Unrecognized Delirium is Prevalent among Older Patients Admitted to General Medical Wards and Lead to Higher Mortality Rate

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Objective: *Delirium is a syndrome associated with high mortality that often goes undetected by healthcare providers. There has been limited evidence regarding the consequences of under-recognition of delirium on patient outcomes. The present study aimed to investigate the rate of under-recognized delirium and explore the effect of unrecognized delirium on patient mortality.*

Material and Method: *A cohort of older patients aged 70 years or more who developed delirium during admittance to general medical wards at Siriraj Hospital between January and March 2009 was retrospectively investigated. A diagnosis of delirium was made by geriatricians applying DSM-IV criteria. Medical records were reviewed to identify recognition of delirium by physicians and nurses. Factors affecting mortality were investigated using univariate and multivariate logistic regression models.*

Results: *Of 110 patients who developed delirium, 57.3% of cases were identified as delirium by physicians, with only 14.5% of cases having their delirium documented in the discharge summary. Rate of delirium recognition among nurses was 61.8%, with a comprehensive nursing care plan developed in only 13.6% of cases. Patients with delirium that went unrecognized by attending physicians had a mortality rate of 38.3%, compared to 15.9% for the recognized delirium group ($p = 0.008$). In multivariate analysis, unrecognized delirium was identified as an independent risk factor for death with adjusted OR of 5.16 (95% CI 1.45-18.29).*

Conclusion: *Rate of unrecognized delirium by healthcare providers in this study was high, but comparable to previous studies. Moreover, under-recognition of delirium was found to lead to higher mortality. Routine screening for delirium and implementation of a proactive care plan by nurses for older patients admitted to general medical wards might be a strategy for improving this common and preventable medical condition and for lowering delirium-related mortality rates.*

Keywords: *Delirium, Older patients, Unrecognized, Nursing care, Mortality rate*

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Delirium, an acute disturbance in attention and cognition, is a medical condition that is generally and easily treatable, potentially preventable, and commonly found in older people[1]. Prevalence of delirium in patients admitted in the hospital varies widely, ranging from 7 to 60%[2-6]. It has been consistently shown that delirium is associated with increased mortality across all non-surgical patients. Delirium has also been associated with the following patient populations: general and geriatric medicine wards; ICU, stoke, and dementia units; nursing homes; and emergency departments[1]. A recent meta-analysis affirmed that delirium in older patients is associated with an increased risk of death, institutionalization, and dementia, independent of age, sex, comorbid illness or illness severity, and presence of dementia at baseline[7].

Several international clinical practice guidelines[8,9], including a recently released guideline[10], have recommended regular screening for delirium symptoms among older inpatients in order to achieve higher quality care and improve patient outcomes[11]. However, symptoms of delirium continue to go unrecognized by healthcare personnel[1,12], despite the existence of long-established delirium guidelines[13]. This lack of adequate recognition of delirium may be due to diagnostic difficulties associated with challenging and non-specific manifestations, including the

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fluctuating nature of delirium and its similarity to dementia and depression. Other reasons include inadequate awareness by clinicians, failure to consider the importance of delirium diagnosis, and under appreciation of its clinical consequences[1].

Accurate and timely recognition of delirium also facilitates the development of an appropriate care plan for delirium patients. Identification of precipitating factors is a crucial step in the diagnosis and management of delirium. From a nursing perspective, the evidence suggests the beneficial effect of nursing care, which leads to better outcomes in patients with delirium[14]. Standard best practice for nursing care has also outlined domains to be addressed for the care of patients with delirium[15].

Prevalence of delirium among older hospitalized patients in Thailand was found to be high[16,17], similar to prevalence rates reported from other countries. A previous study that used a different methodology[18] found a much lower prevalence of delirium. Under-recognition of delirium may explain the lower prevalence reported in that study. Studies in the under-recognition of delirium in clinical settings in Thailand have been limited. Moreover, no studies have been conducted that investigate the quality of nursing care among older patients with delirium in Thailand.

