

How Nurses Understand and Perceive Delirium in Older Adults?

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Objective: Delirium is usually under-detected and under-treated. Understanding the barriers of this issue among nurse practitioners is crucial in order to deliver effective educational strategies for delirium care. The objectives of the present study were to examine knowledge and attitudes regarding delirium among them, and associated factors.

Materials and Methods: This is a cross-sectional study. The survey was conducted from October 1 to December 31, 2016. Questionnaires were developed to evaluate the participants' knowledge and attitudes regarding delirium. These were then sent to the nurse practitioners who worked with and cared for older patients of Srinagarind Hospital, Thailand. The completed questionnaires were returned to the researchers.

Results: A total of 407 out of 600 questionnaires were returned (67%). The median score on questions pertaining to knowledge of delirium was 58.6%. Most respondents were knowledgeable about the prevalence and risk factors of delirium (71.4%). They displayed modest knowledge regarding its importance (62.5%), treatment, and prevention (60%), but showed poor knowledge regarding diagnosis (0%) of the condition. Factors associated with number of correct answers were increased years of practice (adjusted odds ratio [AOR] 1.04) and experience in geriatrics (AOR 3.21). The majority of respondents agreed that delirium was a normal condition for hospitalized older patients and had little confidence in their ability to detect and treat this condition.

Conclusion: Nurse practitioners displayed misperceptions and a lack of knowledge, as well as misperceptions regarding delirium. Work experience and experience in geriatric medicine were significantly associated with better scores.

Keywords: Acute confusion state, Education, Older people, Questionnaire, Survey

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Delirium is a common neuro-psychiatric disorder that manifests as an acute fluctuating of

consciousness, attention, cognition, and perception over a short period^(1,2). This condition can lead to several devastating outcomes among hospitalized older patients such as an increased mortality rate, an increased length of hospital stay, a higher rate of nursing-home placement, persistent functional decline, and increased healthcare costs (including in-hospital and post-discharge up to 12 months post-

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discharge⁽¹⁻⁸⁾. Its prevalence at hospital admission varies from 11 to 42%. The incidence rate during hospitalization in a general ward is 3 to 56%^(9,10). The prevalence rates are much higher in intensive care units [ICU], which range from 19 to 87% and 60 to 80% in mechanically ventilated patients^(2,11-13).

Nurses play a key role in primary detection of delirium, as they spend more time with the patients in daily care than do other healthcare professionals^(4,14). Under-recognition of delirium is an important issue, and varies from 23 to 75%, even though this condition is highly prevalent and the factors that cause it, as well as several of its consequences, could be preventable⁽¹⁴⁻¹⁷⁾. There are various reasons for this issue including patients' conditions such as age (in particular an age >80 years), length of stay, preexisting dementia, baseline Barthel index, hypoactive delirium, and vision impairment^(14,15). The other potential reason for this issue is the lack of understanding of delirium among healthcare professionals. Existing studies report that their knowledge and attitudes regarding the condition appear to be less adequate than those of other common medical conditions such as acute coronary syndrome or pneumonia. Although they perceived delirium to be a common condition, their awareness and their understanding regarding validated screening tools were limited^(10,18-20). One survey among nurse practitioners showed that only 27% of all respondents used delirium screening tools⁽²¹⁾.

Knowledge and attitudes of nurse practitioners and factors associated with this knowledge have not been adequately examined, particularly in Asian countries. Since rapid detection and early management is essential in reducing undesirable outcomes⁽²²⁾, understanding under-detection of delirium could be beneficial in planning strategies and educational programs to improve awareness and proper management of the condition. Therefore, the primary objective of the present study was to evaluate the knowledge and attitudes regarding delirium among nurse practitioners, as well as to identify any factors that are associated with possessing greater knowledge of the condition.

Materials and Methods

Participants

Nurse practitioners who worked with and cared for older patients at Khon Kaen University's Srinagarind Medical School (Thailand) were included in the present study. The participants who did not return the questionnaire were excluded.

