

# Acute Confusion Among the Patients in Surgical Intensive Care Units



**Li Yu Hsiao**

*Registered Nurse*

Chang Gung Medical Hospital Kaohsiung,  
Taiwan

# Introduction

- An ICU(intensive care units) patient's probability of occurrence of acute confusion is higher than that of a general inpatient.
- Acute confusion is likely to not only cause accidental injury and prolong ICU stay, but also increase the mortality.

# Objectives

- **The new environment of ICUs, noises, illness, anxiety, pains, and 24 hours of continual nursing care result in the deprivation of sleep, affect ICU patients sleep quality and activate acute confusion.**
- **Accordingly, this triggers the motivation to explore it. This study incidence of acute confusion, the related factors and predictors of acute confusion.**

# Methods

## ➤ Research Design

- A descriptive correlational design was adopted.
- This study recruited patients, transferred to ICU after the surgery and had been in ICU for more than 24 hours as subjects, totaling 263 people.

# Methods

- **Sample Selection Criteria**
- Participants were the patients who had been admitted to the surgical intensive care unit and staying at least *24 hours* after Surgery.
- The Sample 263 completed the short portable mental status questionnaire test.

# Pittsburgh Sleep Quality Index(PSQI)

- The covered domains include Sleep Quality 、 Sleep Latency 、 Sleep Duration 、 Habitual Sleep Efficiency 、 Sleep Disturbance 、 Use of Sleep Meds 、 Daytime Dysfunction.
- Each component score ranges from 0 (no difficulty) to 3 (severe difficulty).
- A PSQI global score  $>5$  is considered to be suggestive of significant sleep disturbance.

# Confusion assessment method for intensive care unit

- The CAM-ICU Include four feature
- Acute confusion is diagnosed when both Features 1 : Acute onset of mental status or fluctuating course and Features 2 : Inattention are positive.
- Along with either Feature 3 : Disorganized thinking or Feature 4 : Altered level consciousness.

# multiple regression

variables	Regression	SE	df	p-value	OR	95% C.I	95% C.I
Sedation	7.009	0.004	1.000	0.008*	1.014	0.846	0.968
Foley	2.492	0.487	1.000	<0.001*	12.086	4.649	31.420
Age	0.210	0.047	1.000	<0.001*	1.234	1.125	1.353
Sleep Latency	1.890	0.355	1.000	<0.001*	6.619	3.300	13.275
Sleep Duration	3.096	0.727	1.000	<0.001*	22.116	5.315	92.032
Sleep Disturbance	-0.881	0.383	1.000	0.021*	0.415	0.196	0.878
Daytime Dysfunction.	1.821	0.359	1.000	<0.001*	6.175	3.053	12.492
PSQI	0.518	0.101	1.000	<0.001*	1.678	1.376	2.047
Pain	0.868	7.213	1.000	<0.001*	2.383	1.570	3.617



# Stepwise multiple regression

variables	Regression	SE	df	p-value	OR	95% C.I lower	95% C.I upper
Age	0.185	0.068	1.000	0.002*	2.339	1.356	4.033
Foley	2.600	0.909	1.000	0.004*	13.465	2.266	79.99
PSQI	0.600	0.156	1.000	<0.001*	1.823	1.342	2.475
Pain	0.935	0.337	1.000	0.002*	2.339	1.356	4.003

# Descriptive statistics

	n	Min.	Max.	The sum of score	mean	Std deviation
Age	263	20	94	6529	51.41	16.53
APACH II	263	15	34	2626	20.68	2.52
PSQI	263	2	21	1569	12.3543	4.725

Sleep quality		
<i>one-week time interval</i>	Sample	percentage
0-never	32	12.2
1- one	116	44.1
2- two or three	74	28.1
3- four	41	15.6

# ANOVA (a)

Model	R	R square	Adjusted R Square	Std. Error of The estimate
1	.389(a)	.099	.092	4.5034

a. Predictor:(constnat),Apache II

# ANOVA (b)

	Sum of Square	Degree Of freedom	Mean Square	F	significance
Regression	278.005	1	278.005	13.708	.000(a)
Residual	2535.050	125	20.280		
Total	2813.055	126			

a. Predictor:(constnat),Apache II b. dependent variable: PSQI score

# Results

- The results showed acute confusion was **79.41%** and the incidence was the highest after one day of ICU stay, accounting for up to **33.1%** of the population.
- The predictor of acute confusion was Foley (catheterization) p-value, which was **0.004** (OR, 13.465; 95% CI, 2.266 ~ 79.99).

# Results

- The age p-value was **0.002** (OR, 2.339; 95% CI, 1.356 ~ 4.033).
- The pain index p-value was **0.002**(OR, 2.339; 95% CI, 1.356 ~ 4.033).
- PSQI score p-value was smaller than **<0.001** (OR, 1.823; 95% CI, 1.342 ~ 2.475).

# Results

- APACHE II and acute confusion there is a significant positive correlation ( $r = .389$ ,  $p < .000$ ).
- APACHE II and predictable **9.2%** of the variance in acute confusion.
- Linear regression analysis APACHE II ( $R^2 = .092\%$ ,  $P < .000$ ).

# Conclusion

- These four variables are statistically significant and therefore can be the predictor for SICU patients with acute confusion ( $R^2 = 0.538$ ).
- The outcomes necessary is to recognize high-risk populations of acute confusion based on age ,Foley , pain, PSQI

# Conclusion

- This study can be used in clinical practice for early detection of high risk of acute confusion to prevent further damage so that ICU nurses can establish a care model that prevent risk factors of acute confusion and improve the quality of health care.



# Limitations

- Sleeping quality of patients only is depended on their self-evaluation in response to the questionnaire .
- It is inevitable to exist the small difference between the findings and truth.
- There could be new generalization and explanation with an objective apparatus measurement methods in the future.

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