The objective of this study was to determine the rate of recognition and development of appropriate management plan in delirium patients among physicians and nurses in general medical wards and explore the effect of unrecognized delirium on patient mortality.

Material and Method

This study evaluated the quality of diagnosis and care among a cohort of older patients suffering from delirium who were admitted to general medical wards in a university-based tertiary referral center in Thailand. The occurrence rate of delirium and clinical outcome were reported in previous study[16]. In brief, consecutive patients aged 70 years or more who were admitted to general medical wards at Siriraj Hospital due to acute medical conditions between January and March 2009 were evaluated prospectively on a daily basis for detection of delirium by researchers. A diagnosis of delirium was made by geriatricians applying DSM-IV criteria. Two hundred twenty five older patients (older than 70 years of age) who received care during the study period were assessed. Of the 225 patients, 110 developed delirium during hospitalization. The rating for illness severity was performed by geriatricians during the first assessment using a 9-point ordinal scale[19]. Patient score was determined according to physician judgment, with a higher score indicating higher severity. Illness score in this study was further classified into a severe illness classification for patients receiving a score of 7 or more. Dementia was diagnosed when patients scored higher than 3.42 on Modified IQCODE[20] or preexisting diagnosis was established. Patient medical history interview was conducted at admission and all patients were followed-up until discharge or death.

The present study was conducted after the primary study was completed. All medical records of delirium patients were reviewed to identify detection of delirium by treating physicians and nurses. Delirium recognition by physicians was defined as presence of any documentation in the medical record demonstrating awareness of delirium, including progress note entries describing delirium or confusion, notes attempting to identify causes of delirium, or notes describing any treatment to control delirium symptoms. Discharge summaries were also reviewed to identify presence of delirium in any part of the diagnosis. With respect to delirium detection by nurses, any documentation representing awareness of the syndrome, such as nursing diagnosis of delirium or confusion, any recognition of delirium symptoms, or nursing plan to manage delirium were all defined as recognition. Data regarding nursing care plans for patients with delirium were gathered from patient medical records. Current guidelines for nursing care planning in patients with delirium recommend multiple effective interventions[15]. Suggested items specific to care delivered by nurses were considered[9]. Those items were therefore grouping by the researchers, according to aspect of care provided, into five domains, namely physiological support, pharmacological management, psychosocial support, effective communications, and adequate environmental arrangements (Appendix). Data with respect to nursing care in those domains was collected. Mortality in this study was defined as all in-hospital death of delirious patients in the cohort. This study was approved by the Siriraj Institutional Review Board (SIRB).

Statistical analysis

Baseline characteristics were analyzed using descriptive statistics. Parametric and non-parametric tests were applied, as appropriate, according to the distribution of variables. Categorical variables were

analyzed using Chi-square test. Fisher's exact test was used for categorical data that had a count of less than 5. Binary logistic regression models were used to obtain unadjusted and adjusted odds ratios with 95% CI for factors affecting mortality. A p-value <0.05 was considered statistically significant. All statistical analyses were performed using SPSS Statistics version 17.0 (SPSS, Inc., Chicago, IL, USA).

Results

One hundred ten delirium patients with a mean age of 79 years (range 70-97) were included. A majority of the study population (84.2%) had less than 6 years of education, with 59.1% being female and 59.8% being divorced. The mean number of comorbid diseases was 3.7 and there was a very high prevalence of dementia (62%). The average number of medications used was 6.1 with 50.9% of patients being classified as severely ill. The leading cause of hospital admittance was infection (33.6%), followed by respiratory distress (19.1%) and decreased level of consciousness (15.5%). Mean length of stay (LOS) was 12.2 days (range 2-60) and overall mortality rate was 25.5%. Regarding delirium subtype, most patients had hypoactive delirium (58.2%), with hyperactive and mixed-type rates of 9.1% and 32.7%, respectively (Table 1).

