goal of this study is to determine the level of nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM. Therefore, this study will be able to provide data of the level of nurses' knowledge, their attitude towards eye care and how they practice eye care in ICU. Plus, from the study, it will also provide data on which factors associated with the level of nurses' knowledge, attitude and practice on eye in ICU. In addition, this study will also be able to identify the relationship between those domains which are knowledge, attitude and practice on eye care among critical care nurses. Thus, this research can be helpful in gaining insight how critical care nurses view the practice of eye care in their service. This study would also be able to highlight causes that may lead to eye problems. In conclusion, the result of this study can help health authorities to plan effective strategies for further increases awareness, emphasize the importance of eye care and at then help to reduce the rate of eye problems among patients in ICU.

1.7 Conceptual and Operational Definitions

Terms	Conceptual definitions	Operational definitions
Knowledge	Understanding of an information about a subject that you get by experience or study, either known by one person or by people generally (Cambridge Dictionary, 2020).	The level of understanding among critical care nurses regarding effective eye care.
Attitude	Attitude is the way you feel about something or someone, or a particular feeling or opinion (Cambridge Dictionary, 2020).	Nurses opinion towards prioritizing eye care in nursing care.
Practice	Doing an activity or training regularly so that you can improve your skill (Oxford Dictionary, 2020).	Rate at which effective eye care is exercised by the nurses in critical care setting.
Eye care	Prevention or minimization of threats to eye or visual integrity (Medical Dictionary, 2020).	A care to maintain patient's eye hygiene which will provide comfort to the patient and prevent complications caused by infection.
Critical care	The specialized care of patients whose conditions are life-threatening and who require comprehensive care and constant monitoring, usually in intensive care units. Also known as intensive care (Meriam-Webster Medical Dictionary, 2020).	A type of care which is essential for patients with life threatening condition. A nurse must be competence and highly skilled in providing comprehensive care for the patients.

Table 1.1 Definition of Terms

CHAPTER 2:
LITERATURE REVIEW

2.1 Introduction

Literature review is a summary, analysis and evaluation of the literature and an explanation of what research has been performed for a research area. Hence, in this section, the information are based on previous studies that had been done (Wolverhampton University, 2018). It consists of level of nurses' knowledge on eye care, level of view and attitude on eye care, level of practice on eye care, association between demographic data and level of knowledge, attitude and practice and lastly correlation between knowledge, attitude and practice on eye care.

2.2 Review of Literature

2.2.1 Nurses' Knowledge on Eye Care

In Korea, a study conducted by Cho et al. (2017) shows that 81% of 30 ICU nurses, their knowledge of risk factors associated with eye diseases was intermediate while their knowledge of eye care strategies and appropriate eye care was poor, suggesting that eye care was rarely given attention in acute intensive care. The study concluded that after the introduction of the educational programs, the levels of eye care related knowledge, awareness and self-reported eye care experience were improved by the nurses. Plus, a study conducted by Demirel, Cumurcu, Fırat, Aydogan, & Doğanay (2014) concluded that by providing 260 ICU nurses and 40 doctors with a basic eye care procedure and introducing eye care education, their investigation into the incidence of keratopathy after one year found that educational programs for eye care were successful for early detection of eye disorders.

In addition, a study done by Alghamdi, Ghaleb, Elmetwaly, & Aal (2018) in Saudi Arabia also concluded that ICU nurses' level of knowledge concerning eye care of mechanically ventilated patients ranged between adequate and inadequate and did not reach satisfactory level. The total score of 55 nurses' knowledge of eye care revealed that less than half (46.7%) of intensive care unit ICU nurses have adequate knowledge and (40%) have inadequate knowledge.

Furthermore, a study in Palestine concluded that their critical care nurses were lacking some knowledge and practices regarding eye care. However, after educational handout, demonstrations and the designed protocol showed a positive impact in improving nurse's knowledge and practices and in lowering the percentage of eye health complications (Hussein, Fashafsheh, Morsy, Ismaeel, & Abu, 2013). In conclusion, most studies indicated that nurses have lack of knowledge regarding eye care towards ICU patients.

