BRIEF REPORT

The Importance of Nursing Care for Patients with Delirium

Harumi Ejiri [1], *Shoko Yamada* [2]

[1] *Department of Nursing College of Life and Health Sciences Chubu University, Aichi, Japan*

[2] *Graduate School Department of Interdisciplinary Research, University of Yamanashi, Yamanashi, Japan*

Abstract   Purpose : The purpose of this study was to clarify the nurses' recognition of the importance of care for patients with delirium.

Methods : The subjects of this study were nurses who were taking care of patients with delirium in the hospital. The patients were adults or elderly with delirium caused by physical factor, with a temporary reduction in cognitive function. Nurses were asked to describe what was important when they took care of patients with delirium. The data were analyzed using the IBM SPSS Text Analytics for Survey （TAfS） software.

Results : The most frequently used keywords were "falling on the ground/ floor or from a bed". The thirty seven categories were classified and were divided into six domains as follow : 【Securing safety through accident prevention】, 【Careful dealing while respecting the patient's personality】, 【Early start of assessment to prevent aggravation】, 【Assessment of delirium】, 【Ensuring well-being】, and 【Team actions】.

Conclusions : Thirty seven categories were classified into six domains. This study has revealed that nurses recognized safety and human rights as important particularly for patients with delirium.

   Key word : delirium, patients, Nursing

1. Background

The incidence of delirium among patients staying in intensive care units, critical care units, or general wards is reported to be 66%-84%[1]. Thus, nurses can be expected to encounter delirium frequently during their clinical practice. Delirium is characterized by a change in cognitive function accompanied by disturbances in attention and consciousness level as well as sleep arousal disorders. It can be caused by various physical factors, occur in a short period of time, and can vary over time. It can be divided into either an active type, a low-activity type, and or a mixed type[1-3]. Patients with delirium may experience visual hallucinations and may become violent or may attempt to remove tubes, drip infusion sets, or other items needed for their treatment. This can make treatment and nursing care difficult. They may also exhibit reduced reactions to surrounding circumstances, occasionally displaying a reduction in voluntary activity or developing other symptoms arising from prolonged periods of remaining in bed[1, 3, 4].

Because of the various symptoms associated with delirium, patients have a high frequency of untoward incidents[5]. Whenever an incident occurs, the nurse on duty must deal with the case, report the event, and so on. Nurses are often concerned with preventing patient accidents （particularly events caused by the removal of

important tubes) and physical injuries caused by falls from a standing position or from a certain height. A previous study has demonstrated that in order to prevent such events, nurses tend to take measures to suppress the mobility of patients with delirium or may use indelicate speech or actions[6]. These circumstances have led to a call for the establishment of a delirium care system or a set of guidelines for the care of patients with postoperative delirium[5,7]. In other words, nurses presently feel that caring for patients with delirium is difficult and are thus seeking guidelines to provide effective nursing care for such patients.

Some reports concerning studies aimed at preparing a delirium care system or delivery care guidelines as well as studies on preventing delirium or the factors involved in the onset of delirium have been published[5,7]. In addition, studies examining nurses' decisions or their ability to assess delirium have also been conducted. To date, however, the factors viewed by nurses as being the most important when dealing with patients with delirium have not been identified.

Under such circumstances, the present study investigated which factors are viewed by nurses who are working in hospitals as the most important, particularly when dealing with patients with delirium. The purpose of this study was to clarify the nurses' recognition of important care for patients with delirium. The contents and trend of the items considered important by hospital nurses dealing with patients with delirium, in turn, would be helpful for identifying future issues.

2. Methods

The subjects of this study were nurses or assistant nurses (hereafter referred to as "nurses") employed at hospitals located in a single prefecture of Japan. All the nurses worked in hospital wards with 30 or more ordinary care beds and were required to provide nursing care to patients with delirium. Nurses who worked in the Department of Psychiatry, the Department of Pediatrics, or in the operating room were excluded. The investigation was performed using an anonymous, free-writing questionnaire to allow nurses to offer opinions and comments. These were delivered and collected by regular mail. The investigation period was from November 2008 to March 2009.

