

## Conference Paper

# Factors Associated with the Nurse Implementation towards Eye Care among Comatose Patient in Intensive Care Unit

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## Abstract

**Background:** Comatose patient's experiences decline in eye reflex. However, this issue receive less attention from the healthcare professional, particularly in the intensive care unit. Few studies exploring the associated factors of nurse implementation of eye care in intensive care unit. Theory of Planned Behavior (TPB) has been well-known as a framework to explore the behavior relation factors including nurse's background, the certainty of behavior, normative, and control beliefs factors. **Objectives:** The purpose of this study was to analyze the factors that influence nurses in the implementation of eye care towards coma patients in intensive care rooms. **Methods:** This study used cross-sectional design to the nurses who working in intensive care units. The number of samples used in this study was total sampling. A total of 104 nurses work in intensive care units participate as a sample of this study. A set questionnaire designed by the researcher was used for data collection. Data analysis was use distribution frequency, mean, SD and Chi square.

**Results:** Half of nurse (50.96%) had a favorable background, unfavorable on normative assurance and belief factors. In the background factors resulted that nurse have favorable with a value of 50.96%.

**Conclusions:** It is suggested that nurses who work in the hospital to use the information from this study to enhance their knowledge about eye care for comatose patient routinely and continuously. As for the intensive care unit, it is recommended to enforce algorithm, standard procedure, and particular supervision on the conduction of eye care for comatose patients.

**Keywords:** comatose, eye care, nurse behavior

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## 1. Introduction

The eyes are important organ but often overlooked, especially among patient with decreased consciousness or under ventilator. Previous study reported that more than 75% of patients who get strong sedative drugs have the inability of the eyelids to close completely (lagophthalmos) [1]. These patients may experience damage on the eye protection mechanism, it is possible for dehydration of the cornea, abrasion, corneal perforation, and infection. Patients in the intensive care unit are very susceptible to

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ocular surface disease or microbial keratitis (Mercieca et al., 1999). The incidence of corneal abrasion is reported in about 60% of patients, with a peak incidence between 2 and 7 days after ICU admission [2 – 4]. Prevention of interference with the eye is very important by protecting the eye with a layer that covers the surface of the eye and routinely examining the eye in patients in the ICU [5].

Collaboration on preventive measures for exposure to keratopathy or eye disorders has been done in several rooms but has not been done optimally. This is due to many factors, including the absence of an ophthalmologist who is responsible for eye health in patients in the intensive care room, the absence of an eye care algorithm in coma patients and the absence of standard eye care procedures for coma patients, even though some literature shows how important it is [4 – 9]. Theory of Planned Behavior (TPB) proposed by Ajzen and Fishbein explains the specific behavior in individuals. This theory predicts and explains human behavior in certain contexts. According to Ajzen and Fishbein, a person's attitude and personality influence a certain behavior only if it is indirectly influenced by several factors that are closely related to the behavior [10, 11]. From interviews with several nurses, it was found that the eye care measures they carried out were based on several factors, which could be built using the TPB approach. Therefore, the purpose of this study was to analyze the factors that influence nurses in the implementation of eye care measures in coma patients in intensive care rooms.

## 2. Methods

### 2.1. Study design

Design of this study was descriptive correlational with cross-sectional design to analyze factors related to eye care towards the comatose patient. The factors included: nurses background factors, behavioral belief factors, normative belief factors, and control beliefs factors.

### 2.2. Sample/participant

Population in this study was nurses who work in intensive care unit (GICU, PICU, NCCU, ICU, and HCU). Inclusion and exclusion criteria?, Total sampling was used to recruit a sample. Total of 104 nurses participated.

## 2.3. Instrument

A set questionnaire designed by the researcher was used for data collection.

## 2.4. Data analysis

To describe the characteristics of respondents, namely age, sex, level of education, and length of work were analyzed using frequency distribution. Descriptive median category statistics was used to analyze nurse background, behavioral beliefs, normative beliefs, control beliefs, and implementation of eye care in coma patients. The total score is compared with the mean, if total score  $\geq$  mean, included in the support category; total score  $<$ mean, included on not supported.