2.2.2 Nurses' Attitude on Eye Care

A study among 55 nurses from medical and surgical intensive care units by Alghamdi et al. (2018) concluded that priority of eye care in the ICU clarifies that among the other procedures in the first care plan, majority of the nurses gave eye care as a least priority procedure. In addition, a study in Iran summarized that eye care is neglected in 62% of ICU patients as the critically ill patients have many clinical problems and complex treatments, which may make eye care a lower priority (Masoudi Alavi, Sharifitabar, Shaeri, & Adib Hajbaghery, 2014). Plus, a study stated that no special eye practice is performed by ICU staff in general unless the signs and clinical results linked to eye problems are clearly visible. This situation could raises

the risk of eye problems and induces vision impairment during the recovery period of the critical disease (Kocaçal Güler, Eşer, & Eğrilmez, 2018). Moreover, a study in India also summarized that out of 10 possible activities, only 9 nurses (8%) reported performing eye care as the first task, none of the nurses maintained a register to document eye problems encountered in their ICU (Vyas, Mahobia, & Bawankure, 2018). Furthermore, a study by Güler et al. (2017) stated that from 111 nurses in Turkey and Palestine, the Turkish nurses (87.5%) stated that there was a routine eye examination of ICU patients in their units, whereas 61.1% of the Palestinian nurses cited patients' eyes were regularly assessed in their units ($p < 0.05$).

2.2.3 Nurses' Practice on Eye care

According to a study in Korea by Cho, Yoo, Yun, & Hwang (2017), it indicates that 81% of 30 ICU nurses had no experience in performing assessments for administering eye care. Plus, the study also concluded that in ICU setting, the medical staff is primarily concerned with stabilization of vital bodily functions, including cardiovascular, respiratory and neurological status. Therefore, the levels of awareness and practice by medical staff with regard to eye care are relatively low, which can sometimes lead to overlooked symptoms and signs of ophthalmological complications.

Besides, a study included 120 nurses in India concluded that only six nurses (5%) followed a strict protocol for eye care, 52 nurses (43%) checked for eyelid closure in the ventilated patients, and 58 (48%) cleaned the eyes frequently. Those who were aware of exposure keratopathy checked eyelid closure (73% vs. 48%) and cleaned eyes with saline gauze more frequently (24% vs. 4%). In addition, a study by Kalhori

et al. (2015) reported the use of polyethylene cover as a non-aggressive and non-pharmaceutical nursing and therapeutic method for prevention of keratopathy in the patient hospitalized in intensive care unit.

Moreover, a study in Saudi Arabia by Alghamdi et al. (2018) reported that most methods used by nurses for eye care were cleansing eyes with sterile gauze soaked with normal saline every two to six hours, covering the eye with polyethylene cover, instillation of artificial eye drop and ointment and passive eyelid closure. The effectiveness of these procedures depends on the degree of eye complication, using the appropriate methods and the nurses' skills and knowledge in performing the procedure. The study also concluded that the majority of nurses have a good perception on the practices and more than 70% of them strongly agree on the practices of assessment of eye, its infection control, prevention and management of the eye complications.

2.2.4 Association between Demographic Characteristics and Nurses' Knowledge, Attitude and Practice on Eye Care

According to a study in India by Vyas et al. (2018), nurses in cardiac ICU were significantly less aware of exposure complications compared to medical ICU nurses (40% reduction in awareness, 95% CI = 0.37–0.98, P = 0.04). The study also concluded that there were no differences in the attitude and pattern of delivering eye care in male nurses and females nurses. However, those with less experience cited a lack of adequate knowledge and skill about eye care in the ICU setting as a significant barrier for delivering eye care. Plus, on comparing those with a diploma versus degree in nursing, the study found no significant differences in the attitude and pattern of

delivering eye care in the two groups. However, a greater proportion of those with a nursing degree reported a lack of adequate knowledge and skill to deliver eye care (Vyas et al., 2018).