Rate of any recognition of delirium by physician was 57.3%. Recording of delirium diagnosis in patient discharge summary was far lower at 14.5%. When taking into account other diagnoses similar to delirium (including alteration of consciousness and confusion), an additional 8.2% of cases were identified in discharge summaries. Documentation of dementia diagnosis in our study population was found in 15.4% of cases. For psychotropic medications used by 29.1% of our delirium patients, the majority were prescribed haloperidol (18.2%), followed by quetiapine (16.4%). Documentation of delirium counseling by physicians was found in 14.5% of cases (Table 2).

Rate of delirium recognition among nurses was 61.8%, with the term "delirium" used in only 10.0% of documented diagnoses. Domains of nursing care for delirium patients are shown in Table 3. Presence of evidence of care plan in any domains would be counted as having care plan in those domains. The accumulated numbers of domains documented were presented in Table 3. Regarding nursing care plan, a comprehensive care plan including the five domains was identified in 23.1% of all cases. The vast majority of nursing domain planning related to physiological support (97.1%), followed by adequate environmental support (79.4%) and pharmacological management (29.4%). Documentation regarding additional safety management for physical restraints and relocating

Table 1. Baseline characteristics of delirium patients (n = 110)

Characteristics	n (%)
Age (years)*	78.6±5.9
Length of stay (day)*	12.2±10.9
Number of comorbid diseases*	3.7±1.7
Medications used*	6.1±3.7
Gender, n (%)	
Male	45 (40.9)
Female	65 (59.1)
Education[a], n (%)	
Six years	85 (84.2)
More than six years	19 (15.9)
Marital status[b], n (%)	
Single	4 (4.3)
Married	33 (35.9)
Divorced	55 (59.8)
Comorbid disease, n (%)	
Hypertension	77 (70.0)
Dementia	68 (61.8)
Chronic kidney disease	50 (45.5)
Diabetes mellitus	46 (41.8)
Coronary artery disease	29 (26.4)
Cancer	29 (26.4)
Stroke	16 (14.5)
Depression[c]	18 (18.4)
Congestive heart failure	12 (10.9)
COPD	6 (5.5)
Reason for admission, n (%)	
Acute coronary syndrome	3 (2.7)
Infection	37 (33.6)
Hypotension	18 (16.4)
Acute renal failure	3 (2.7)
Stroke	1 (0.9)
Alteration of consciousness	17 (15.5)
Respiratory distress	21 (19.1)
Other**	10 (9.1)
Delirium type, n (%)	
Mix delirium	36 (32.7)
Hypoactive delirium	64 (58.2)
Hyperactive delirium	10 (9.1)
Severely ill, n (%)	56 (50.9)
Discharge status, n (%)	
Survived	82 (74.5)
Death	28 (25.5)

COPD = chronic obstructive pulmonary disease
* Variables are presented as mean ± standard deviation
** Scheduled admission for investigation
Available number of subjects for some variables was, as follow: [a] n = 101, [b] n = 92, [c] n = 98

Table 2. Physician recognition of delirium and treatment prescribed

Variables	n (%)
Any evidence of recognition of delirium	63 (57.3)
Documentation in discharge summary	35 (22.7)
Delirium	16 (14.5)
Other similar conditions	9 (8.2)
Psychotropic medications used*	32 (29.1)
Haloperidol	20 (18.2)
Quetiapine	18 (16.4)
Diazepam	4 (3.6)
Risperidone	3 (2.7)
Lorazepam	2 (1.8)
Olanzapine	1 (0.9)
Other**	3 (2.7)
Counseling provided to family	16 (14.5)

* Each patient might use more than one medication
** Fentanyl, mianserin, sertraline

Table 3. Nurse recognition of delirium and documented care plans

Patient care	n (%)
Any evidence of recognition of delirium	68 (61.8)
Specific nursing diagnosis as 'delirium'	11 (10.0)
Nursing care plan among patients	
General nursing care	42 (38.2)
Specific delirium nursing care	68 (61.8)
Nursing care plan among detected delirium	
1 domain	9 (13.2)
2 domains	14 (20.6)
3 domains	16 (23.5)
4 domains	14 (20.6)
5 domains	15 (22.1)
Nursing care plan in each domain among detected delirium	
Physiological support	66 (97.1)
Pharmacological management	20 (29.4)
Psychosocial support	38 (55.9)
Effective communication	36 (52.9)
Adequate environmental arrangements	54 (79.4)
Counseling provided to family	24 (21.8)
Additional safety management	
Physical restraints	14 (12.7)
Relocate patient	9 (8.2)

patients closer to nursing station was found in 12.7% and 8.2% of cases, respectively. Counseling to family members by nurses was identified in 21.8% of cases (Table 3).