In the bivariate analysis used know the influence of nurses background, behavioral beliefs, normative beliefs, control beliefs on the implementation of eye care in a coma, tested using non-parametric statistics namely chi-square test. SPSS 21.0 software was used to analyze the data.

## 3. Results

A total of 104 respondent enrolled for data collection obtained a description of the characteristics including gender, age, education level and working years. Table 1 shown that most respondents are women; 66 (63.46%), average age of 31 – 40 years old; 64 (61.54%), have level of education in nursing vocation (Diploma III); 87 (83.65%), and have working experience for 1 – 10 years; 64 (61,54%),

From the table it can be seen that the personal factors of respondents who do not support tend to carry out eye care in coma patients well with a value of 53.2% while respondents who support tend to do less well with a value of 57.1% and the respondent information factor that is not support the eye care measures in coma patients tend to do eye care measures in patients with poor coma with a value of 50.9%, as well as respondents who support, tend to do eye care actions in coma patients less good with a value of 51%.

The table showed that the social factors: the gender of male respondents who tend not supported eye care in coma patients with a value of 52.6%, while female respondents who do not support and support eye care in coma patients have the same value, namely 50%

TABLE 1: Demographic characteristics of the respondents (n:104).

Variable		F	%
Gender	Women	66	63.46
	Man	38	36.54
	Total	104	100
Age	24 -30 years	27	25.96
	31 - 40 years	64	61.54
	41 - 50 years	9	8.65
	> 50 years	4	3.8
	Total	104	100
Level of education	Diploma III	87	83.65
	Bachelor	6	5.77
	Profession	11	10.58
	Total	104	100
Working Years	1 - 10	64	61.54
	11 - 20	32	30.77
	> 21	8	7.69

TABLE 2: Frequency Distribution of Background Factor: Personal Factors and Information Factors Influencing Nurses in the Implementation of Eye Care in Comatose Patients.

Background Factor		Poorly		Well		Total	
		f	%	f	%	f	%
Personal Factor	Does not Support	29	46,8	33	53,2	62	100
	Support	24	57,1	18	42,9	42	100
	Total	53	51	51	49	104	100
Information Factor	Does not Support	27	50,9	26	49,1	53	100
	Support	26	51	25	49	51	100
	Total	53	51	51	49	104	100

On social factors: 24-30 age group of respondents who do not support and support the eye care measures in coma patients have the same value that is 50%. In the age group 31-40 years, the majority of respondents did not support the action of eye care in coma patients with a value of 50.8%. In the 41-50 years age group, most respondents supported the eye care measures in coma patients with a value of 55.6%, and for the age group > 50 years, most respondents did not support eye care measures in coma patients with a value of 75%.

Table showing that the background factors: personal and information, respondents who not supported the eye care implementation in coma patients tend to perform eye care measures poorly with a value of 51%, and respondents who support eye care

TABLE 3: Frequency Distribution of Social Factors Influencing Nurses in the Implementation of Eye Care in Comatose Patients.

Background Factors: Social Factors		Not Supported		Supported		Total	
		f	%	f	%	f	%
Gender	Men	20	52,6	18	47,4	38	100
	Women	33	50	33	50	66	100
	Total	53	51	51	49	104	100
Age	24 -30 thn	13	50	13	50	26	100
	31 - 40 thn	33	50,8	32	49,2	65	100
	41 - 50 thn	4	44,4	5	55,6	9	100
	> 50 thn	3	75	1	25	4	100
	Total	53	51	51	49	104	100
Level of Education	Diploma	45	51,7	42	48,3	87	100
	Bachelor	3	50	3	50	6	100
	Profession	5	45,5	6	54,5	11	100
	Total	53	51	51	49	104	100

TABLE 4: Relationship between Background Factors with the Implementation of Eye Care Measures in Coma Patients.

Background Factor	Implementation				Total		p-Value
	Poorly		Well		f	%	
	f	%	f	%			
Not Supported	26	51	25	49	51	100	1,00
Supported	27	50,9	26	49,1	53	100	
Total	53	51	51	49	104	100	

actions in coma patients have the same result in performing eye care in coma patients with a value of 50.9%.