Furthermore, a study by Alghamdi et al. (2018) among 55 nurses showed that less than half (46.7%) of ICU nurses had adequate score of knowledge and forty percent (40%) had inadequate score of knowledge related to eye care, while (22.2%) of nurses in the surgical ICU had satisfactory score of knowledge compared with (0%) of those in the medical ICU. The study also concluded that there is no statistical difference between age of the participants and their score in knowledge and perception (P=0.217) for knowledge and (P=0.709) for perception. Furthermore, for experience in ICU, there is no significant relationship in the total score of knowledge and perception. (Alghamdi et al., 2018).

2.2.5 Correlation between Knowledge, Attitude and Practice on Eye Care among ICU Nurses

Knowles et al. (2015) suggested that the knowledge, behaviors and values of clinicians will influence their attitudes and improve guided implementation techniques, indicating that knowledge and attitudes are essential factors in increasing nursing implementation. In addition, a study reported that critical care staff lack of knowledge in terms of standard eye care and hence, showed considerable variation in caring for similar eye disorders. Consequently, lack of the necessary knowledge, attitudes or skills can be considered as a barrier for providing eye care in the ICU (Ebadi et al., 2017). Alghamdi et al. (2018) also suggested that the importance of establishing a written updated protocol for eyes assessment and care with continuous

education and appraisal to ensure enough knowledge, and complete safe practices, which certainly leads to minimizing the incidence of eye complications.

2.3 Theoretical / Conceptual Framework

Health Belief Model (HBM) used as a base for theoretical framework for this study. The HBM was developed in the 1950s by social psychologists which were Hochbaum, Rosenstock and Kegels at the U.S. Public Health Service (Rosenstock, Strecher, & Becker, 1988). The HBM is one of the most widely used conceptual frameworks for understanding health behavior. It is suggest that a person's belief in a personal threat of an illness or disease together with a person's belief in the effectiveness of the recommended health behavior or action will predict the likelihood the person will adopt the behavior (Orji, Vassileva, & Mandryk, 2012).

According to the HBM, it contains several constructs that predict health behavior which are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy. First, perceived susceptibility refers to a person's subjective perception of the risk of acquiring an illness or disease. It predicts that individuals who perceive that they are susceptible to a particular health problem will engage in behaviors to reduce their risk of developing the health problem. Individuals with low perceived susceptibility may deny that they are at risk for contracting a particular illness.

Second, perceived severity. It proposes that individuals who perceive a given health problem as serious are more likely to engage in behaviors to prevent the health problem from occurring. Thirdly, perceived benefits refer to individual’s belief in the efficacy of the advised action to reduce risk or seriousness of impact. Next, perceived

barriers refer to an individual's assessment of the obstacles to behavior change. Then, cues to action is stimulus needed to trigger the decision-making process to accept a recommended health action. Lastly, self-efficacy refers to individual's perception of his or her competence to successfully perform a behavior (Carpenter, 2010; Jones et al., 2015; Orji et al., 2012; Rosenstock et al., 1988; Tarkang & Zotor, 2015).