With regard to documentation of delirium symptoms in medical records, the most common manifestations were disorientation (46.4%), hypersomnia (44.5%), agitation (20%), calling out (18.2%), and aggression (17.3%). Major complications were documented in two cases (one fall and one pressure ulcer).

Mortality rate of delirious patients in this study was 25.5% and causes of death were sepsis (50%), cancer (39%), and cardiovascular cause (11%). Logistic regression analysis was performed to explore factors associated with risk of in-hospital death (Table 4). Factors significantly associated with increased mortality in univariate analysis were severe illness (OR 5.46, 95% CI 1.94-15.39; $p=0.001$), presence of malignancy (OR 4.47, 95% CI 1.77-11.30; $p = 0.002$), presence of infection (OR 3.32, 95% CI 1.22-9.05; $p = 0.02$), and unrecognized delirium (OR 3.29, 95% CI 1.34-8.06; $p = 0.009$). Subtype of delirium, use of psychotropic agents, recognition of delirium by nurses, and having delirium nursing care plan in any domain, age, gender, co-morbid diseases, and dementia all failed to demonstrate association with mortality in univariate analysis. In multivariate analysis using statistically significant factors from univariate analysis, only unrecognized delirium and severe illness significantly associated with mortality (adjusted OR 5.16, 95% CI 1.45-18.29; $p = 0.01$ and adjusted OR 5.81, 95% CI 1.81-18.64; $p = 0.003$, respectively). Baseline characteristics of patients with recognized and unrecognized delirium were analyzed and found no difference with regard to gender, age, number of co-morbid diseases, illness severity, medication used, causes of admission, and presence of dementia.

Discussion

A substantially high rate of unrecognized delirium was identified among older patients admitted

Table 4. Factors associated with mortality according to logistic regression analysis

Characteristics	Univariate analysis odds ratio (95% CI)	*p*-value	Multivariate analysis adjusted odds ratio (95% CI)	*p*-value
Severe illness	5.46 (1.94-15.39)	0.001	5.81 (1.81-18.64)	0.003
Malignancy	4.47 (1.77-11.30)	0.002	2.68 (0.83-8.60)	0.10
Infection	3.32 (1.22-9.05)	0.02	3.22 (0.87-11.84)	0.83
Unrecognized delirium	3.29 (1.34-8.06)	0.009	5.16 (1.45-18.29)	0.01

p-value <0.05 indicates statistical significance

to general medical wards at Siriraj Hospital, Thailand's largest university-based tertiary referral center. Rate of delirium detection was similar among physicians and nurses in the present study. Rate of delirium detection among physicians in this study was slightly higher than rates reported in previous studies conducted in older hospitalized patients[21,22]. Providing that the study was conducted based on retrospectively review of medical records, it is possible that treating physicians might be aware of the occurrence of delirium but did not officially note in medical records. The true recognition rate of delirium among physicians might be higher than reported in this study. However, with the conduction of the project where the researchers had informed treating physicians for the presence of delirium, this should have led to more awareness of delirium among physicians. Nevertheless, the documentations of the recognition of delirium as shown in the present study, which appears to address more on adequate attention to this condition, remains at low rate.

According to multivariate analysis, delirium patients who went undiagnosed in this study showed strong association with increased mortality. Additional analysis found that undiagnosed delirium patients had lower severity of illness. Interestingly, patients with recognized delirium had higher survival rate, despite being more ill. This emphasizes the importance of physician awareness of delirium. Identification of precipitating factors, most of which require prompt intervention, is a suggested key practice when delirium is recognized[1]. Actions taken following the recognition of delirium would have led to better care of patients. The unawareness of delirium among physicians in the present study shows stronger association with poor patients' outcomes after adjusted for illness severity. More proactive intervention should be drawn to improve physicians' awareness of this condition.