Based on a bivariable analysis using chi-square obtained p-value 1.00, which means there is no relationship between nurses' background factors: personal and information with the implementation of eye care measures in comatose patients.

TABLE 5: Relationship Between Behavioral Belief Factors with the Implementation of Eye Care Measures in Coma Patients.

Behavioral Belief Factors	Implementation				Total		p-Value
	Poorly		Well		f	%	
	f	%	f	%			
Not Supported	28	59,6	19	40,4	47	100	0,162
Supported	25	43,9	32	56,1	57	100	
Total	53	51	51	49	104	100	

Based on the table it can be seen that the behavioral belief factors of respondents who not supported the actions of eye care in comatose patients tend to be poorly in taking eye care measures in coma patients with a value of 59.6%, while respondents who support eye care implementation in coma patients tend to do eye care in patients with coma well with a value of 56.1%.

Bivariable analysis using chi-square obtained p-value 0.162, which means greater than  $\alpha$  (0.05), this indicates there is no relationship between behavioral belief factors and the implementation of eye care measures in comatose patients.

TABLE 6: Relationship between Normative Belief Factors with the Implementation of Eye Care Measures in Coma Patients.

Normative Belief Factors	Pelaksanaan Tindakan				Total		p Value
	Poorly		Well		f	%	
	f	%	f	%			
Not supported	28	49,1	29	50,9	57	100	0,829
Supported	25	53,2	22	46,8	47	100	
Total	53	51	51	49	104	100	

Based on the table, it can be seen that the normative belief factor of respondents who not supported eye care implementation in coma patients tends to do eye care actions well with a value of 50.9%, while respondents who support eye care actions in coma patients tend to be poorly in taking care actions eyes in coma patients with a value of 53.2%.

Bivariable analysis using chi-square obtained p-value 0.829, which means greater than  $\alpha$  (0.05), this indicates there is no relationship between normative factors and the implementation of eye care measures in comatose patients.

TABLE 7: Relationship Between Control Beliefs Factors with the Implementation of Eye Care Measures in Coma Patients.

Control Beliefs	Implementation				Total		p-Value
	Poorly		Well		f	%	
	f	%	f	%			
Not Supported	30	55,6	24	44,4	54	100	0,437
Supported	23	46	27	54	50	100	
Total	53	51	51	49	104	100	

Based on the table it can be seen that the control beliefs factors of respondents who do not support the eye care measures in coma patients tend to do less good eye care actions with a value of 55.6%, while respondents who support the eye care actions in

coma patients tend to be good at taking eye care actions in coma patients with a value of 54%.

Further analysis using bivariable chi-square obtained p-value 0.437, which means greater than  $\alpha$  (0.05), this indicates there is no relationship between the control beliefs factors.

## 4. Discussion

The results of the analysis of personal factors showed that nurses who not supported tend to implement eye care measures in coma patients well, whereas nurses who support implement eye care measures in coma patients poorly. Personal factors are a person's general attitude toward something, personality traits, values, emotions, and intelligence they have. A nurse should have the attitude of a nurse, namely caring and humanism, which will characterize nursing [12]. A nurse who already has an attitude as a nurse but does not yet know about something new related to the act of care is likely to carry out his actions carefully and may even be too careful to make his actions unfavorable. In theory, something has done based on sufficient knowledge, and the results will be maximal [11].

The results of behavior confidence factors found that the majority of respondents who not supported the eye care in coma patients tended to implement poorly. While those who support eye care in comatose patients tend to implement well, this can be explained by the majority of nurses have the belief that eye care is not considered important. Nurses in intensive care areas tend to prioritize actions for life-saving first. But even so, there are still nurses who believe that eye care in comatose patients is a positive thing that must be done even though it is not urgent to do. Nurses believe that treating the eyes of a coma patient has a positive impact on patients, even though they don't know yet with what tools, how to care for the coma patients' eyes [13].