The questionnaire consisted of 4 parts : basic demographics, awareness of delirium symptoms, dealing with patients with delirium, and aspects viewed as being important. The nurses' responses to the questions regarding awareness of delirium symptoms and dealing with patients with delirium have been previously reported[6,8]. For the question regarding aspects viewed as being important when dealing with patients with delirium, the nurses were asked to provide a written answer. This question was worded as follows : "Please tell us what you consider to be important when dealing with patients who have developed delirium" ?

1) Analytical methods

The written responses to the question regarding aspects viewed as being important when dealing with patients with delirium were analyzed using the IBM SPSS Text Analytics for Survey (TAfS) software, which was used to code and visualize responses objectively. The TAfS software was used as follows : (1) the written answers were converted into data, (2) any term that could be viewed as synonyms were replaced with a single representative word, (3) major keywords were extracted (any word used multiple times by the same responder was only counted once, but if a given phrase contained multiple keywords, each keyword was counted), and (4) keywords frequently appearing 5 or more times were categorized. Finally, the categories were manually classified into domains through consultations with the reserchers.

2) Ethical considerations

This study was performed after receiving approval from the Chubu University Ethics Committee. Each respondent was informed in writing of the anonymity and voluntary nature of the questionnaire as well as the data management protocol. The return of a completed questionnaire was deemed as constituting consent to participate.

3. Results

1）Demographics of respondents

The questionnaire was delivered to 3,755 nurses working at 60 facilities that consented to participate in this study （200 facilities were contacted）. Responses were received from 1,904 nurses （response rate：50.7%）. Valid responses from 1,300 nurses who had provided written answers to the question regarding important aspects of dealing with patients with delirium were analyzed. Table 1 summarizes the demographics of the respondents. The mean age was 33.6±8.6 years, and the mean nursing career duration was 11.4±8.3 years.

2）Keywords

The written answers were analyzed for 1,300 records from 1,300 nurses （answer from 1 nurse＝1 record）. In this report, the keywords are enclosed in quotation marks and the frequency of each keyword was shown in parentheses. The most frequently used keywords were "falling on the ground/floor or from a bed" （195）, "denial" （156）, "tubes" （144）, "listening" （121）, "family" （105）, "excitation" （98）, "self-removal" （91）, "story" （87）, "safety" （86）, "restrict" （81）, "accident prevention" （70）, and "listening to" （66） （Table 2）.

Table 1. Nurses' characteristics

		Number	%
			n＝1,300
Gender	Male	54	4.15
	Female	1243	95.6
	Unknown	3	0.2
Age（mean±SD）	33.6±8.6		
Nursing Experience （Years）	<1	23	1.76
	1～4	286	22
	5～9	342	26.3
	10～14	256	19.7
	15～19	151	11.6
	20～24	120	9.2
	25～29	71	5.5
	>29	48	3.7
	Unknown	3	0.2
License	Registered nurse	1225	94.2
	Assistant nurse	58	4.5
	Others （pubric health nurse）	17	1
Nursing education	Assistant nurse program	59	4.5
	Nursing school （diproma program）	991	76.2
	Junior college	120	9.2
	University/college	85	6.5
	Tele-education	27	2.1
	Others	18	1.4
Position	Head Nurse	67	5.2
	Manager, chief	124	9.5
	Staff	1105	85
	Others	4	0.3
The area of work	Mixed	308	23.7
	Medical	252	19.4
	ICU/ UUC/HCU	183	14.7
	Surgery	163	12.5
	Orthopedic surgery	109	8.4
	Neurosurgery, Cranial nerve	36	2.8
	Cardiovascular	25	1.9
	Geriatric	25	1.9
	Others	199	15.3

Table 2. Keyword high rank 40 appeared frequently

rank	key words	number	rank	key words	number
1	falling on the ground/floor or from a bed	195	21	observation	44
2	denial	156	22	voice	42
3	tubes	144	23	stimulation	39
4	listening	121	24	cause	37
5	family	105	25	slowly	33
6	excitation	98	26	daytime	32
7	self-removal	91	27	environment	32
8	story	87	28	cooperation	28
9	safety	86	29	danger action	27
10	restrict	81	30	get angry	24
11	accident prevention	70	31	respect	24
12	listening to	66	32	earlier	23
13	complaint	64	33	risk prevention	21
14	visiting room	62	34	daily living schedule	21
15	risk	57	35	careful	20
16	explanation	54	36	Auditory/visual hallucinations	19
17	many times	53	37	reason	19
18	calming oneself down	51	38	tone of speech	19
19	manner of speech	47	39	patient's side	19
20	expressions	46	40	feeling assured	17

3）Keyword categories and domains

The responses contained in 1,147 records were classified into 37 categories. These categories were then divided according to their contents into 6 domains (indicated by square brackets) as follows: [Securing safety through accident prevention], [Careful dealing while respecting the patient's personality], [Early start of assessment to prevent aggravation], [Assessment of delirium], [Ensuring well-being] and [Team actions] (Table 3). Each domains were described in detail as following.