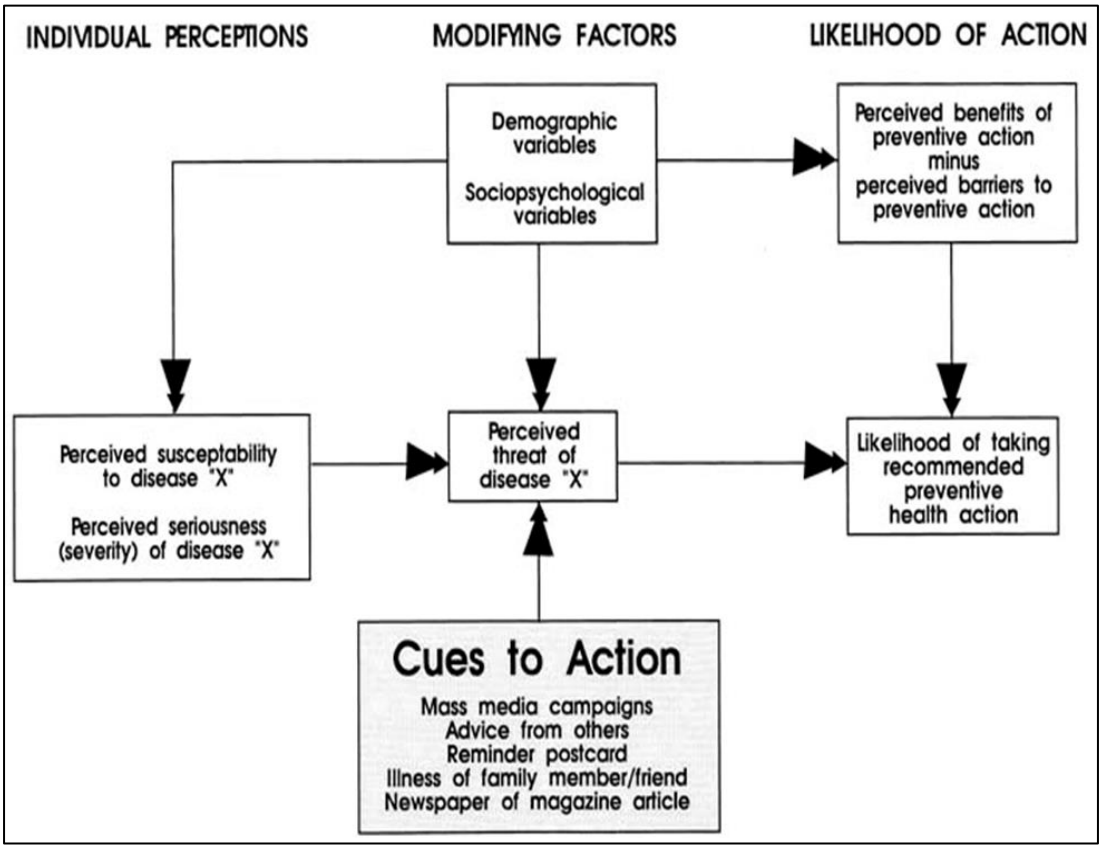

Figure 2.1 Theoretical Framework of Health Belief Model

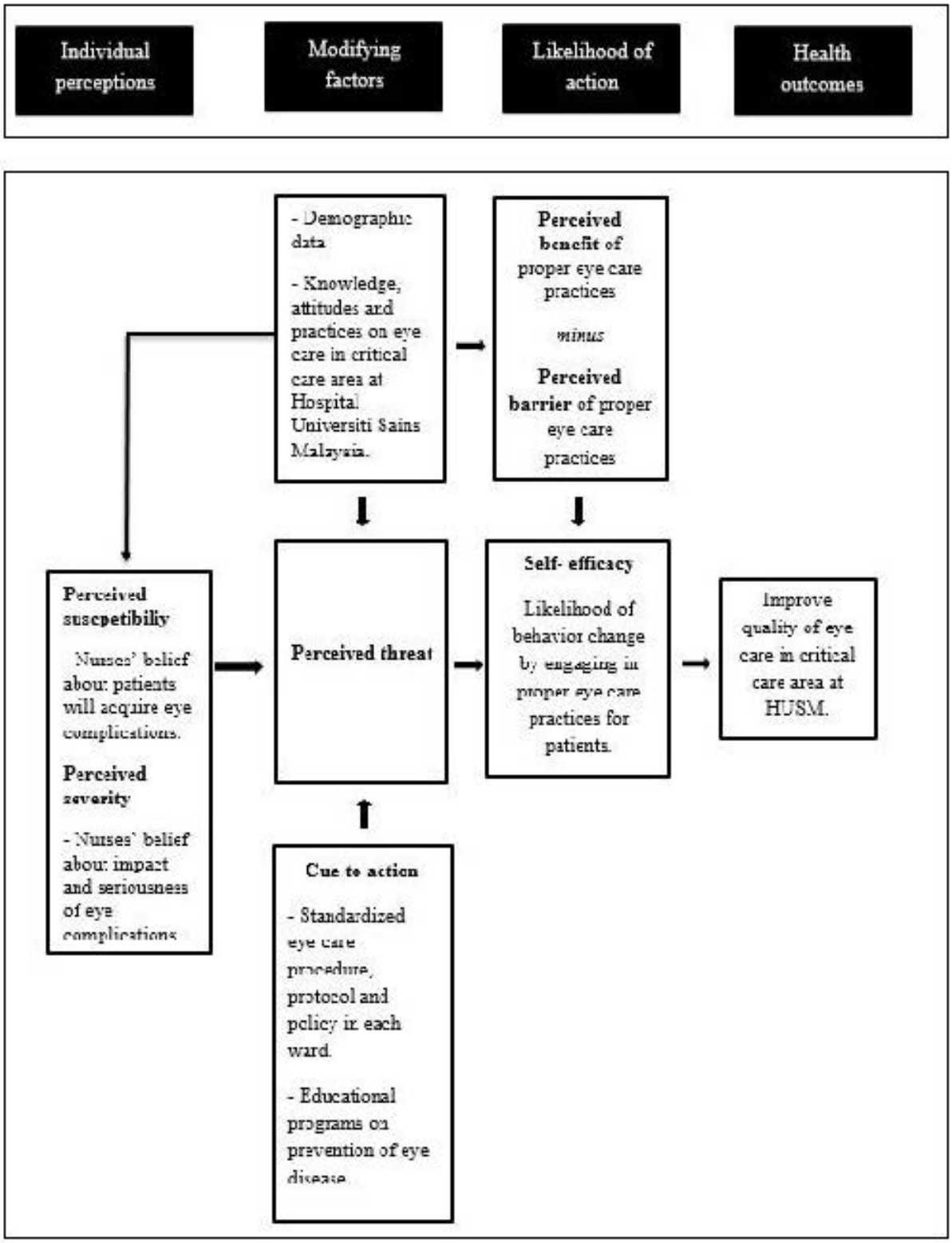

Figure 2.2 Modified Health Belief Model

Figure 2.2 illustrates a modified Health Belief model that applied in this study. The modified HBM differs from the original model as it is applied to nurses that working in critical care area. In this study, it assessed on behavior of critical care nurses in providing effective eye care for patients at HUSM. According to modified HBM, perceived susceptibility refers to nurses' belief that critically ill patients will develop eye disease if there is no preventive actions are taken. Second, perceived severity is when the nurses believe that the eye disease would seriously affects the patients' eye condition and recovery process if it leaving untreated. Thirdly, perceived benefits refers to nurses' belief about potential positive aspects that the patients will receive if they providing effective eye care to the patients, for example nurses believe that providing eye care will reduce risk of patients getting eye complications.

Next, perceived barrier is when the nurses feel certain hardship in providing eye care for patients and would demotivate them to perform such as limited time or lack of knowledge. Plus, cue to action refers to factors which trigger nurses to provide effective eye care, for instance standardized eye care procedure and protocol in hospital, educational programs on prevention of eye disease or advice from physicians. In addition, perceived threat is an nurses' cognitive assessment of the likelihood a danger will affect patients and how bad it will be if it does cause by they are not performing eye care for patients. Lastly, self-efficacy refers to the nurses' perception of his or her competence to successfully perform proper eye care practices for patients.

CHAPTER 3:
METHODOLOGY

3.1 Introduction

In this section, research methodology such as research design, study setting, study population, samping plan, instrumentation, validition and reliability of instrument, variables, data collection method and ethical consideration has been discussed.

3.2 Research Design

The study design for this research was cross-sectional study and it was a quantitative study. The objective of this study was to assess level of nurses' knowledge, attitude and practice on eye care in critical care ward at HUSM.

3.3 Study setting and population

The study was conducted from October 2020 until June 2021. This study was conducted specifically on critical care ward at Hospital Universiti Sains Malaysia. Target population of this study were Registered Nurses that working in critical care ward at Hospital Universiti Sains Malaysia. Thus, included 1 Mutiara ward (ICU) consisted of 45 nurses, 1 Fairuz ward consisted of 20 nurses, 8 Selatan ward consisted of 30 nurses, 2 Delima ward consisted of 39 nurses and Surgical ICU ward with 26 nurses.