Detection rate of delirium among nurses from a recent systematic review[23] was shown to vary widely, ranging from 26 to 83%. Unrecognized delirium among nurses in the present study was much higher compared to a study with similar methodology in delirium recognition in geriatric wards[22], but substantially lower than a prospective study conducted in general medical and surgical wards using more stringent criteria[12]. It could be hypothesized that studies conducted in a prospective manner should produce higher detection rates, but the results contradict this notion. A probable explanation centers on differences in experience between nurses, for which nurses in geriatric wards would have more experience and education relating to delirium with associated higher rates of delirium recognition. The present study was conducted in general medical wards, where nurses would likely be less familiar with the subtleties of older patients with delirium.

Several explanations have been proposed regarding unrecognized delirium. The atypical presentations of the syndrome, inadequate knowledge of health care personnel, and under appreciation of delirium's impact and consequences have been mentioned[1,24]. The lack of a bedside cognitive assessment tool for screening for delirium is another possible explanation for this lack of recognition. Although guidelines have been recommended for routine monitoring of delirium, no specific screening tools that can be feasibly performed at bedside without the use of excessive time and effort have been developed. Most previous studies[21,23] did not implement any routine assessment for delirium. Further study focusing on the development and implementation of a practical screening tool for the detection of delirium in at-risk populations is warranted.

Documented nursing care plans for patients with delirium were identified at an unsatisfactorily low rate. It should, however, be noted that the number of nursing plans identified closely corresponded to the number of diagnosed cases of delirium. The most frequently addressed nursing domain was physiological support, followed by environmental arrangement. With the setting of general medical wards in Thailand, limited interventions regarding environmental arrangement and psychosocial support could be implemented. In addition, the normal workload for nurses in centers like Siriraj Hospital is routinely intense, which makes specialized, high-quality care for older patients suffering from delirium a clinical challenge and difficult to achieve.

According to the findings from our study, detection of delirium, and quality of care for older patients with delirium can be improved. Apart from providing well-arranged modules of education and applying routine assessment, arranging special wards for monitoring at-risk patients with appropriate environment and psychosocial support is another example of a successful model of care[25]. Implementing this type of model of care in general wards, possibly with some modifications, would be a good way to evaluate the model and observe for improvements in patient care and outcome in our clinical setting.

In conclusion, the present study addressed the high rate of unrecognized delirium in general medical wards and the effect of unrecognized delirium on patient mortality. Rate of unrecognized delirium by healthcare providers in this study was high, but comparable to previous studies. Moreover, under-recognition of delirium was found to lead to higher mortality. Routine screening for delirium and implementation of a proactive care plan by nurses for older patients admitted to general medical wards might be a strategy for improving this common and preventable medical condition and for lowering delirium-related mortality rates. Interventions could be implemented at different points of care in order to improve overall quality of care for older patients in medical wards. Studies to prove the benefit of these suggested strategies are recommended.

What is already known on this topic?

Delirium is very common among older patients admitted to hospital in various setting. Older patients with delirium in general medical wards experienced higher mortality. Delirium is often unrecognized by healthcare personals. Studies in the under-recognition of delirium in clinical settings in Thailand have been limited. Consequence of under-recognized delirium has not been explored in Thailand.

What this study adds?

Rate of unrecognized delirium by healthcare providers in this study is high, although similar to studies conducted in other countries. Moreover, under-recognition of delirium is associated with higher mortality. Quality of nursing care for older patients with delirium showed to have some room of improvement. It should be further investigated whether increase recognition of health care providers with appropriate knowledge would lead to improving mortality in older patients.

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Potential conflicts of interest

None.