[Securing safety through accident prevention]

This domain consisted of the following categories: a) accident prevention, b) securing safety, c) gaining family's cooperation through explanation, d) considering restrict, e) keeping the patient in the visual field, and f) watching the patient. The major keywords used in these categories appeared in 781 records.

a) Accident prevention included keywords such as "falling on the ground/floor or from a bed", "tubes", and "self-removal". Keywords related to accident prevention appeared in 262 records (20.2%) describing important aspects of nursing care for patients with delirium. Examples of "falling on the ground/floor or from a bed" were *falling on the ground/floor*, *falling from a bed*, *risk of falling on the ground/floor*. An example of describing "tubes" was *taking care to prevent removal of drip infusion sets/tubes*. An example of "self-removal" was *watching for self-removal of drip infusion sets*.

b) Securing safety included keywords such as "safety", "risk", and "risk prevention". Keywords related to securing safety appeared in 246 records (18.6%). An example of "safety" was *safety awareness*. An example of "risk" was *predicting risk and devising countermeasures*. An example of "risk prevention" was *paying close attention to risk prevention*.

c) Gaining family's cooperation through explanation consisted of the keywords "family" and "attending the patient". An example of "family" was *arranging visits from family members*. An example of "attending the patient" was *arranging attendance when needed*.

d) Considering restrict consisted of the keywords "restrict" and "safety belt". An example of "restrict" was *minimizing physical restrict*. An example of "safety

belt" was *arranging lines to make the use of a safety belt unnecessary*.

e) Keeping the patient in the visual field consisted of the keywords "nurse station" and "wheelchair". An example of "nurse station" was *allowing the patient to spend time at the nurse station*. An example of "wheelchair" was *remaining by the side of a patient using a wheelchair*.

[Careful dealing while respecting the patient's personality]

This domain consisted of the following categories: a) listening, b) sympathetic and accepting stance, c) speaking manner, d) respect of personality, e) voice, f) tone of speech, g) careful dealing, h) communication, and i) maintaining eye contact. The major keywords used in these categories appeared in 711 records.

a) Listening consisted of the keywords "listening", "story", and "listening to". Keywords related to Listening appeared in 231 records (17.7%). An example of "listening" was *listening to feelings and thoughts*. An example of "listening to" was *listening to the patient first*.

b) Sympathetic and accepting stance included keywords such as "denial", "auditory/visual hallucinations" and "acceptance". Keywords related to sympathetic and accepting stance appeared in 192 records (14.8%). An example of "denial" was *avoiding strong denial of patient's speech/behavior*. An example of "auditory/visual hallucinations" was *acceptance of the speech of patients having auditory/visual hallucinations*. An example of "acceptance" was *accepting the patient as he/she is*.

c) Speaking manner consisted of the keywords "manner of speech" and "expressions". An example of "manner of speech" was *the manner of speaking to the patient*. An example of "expressions" was *being careful with expressions*.

d) Respect of personality included keywords such as "respect", "human", and "dignity". Examples included *respecting the patient*, *dealing with the patient as an elderly human*, and *respecting the patient's dignity*.

e) Voice consisted of the keywords "voice" and "low". Examples included *adjusting voice level depending on the situation* and *avoid raising voice*, *speaking slowly in a low voice*.