3.4 Sampling plan

3.4.1 Sample criteria

Inclusion criteria:

1. Registered Nurse in Hospital Universiti Sains Malaysia
2. Currently working in critical care area

Exclusion criteria:

1. Subject who worked as temporary staff
2. Practical students or trainees

3.4.2 Sample size estimation

The total population of critical care nurses at Hospital Universiti Sains Malaysia was 158. This study used Cochran's formula (Taherdoost, 2017) to calculate sample size estimation:

$$n0 = \frac{z^2 p(1-p)}{e^2}$$

Whereby,

$n0$ = Required sample size

Z = Value representing the desired confidence level (CI:95%, Z-1.96)

e = Level of precision, ±5% (0.05)

p = Anticipated population proportion, p = 50% (0.5)

Calculation:

$$n0 = \frac{Z^2 p(1-p)}{e^2}$$

$$n0 = \frac{(1.96)^2(0.5)(1-0.5)}{0.05^2}$$

$$n0 = 384.16$$

$$n0 = 384$$

The sample size calculated from this formula was bigger than the targeted population.

Therefore, a modification was made using this equation:

$$n = \frac{n0}{1 + \frac{(n0-1)}{N}}$$

Whereby,

n0 = Unadjusted sample size, 384

N = Targeted population size, N = 158

Calculation:

$$n = \frac{384}{1 + \frac{(384-1)}{158}}$$

$$n = 112.15$$

$$n = 112$$

The sample size calculated from this equation was 112 nurses and after considering 5% drop out, the calculation for the sample size was:

$$n = \frac{n\ calculated}{1 - dropout\ rate}$$

$$n = \frac{112}{1 - 0.05}$$

$$n = 117.89$$

$$n = 118$$

3.4.3 Sampling method

This study used simple random sampling method. Simple random sampling was defined as a sampling technique where every item in the population has an even chance and likelihood of being selected in the sample. Firstly, researcher prepared a list of all the population members initially, and then each possible participants was marked with a specific number. Then, from this population, researcher chose random samples by using method of lottery. In this method, researcher gave each possible participants a number and drawed numbers from the box randomly to choose the samples (Arnab, 2017).

3.5 Instrumentation

3.5.1 Instrument

The instrument for this study used a self-administered questionnaire focusing on the nurses' knowledge, attitude and practice on eye care in critical care area. This study used Eye Care Clinical Competence in ICU (ECC) that was originally developed by (Ebadi, Saeid, Ashrafi, & Taheri-Kharameh, 2017). The tool and

permission to use were obtained from the original author. This questionnaire was previously adopted in a study by Milutinovic, Cvijanovic, Ciric, Jovanovic, & Andrijevic (2017). The instrument was divided into four sections. Firstly, Section A consisted of demographic data, these include age, gender, educational level, years of experience as a nurse, years' experience in critical care nursing, type of ICU, eye care guideline. Secondly, Section B comprised of seventeen multiple choice questions for the assessment of knowledge about eye care and iatrogenic eye conditions (causes, treatment and nursing practices) in critically ill patients. Thirdly, Section C comprised of seven items assessing attitudes towards the importance of eye care nursing procedures. Lastly, Section D comprised of ten items assessing current practices in eye care in mechanically ventilated patients.

3.5.2 Validation and reliability of instrument

According to the original authors, contents of the questionnaire has been validated. The reliability of a whole questionnaire showed good reliability. Cronbach' alpha was (0.83) for the entire questionnaire, for knowledge domain (0.78), attitudes domain (0.76) and nursing practice domain (0.86), respectively indicating satisfactory internal consistency. For this study, the content of questionnaire was validated by three panel of experts with nursing background content validation while pilot study was conducted afterward. In order to make sure the instruments reliable, the pilot study was done by researcher prior conducting the research in critical care area at HUSM. The pilot study was done with 10% of sample population which included 12 participants, then these participants was excluded as the subject of the study. The participants for pilot study were selected randomly from critical care ward at Hospital