The third factor is normative belief with the results of the analysis that respondents who not supported tend to implement eye care well, while those who support eye care measures in coma patients tend to carry out their actions poorly. Normative beliefs are beliefs that are directly related to environmental influences [14]. Very rational if the environment does not support the implementation of an action. The possibility of this can happen because the eye care in comatose patients can be said something new. The absence of someone (significant others) who can provide examples of new ways to treat the eyes of comatose patients can make a nurse's normative beliefs less. Likewise, with the algorithms and standard procedures that do not yet exist about eye care for

comatose patients[14]. The presence of an ophthalmologist who has full authority on eye health can also make nurses' normative beliefs less.

The last factor is control beliefs, and the analysis shows that nurses who not supported eye care in coma patients tend to perform actions poorly, while nurses who support eye care tend to be good in implementing eye care [15]. Eyecare in coma patients was still considered a new thing by most nurses in intensive care. The experience of treating coma patients did not make most nurses find out how the latest way to treat comatose patients' eyes, facility factors and time to perform these actions could be an estimate of the magnitude of confidence that the action could be carried out or could not be carried out.

The analysis showed that there was no relationship between background factors and the implementation of eye care in comatose patients, with a *p-value* of 1.00. The Planned Behavior Theory states that background factors are traits that are present in a person. Nurses are human beings who have properties that can be contrary to nature that should exist in a nurse[16 - 18].

Background factors consisting of personal, social, and information. Personal factors are a person's general attitude toward something, personality traits (personality traits), life values (values), emotions, and intelligence they have. Social factors consist of age, gender, ethnicity, education, income, and religion. The information factor consists of experience, knowledge, and exposure to the media. These three background factors should be able to influence a nurse in carrying out eye care measures in comatose patients. In psychology, the nature of an individual is proven to determine a person's behavior. That difference can come from differences in cognitive abilities, personality traits, and values that are adhered to. This uniqueness is what causes personality to become a variable that is often used to describe the individual with other individuals.

The analysis showed that there was no relationship between behavioral beliefs and the implementation of eye care in comatose patients, with a *p-value* of 0.162. There is something interesting from the results of this factor analysis even though the results are not related, that is the relationship between nurses who have behavioral beliefs that not supported tend to carry out eye care actions in coma patients even though it is not good, conversely nurses who have beliefs in supportive behavior tend to implement eye care measures properly.

Possible factors that can be used as a reason is that the beliefs of nurses' behaviors in taking eye care actions in comatose patients can be said to have tended to do because they are positive and have a positive impact on patients. Even though in reality, there



are nurses who do not do eye treatment in comatose patients, but the intention to do it is only a limiting factor that becomes an obstacle.

The analysis showed that there was no relationship between normative beliefs and the implementation of eye care in comatose patients, with a *p-value* of 0.829. Planned behavior theory explains about the attitude of a person who has an influence on the intention to behave associated with subjective norms. Subjective norms are also assumed as a function of beliefs that specifically someone becomes agree or disagree to a behavior. Trusts included in subjective norms are also called normative beliefs.

The analysis shows that there is no relationship between the belief that a behavior can be implemented (control beliefs) with the implementation of eye care in comatose patients, with a *p-value* of 0.437.

According to the theory of planned behavior, people tend not to form a strong intention to display a certain behavior if he believes that he has no source or opportunity to do so even though he has a positive attitude and he believes that other people who are important to him will approve it.

It is possible to be the reason why there is no relationship of this factor is that there is no experience in the implementation of eye care of coma patients, so that nurse waits for others to do it first. Limitations of tools and time and ignorance of nurses also become the reasons why there is no relationship between the factors of control beliefs with the implementation of eye care in comatose patients.

## 5. Conclusion

Factors that influence nurses in the implementation of eye care in comatose patients are nurses background factors, behavioral belief factors, normative belief factors, and belief factors. Then there is no relationship between nurse background factors, behavioral belief factors, normative belief factors, and belief factors that a behavior can be implemented (control beliefs) in the implementation of eye care in comatose patients.