Table 3. Major keywords and category in each domain

Domain	Category (frequency in records*)	Major keywords
Securing safety through accident prevention	Accident prevention (262)	Falling on the ground/floor or from a bed
		Tubes
		Self-removal
		Accident prevention
	Securing safety (246)	Safety
		Risk
		Risk prevention
		Securing safety
	Gaining family's cooperation through explanation (112)	Family
		Attending the patient
	Considering restrict (86)	Restrict
		Safety belt
	Keeping the patient in the visual field (43)	Nurse station
		Wheelchair
	Watching the patient (32)	Patient's side
		Watching
Careful dealing while respecting the patient's personality	Listening (231)	Listening
		Story
		Listening to
	Sympathetic and accepting stance (192)	Denial
		Auditory/visual hallucinations
		Acceptance
		Accepting
	Speaking manner (98)	Manner of speech
		Expressions
	Respect of personality (57)	Respect
		Human
		Dignity
		Personality
	Voice (52)	Voice
		Low
	Tone of speech (33)	Tone of speech
		Strong
	Careful dealing (25)	Careful
		Sufficiently
	Communication (16)	Conversation
		Communication
	Maintaining eye contact (7)	Eye contact
Early start of assessment to prevent aggravation	Calming oneself down (139)	Calming down
		Slowly
		Gently
		Staying calm
	Avoiding stimulation (132)	Excitation
		Stimulation
	Awareness of current status (77)	Explanation
		Repetition
	Daily living schedule (62)	Daytime
		Daily living schedule
	Environment (32)	Environment
	Early measures (32)	Earlier
		Early stage
	Use of medication (27)	Medication
		Hypnotic
	Sleep rhythm (24)	Reversed daytime/night cycle
		Sleep
	Prevention of aggravation (16)	Promotion
		Aggravation
	Avoiding force (9)	Forcing
	Postoperative (8)	Postoperative
Assessment of delirium	Observation (108)	Visiting room
		Observation
	Exploring factors (46)	Cause
		Reason
	Assessment (27)	Judgment
		Change
		Assessment
	Prediction (11)	Prediction
		Possibility
Ensuring well-being	Anxiety reduction (19)	Anxiety
		Reduction
	Feeling assured (17)	Feeling assured
	Pain relief (7)	Pain
	Feeling ease (5)	Ease
	Stress reduction (5)	Stress
Team actions	Consulting a doctor/staff (18)	Doctor
		Consideration
	Information sharing (17)	Staff
		Information

*multiple responses

［Early start of assessment to prevent aggravation］

This domain included the categories a）calming one-self down, b）avoiding stimulation, c）awareness of current status, d）daily living schedule, e）environment, f）early measures, and g）use of medication. The major keywords used in these categories appeared in 558 records.

a）Calming oneself down included keywords such as "calming down", "slowly", and "gently". An example of "calming down" was *first calming oneself down*. An example of "slowly" was *dealing with the patient slowly*. An example of "gently" was *touching the patient gently*.

b）Avoiding stimulation consisted of the keywords "excitation" and "stimulation". Examples were *avoid exciting the patient* and *avoid stimulation*.

c）Awareness of current status consisted of the keywords "explanation" and "repetition". Examples were *slowly explaining the patient's current status* and *repeatedly telling the patient the time and their location*.

d）Daily living schedule consisted of the keywords "daytime" and "daily living schedule". Examples were *helping the patient to stay awake during the daytime as much as possible* and *helping the patient to follow a daily living schedule*.

e）Environment consisted of the keyword "environment". An example was *bed height and surrounding environment*.

f）Early measures consisted of the keywords "earlier" and "early stage". Examples were *early transfer to ordinary wards* and *early use of medication*.

［Assessment of delirium］

This domain included the categories a）observation, b）exploring factors, and c）assessment. The major keywords used in these categories appeared in 192 records.

a）Observation consisted of the keywords "visiting room" and "observation". Examples were *increase the frequency of room visits* and *close observations*.

b）Exploring factors consisted of keywords such as "cause" and "reason". Examples were *identify the cause of delirium* and *consider the reason for delirium*.

c）Assessment included the keywords "judgment" and "assessment". Examples were *judging whether or not the patient really has delirium* and *assessing the possibility*

that the patient has developed delirium.

［Ensuring well-being］

This domain included the categories a）anxiety reduction, b）feeling assured, and c）pain relief. The major keywords used in these categories appeared in 53 records.

a）Anxiety reduction consisted of the keywords "anxiety" and "reduction". Examples were *ease anxiety* and *talking to the patient to reduce anxiety*.

b）Feeling assured consisted of the keyword "feeling assured". An example was *dealing with the patient in a manner promoting feelings of assurance*.

c）Pain relief consisted of the keyword "pain". An example was *checking for pain in patients with delirium*.