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Appendix. Domains of nursing care for patients with delirium

Domain	Details
Physiological support	- Establish/maintain normal status of body temperature, blood pressure, and oxygenation. - Establish/maintain normal fluid intake, nutrition intake, elimination patterns, and sleep/wake patterns. - Minimize fatigue by planning care that allows for separate rest and activity periods. - Increase activity and limit immobility. - Provide exercise to combat the effects of immobility and to "burn off" excess energy. - Decrease caffeine intake to help reduce agitation and restlessness. - Address discomfort/pain. - Consult with a nurse specialist in geriatrics or psychiatry in cases of severe disruptive behavior, psychosis, or if symptoms do not resolve within 48 hours.
Pharmacological management	- In general, limit use of medications (to the extent possible) in patients with acute confusion and disruptive behaviors. - Monitor for intended and adverse effects of medications.
Psychosocial support	- Encourage patients to be involved in and to control as much of their care as possible. - Allow patients to set their own limits and do not force them to do things they do not want to do, as this is likely to cause disruptive behaviors. - Provide reminiscing activities, whenever possible. - Allow patients to engage in activities that limit anxiety.
Effective communication	- Reality orientation: offer orienting information as a normal part of daily care and activities; repeat information, as needed, for confused patients. - Use short, simple sentences. - Speak slowly and clearly using a low pitched voice to increase likelihood of being heard; do not act rushed and do not shout. - Identify patient at each contact, calling patient by his/her preferred name. - Repeat questions, as needed, allowing adequate time for response. - Point to objects or demonstrate desired actions. - Tell patients what you want done - not what not to do. - Listen to what the patient says, observe behaviors, and try to identify the message, emotion, or need that is being communicated. - Validation therapy: this technique attempts to identify the reason behind the expressed feeling. - Resolution therapy: this technique attempts to understand and acknowledge the feelings of a confused patient. - Use nonverbal communication alone or in combination with verbal messages. - Educate the patient (when not confused) and family.
Adequate environmental arrangements	- Provide orienting information and explain the situation, unfamiliar equipment (e.g., monitors, intravenous lines and oxygen delivery devices), the rules/regulations, plan for care, and the need for safety measures. - Remove unfamiliar equipment/devices as soon as possible. - Provide call bell and be sure it is within the patient's reach. The patient should understand its purpose and demonstrate an ability to use it. - Use calendars and clocks to help orient patients. - Limit possible misinterpretations or altered perceptions that may occur due to pictures, alarms, decorations, costumed figures, television, radio, or call system. - Work with patient to correctly interpret his/her environment. - Establish a consistent routine and use the same primary nurses and caregivers as consistently as possible. - Bring in familiar items from the patient's home; allows patient to wear his/her own clothes. - Avoid room changes, especially at night. Put delirious, disruptive patients in a private room, if possible. - Create an environment that is as "hazard free" as possible. - Provide adequate supervision of acutely confused/delirious patients. - Avoid physical restraint whenever possible; use a sitter or have a family member stay with the patient if safety is a concern. If restraints must be used, use the least restrictive of restraint options. - Consider moving the patient closer to the nurses' station. - Environmental modification may be indicated if many patients wander, including: wandering alarms, exit door alarms, and/or painting lines on the floor in front of exits or rooms you do not want the patient to enter. Wandering can also be managed by "collusion" method, which involves walking with patient and then you or other staff "invite" him/her to return to bed or room. - Have a plan to deal with disruptive behavior; keep your hands in sight; avoid "threatening" gestures or movements; remove potentially harmful objects from the patient, the room, and the caregiver. Bear in mind that these episodes may not be remembered by the patient.