## References

- [1] Mercieca, F., Suresh, P., Morton, a, & Tullo, a. (1999). Ocular surface disease in intensive care unit patients. *Eye (London, England)*, 13 (Pt 2), 231-6. doi:10.1038/eye.1999.57
- [2] Hernandez, E. V., & Mannis, M. J. (1997). Superficial keratopathy in intensive care unit patients. *American journal of ophthalmology*, 124(2), 212-6. Retrieved from <http://>

- [//www.ncbi.nlm.nih.gov/pubmed/9262545](http://www.ncbi.nlm.nih.gov/pubmed/9262545)
- [3] Imanaka, H., Taenaka, N., Nakamura, J., Aoyama, K., & Hosotani, H. (1997). Ocular Surface Disorders. *anesthesi and analgesia*, 85, 343-346.
- [4] Lenart, S. B., & Garrity, J. A. (2000). Eye care for patients receiving neuromuscular blocking agents or propofol during mechanical ventilation. *American journal of critical care: an official publication, American Association of Critical-Care Nurses*, 9(3), 188-91. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/10800604>
- [5] Ramírez, F., Ibarra, S., Varon, J., & Tang, R. (2008). The Neglected Eye: Ophthalmological Issues in the Intensive Care Unit. *Critical Care*, 11(3), 72 - 82.
- [6] Dawson, D. (2005). Development of a new eye care guideline for critically ill patients. *Intensive critical care nursing the official journal of the British Association of Critical Care Nurses*, 21(2), 119-122. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/15778076>
- [7] Douglas, L., & Berry, S. (2011). Developing clinical guidelines in eye care for intensive care units. *Nursing children and young people*, 23(5), 14-20. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/21910398>
- [8] John, G., Raju, R., Sivasankar, S., Jasper, S., Simon, S., & Jacob, P. (2006). Eye care in ICU. *Indian Journal of Critical Care Medicine*, 10(1), 11. doi:10.4103/0972-5229.24683
- [9] Suresh, P., Mercieca, F., Morton, a, & Tullo, a B. (2000). Eye care for the critically ill. *Intensive care medicine*, 26(2), 162-6. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/10784303>
- [10] Ajzen Icek (1991). The Theory of Planned Behavior. *Organizational Behaviour and human Decision Processes* 50, 179-211 (1991). Retrieved April 19, 2012, from <http://courses.umass.edu/psyc661/pdf/tpb.obhdp.pdf>
- [11] Ajzen, I. (2006). Constructing a TpB Questionnaire: Conceptual and Methodological Considerations. *Time*, 2002.
- [12] Armitage, C. J., & Conner, M. (2001). E Y cacy of the Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*, 471-499.
- [13] Calvin S Hall, Gadner Lindzey. (2005) Psikologi Kepribadian 1-3, alih bahasa Supratiknya, Penerbit Kanisius : Yogyakarta
- [14] Cortese, D., Capp, L., & McKinley, S. (1995). Moisture chamber versus lubrication for the prevention of corneal epithelial breakdown. *American journal of critical care: an official publication, American Association of Critical-Care Nurses*, 4(6), 425-8. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/8556082>
- [15] Danio, Agoes. (2003). Psikologi Perkembangan Dewasa Muda, PT Gramedia Widiasarana, Indonesia : Jakarta

- [16] Ko, N.-Y., Feng, M.-C., Chiu, D.-Y., Wu, M.-H., Feng, J.-Y., & Pan, S.-M. (2004b). Applying theory of planned behavior to predict nurses' intention and volunteering to care for SARS patients in southern Taiwan. *The Kaohsiung journal of medical sciences*, 20(8), 389-98. doi:10.1016/S1607-551X(09)70175-5
- [17] Kingdom, U. (2005). The Importance of Affective Beliefs and Attitudes in the Theory of Planned Behavior: Predicting Intention to Increase Physical Activity 1, 1824-1848.
- [18] Yoo, J. (2009). The Theory of Planned Behavior and the Transtheoretical Model in Exercise Contexts: Korean Studies. *International Journal*, 21(2), 35-47.