［Team actions］

This domain consisted of the categories a）consulting a doctor/staff and b）information sharing. The major keywords used in these categories appeared in 35 records.

a）Consulting a doctor/staff consisted of the keywords "doctor" and "consideration". Examples were *arranging a doctor consultation* and *considering appropriate way of dealing with the patient*.

b）Information sharing consisted of the keywords "staff" and "information". Examples were *inform surrounding staff of the patient's condition* and *provide information to surrounding people, asking for cooperation*.

4. Discussion

In this study, the nurses' written answers were first analyzed quantitatively. The most frequently used keywords indicate the factors that are considered to be important by the majority of nurses. Keywords related to the prevention of accidents or securing safety, such as "falling on the ground/floor or from a height", "tubes", and "self-removal" were ranked highly in terms of frequency of use. Next to these keywords were words describing the importance of listening to the patient or adopting a sympathetic stance were. These results indicate that in clinical situations, nurses attach primary importance to matters related to accident prevention and securing safety, followed by maintenance of the

dignity of patients with delirium whose consciousness level is decreased.

The factors viewed as important by nurses when dealing with patients with delirium were ranked as follows, in descending order of the number of the records : ［securing safety through accident prevention］,［careful dealing while respecting the patient's personality］, ［early start of assessment to prevent aggravation］, ［assessment of delirium］, ［ensuring well-being］ and ［team actions］.

Regarding ［securing safety through accident prevention］, the keywords contained in this domain were used by more than half of the respondents, indicating that nurses working in general hospitals attach particular importance to preventing accidents and securing the safety of patients with delirium. A similar finding was also reported in a study by Nakamura concerning delirium in elderly patients with dementia[9]. In another study by Sasaki et al., the care given to postoperative patients with delirium was most frequently intended to prevent incidents[5], consistent with the findings of the present study.

The results of the present study and the previous studies mentioned above suggest that nurses caring for patients with delirium attach the most important care practice to preventing incidents. The removal of tubes, falling on the ground/floor, and so on can seriously affect the patient's outcome. If treatment does not proceed smoothly or if the patient's condition does not improve as expected, a longer hospital stay will be required. In addition, the nurse in charge of such patients may be blamed. Thus, nurses likely attach importance not only to securing the safety of patients, but also to preventing accidents in patients with delirium to protect their own liability.

In the present study, the nurses often reported making efforts to prevent accidents and to secure patient safety by establishing a system to keep the patients within their visual field and occasionally seeking the cooperation of family members or the use of measures to suppress the mobility of patients. However, some reports have indicated that the self-removal of tracheal tubes by patients cannot be completely prevented even

when measures to suppress patient mobility are used[10, 11], and the anxiety of patients can be reinforced by restricting their mobility[12]. Allowing patients to spend time at the nursing station involves some ethical problems, although such strategies do enable the patient to be kept in the nurses' visual field. In view of such problems, the sufficient allocation of manpower, which would resolve both the issue of patient safety and the ethical problems, should be considered. As a patient's circumstances change, ongoing review is important to determine whether the various devices and tubes required to treat the patient（e.g., drip infusion sets）are actually needed and whether instructions to remain quiet are really appropriate.

Concerning ［careful dealing while respecting the patient's personality］, more than half of the nurses also used keywords included in this domain, indicating that nurses attach importance to the patient's personality and dignity, in addition to the need to prevent accidents and secure safety. To respect the patient's personality and dignity even if his/her consciousness level is decreased by delirium, nurses felt that they should listen to the patients patiently and make an effort to communicate with the patient, taking adequate care to use the appropriate voice, tone, and style of speech.

In a preceding study conducted by researchers, the restrict of patient mobility and the use of indelicate expressions were cited as examples of inappropriate means of dealing with patients with delirium[6]. These results suggest that while nurses attach importance to manners of speech and behavior in clinical situations, their speech and/or behavior might sometimes be regarded as inappropriate when dealing with patients with delirium.

The actions taken by nurses to secure safety or to prevent accidents can also potentially threaten the human rights of patients or can cause ethical problems. A conference or similar meeting may be beneficial for reviewing whether the human rights of patients are actually being respected, based on medical literature concerning the topic and so on[13].