ภาวะซึม สับสนเฉียบพลันที่ไม่ได้รับการตระหนักมีความชุกสูงในผู้ป่วยสูงอายุที่นอนในหอผู้ป่วยอายุรกรรมและมีความสัมพันธ์กับอัตราการตายสูงขึ้น

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วัตถุประสงค์: ภาวะซึม สับสนเฉียบพลันเป็นกลุ่มอาการที่มีอัตราการตายสูงและมักไม่ได้รับการตระหนักถึงจากบุคลากรทางการแพทย์ การศึกษาเกี่ยวกับผลลัพธ์อันเกิดจากความไม่ตระหนักถึงภาวะซึม สับสนเฉียบพลัน ยังมีอยู่จำกัด การศึกษานี้จึงมีวัตถุประสงค์เพื่อศึกษาความชุกของภาวะซึม สับสนเฉียบพลันที่ไม่ได้รับการตระหนักจากบุคลากรทางการแพทย์ และศึกษาผลของการไม่ตระหนักถึงภาวะซึม สับสนเฉียบพลัน ต่ออัตราการตายของผู้ป่วย

วัสดุและวิธีการ: ผู้นิพนธ์ได้ทำการศึกษากลุ่มประชากรสูงอายุที่มีอายุมากกว่า 70 ปี และเกิดมีภาวะซึม สับสนเฉียบพลันระหว่างการนอนอยู่ในหอผู้ป่วยอายุรกรรม โดยการวินิจฉัยภาวะซึม สับสนเฉียบพลัน ทำโดยอายุรแพทย์ด้านผู้สูงอายุ ซึ่งใช้เกณฑ์ DSM-IV ผู้นิพนธ์เก็บข้อมูลจากเวชระเบียนเกี่ยวกับความตระหนักถึงภาวะซึม สับสนเฉียบพลันของแพทย์และพยาบาล และมีการศึกษาปัจจัยที่สัมพันธ์กับอัตราการตายโดยใช้ binary logistic regression models

ผลการศึกษา: ในผู้ป่วย 110 ราย ที่มีภาวะซึม สับสนเฉียบพลัน พบว่าแพทย์มีความตระหนักถึงภาวะนี้ร้อยละ 57.3 โดยมีผู้ป่วยที่ได้รับการสรุปการวินิจฉัยในรายงานก่อนจำหน่ายว่ามีภาวะดังกล่าวเพียงร้อยละ 14.5 สำหรับในส่วนของพยาบาล พบว่า พยาบาลมีความตระหนักถึงภาวะซึม สับสนเฉียบพลันร้อยละ 59.1แต่มีผู้ป่วยที่ได้รับการบันทึกทางการพยาบาลแบบครอบคลุมทุกด้านที่เหมาะสมกับภาวะซึมสับสนเฉียบพลันเพียงร้อยละ 13.6 ผู้ป่วยที่มีภาวะซึม สับสนเฉียบพลัน แต่แพทย์ไม่ได้ตระหนักถึงภาวะดังกล่าวมีอัตราการตายสูงถึงร้อยละ 38.3 เมื่อเทียบกับผู้ป่วยที่ได้รับการตระหนักโดยแพทย์ซึ่งมีอัตราการตายร้อยละ 15.9 ($p = 0.008$) และเมื่อนำมาวิเคราะห์ต่อใน multivariate analysis พบว่า ความไม่ตระหนักถึง (unrecognized) ภาวะซึม สับสนเฉียบพลันเป็นปัจจัยเสี่ยงที่สัมพันธ์กับอัตราการตาย (OR 5.16, 95% CI 1.45-18.29)

สรุป: อัตราความไม่ตระหนักถึงภาวะซึม สับสนเฉียบพลันของแพทย์และพยาบาลในการศึกษาครั้งนี้อยู่ในเกณฑ์ที่สูงและไม่แตกต่างกับการศึกษาในต่างประเทศ นอกจากนี้ยังพบว่าความไม่ตระหนักถึงภาวะซึม สับสนเฉียบพลันเป็นปัจจัยที่มีความสัมพันธ์กับอัตราการตายการคัดกรองภาวะซึม สับสนเฉียบพลันในผู้ป่วยสูงอายุที่นอนโรงพยาบาลโดยพยาบาล และมีแผนการดูแลล่วงหน้า อาจช่วยเพิ่มคุณภาพในการดูแลภาวะซึม สับสนเฉียบพลันอันเป็นปัญหาที่พบบ่อยในทาง อายุรกรรม และเป็นภาวะที่ป้องกันได้