The ［early start of assessment to prevent aggravation］ domain had a relatively large number of keyword hits,

second only to the above-mentioned domains. This result suggests that nurses attempted to avoid stimulating patients with delirium by first calming themselves down and that they attempted to prevent the aggravation of delirium by promoting daytime activities and adjustments to a regular daily living and sleep pattern. Concerning the sleep of patients with delirium, a study by Saito et al. revealed a tendency for a reversed daytime/night cycle in patients with delirium staying in critical care units, pointing to the importance of care based on an understanding of the circadian rhythm[14]. Although objective evaluations of sleep quality are difficult, their study suggested the necessity of ensuring sufficient sleep at night by means of arranging an environment that promotes nocturnal sleep and using medication as needed.

In the present study, nurses took care to avoid aggravating the conditions of the patients by using medications. Since delirium involves changes in cognitive function arising from physical factors, such conditions are difficult for nurses alone to treat. For this reason, it is reasonable to use appropriate medication with the cooperation of doctors. However, excessive sedation leads to pharmacological immobilization. Thus, it is important for nurses to be able to assess patients using a valid tool for delirium.

The number of keyword hits for the [assessment of delirium] domain was the fourth largest. In this study, nurses judged and predicted the situations based on frequent and close observations of patients and conducted assessments including explorations of the factors involved in delirium. Based on such assessments, nurses seemed to gain awareness of a patient's delirium and to practice the nursing activities included in the other domains. For this reason, it is no exaggeration to say that this kind of assessment is an essential element of nursing care for patients with delirium. However, the capability of performing assessments varies among individual nurses, and scales for delirium assessment, etc., are not being used sufficiently in intensive care units or surgical wards, and a tendency for nurses practicing such assessments to feel overloaded with work cannot be denied[5].

In a previous study conducted by researchers, nurses viewed active-type delirium as delirium but had difficulty recognizing low activity-type delirium as delirium[8]. Thus, as also pointed out by Sasaki et al., the correct assessment of delirium using simple assessment tools and scales with a lower burden on nurses is needed.

The number of keyword hits for the domain [ensuring well-being] was fifth largest. Nurses attempted to ensure the well-being of patients with delirium by alleviating their anxiety, pain, and stress and guiding them to feel assured and at ease. Nurses might not attach a large degree of importance to this domain. In a study by Yamada, the sedation level of postoperative patients with delirium was shown to be associated with the severity of pain[15]. Pain relief in patients with delirium is thus considered to help prevent the aggravation of delirium, and further importance should be attached to the relief of various types of pain in patients with delirium in the future.

According to a survey of domestic intensive care units, overall evaluations performed by nurses were primarily conducted for analgesia, and the Verbal Rating Scale (VRS), Behavioral Pain Scale (BPS), etc., were additionally used[16]. However, no analgesic evaluations were performed at 20% of all the facilities that were investigated[16]. Although the status of analgesia evaluations in ordinary wards is unknown, this finding for intensive care units indicates the need to consider the representative types of pain seen in patients with delirium sufficiently.

The number of keyword hits for the [team actions] domain was smaller than that for any other domain in this study. Nurses attempted to deal with patients with delirium through team actions consisting of consultations with doctors and other staff members, information sharing, and so on. In a study by Sasaki et al., nurses working in intensive care units or surgical wards were shown to experience difficulties because of differences in awareness of delirium among individual staff members and the lack of sufficient communication pathways with doctors[5]. Another report has indicated a low awareness of delirium among doctors[17]. These findings indicate that not only nurses, but also doctors should

intensify their support of patients with delirium. In the future, the active performance of assessments by care teams using the above-mentioned assessment tools and scales will be important.

The subjects of this study were nurses working in ordinary wards for adult patients, including intensive and critical care units, but the nurses were not confined to a particular unit. For this reason, the present study revealed an overall picture of which factors nurses view as being important when dealing with patients with delirium. In the future, a similar study taking into account the features of individual departments/units, the duration of nursing careers, and so on would be useful.

5. Conclusions

The factors viewed as being important by nurses when dealing with patients with delirium can be classified into the following domains in descending order of importance : [securing safety through accident prevention], [careful dealing while respecting the patient's personality], [early start of assessment to prevent aggravation], [assessment of delirium], [ensuring well-being], and [team actions]. This study has revealed that nurses recognized safety and human rights as important particularly for patients with delirium.

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