Materials

The questionnaire was developed to test knowledge and attitudes regarding delirium according to the clinical practice guidelines of Thailand's Institute of Geriatric Medicine⁽²³⁾. It was constructed using a deliberate stepwise process that included item generation and clarification by delirium specialists including geriatricians, neurologists, and gerontological nurses. It consisted of questions that evaluated attitude regarding delirium and knowledge about areas in which it is prevalent, risk factors, adverse outcomes, diagnosis using Diagnostic and Statistical Manual of Mental Disorders [DSM-5] criteria, treatment, and prevention. The questionnaire was piloted using nurses, and some questions were subsequently altered for clarity without substantially changing the content of the questionnaires. It contained 29 items related to general knowledge (prevalence and risk factors = 14 items, importance and outcomes = eight items, diagnosis = two items, treatment and prevention = three items), which required "yes" or "no" answers. Attitudes and beliefs with respect to confidence in delirium diagnosis and clinical significance of the condition were assessed using a five-point Likert scale.

Procedures

The survey period was conducted between October 1 and December 31, 2016. The nurses who agreed to proceed after researchers explained to them the rationale for the survey were asked to complete the questionnaire in one sitting without discussion or access to books, computers, or other materials. Anonymity was assured, and no incentives were offered. The completed questionnaires were then handed back to the researchers.

Statistical analysis

Descriptive statistics were used to analyze the baseline data, which were presented as %, mean, and standard deviation [SD]. If the distribution of these data did not conform to normal distribution, then medians and inter-quartile ranges were used instead. Effects of factors associated with basic delirium knowledge scores were evaluated using regressions analysis with logistic transformation. Adjusted odds ratios [OR] and 95% confidence intervals [CI] were used to denote the strength of association of various factors with knowledge scores. A *p*-value <0.05 was considered to indicate statistically significant differences. All data analysis was carried out using STATA version 10.0 (StataCorp, College Station, Texas).

Approval from the Khon Kaen University Institutional Review Board was obtained. The Khon Kaen University Ethics Committee determined that the project could be exempted since it involved the use of non-sensitive, completely anonymous educational tests and surveys and that the participants could not be defined as “vulnerable”. The requirement for informed consent was, thus, waived.

Results

Participant characteristics

Specific questionnaires regarding general knowledge of and attitudes toward delirium were administered to all nurse practitioners. A total of 407 out of 600 questionnaires were returned (67%). These 407 respondents were recruited into this study. Baseline characteristics of the study population are shown in Table 1. The majority of respondents were women who had about 10 years of practical experience and worked in a non-surgical ward, non-internal medicine ward, or an outpatient clinic. About one-fifth of participants had undergone geriatric training and about 10% had undergone neurological and psychiatric training.

General knowledge regarding delirium

Delirium knowledge scores are shown in Table 2. The distribution of the scores was not normal. The median score was 14 out of 29 (58.6%). The greatest

number of respondents were able to answer correctly in the areas pertaining to prevalence and risk factors, followed by importance and outcomes, and treatment and prevention. However, most failed in the areas pertaining to diagnosis. Factors associated with the numbers of corrected answers according to multiple regression analysis with logistic transformation are shown in Table 3. Only increased years of practice and experience in geriatric medicine affected the delirium knowledge scores.

Attitudes about delirium in older adults and experience in using validated screening tools

Only 15% (61 out of 407 respondents) admitted that they had used CAM criteria to detect delirium. Table 4 shows the attitudes of nurses regarding delirium in older adults. The vast majority of participants agreed that delirium was a normal condition for hospitalized older patients. Only a third of participants had confidence in their ability to diagnose delirium, but were confident in their ability to treat the condition.

Discussion

The results of this survey confirm that nurse practitioners’ overall knowledge regarding delirium was limited. Though their level of knowledge was high in the areas of delirium’s prevalence and risk factors and modest in the areas of its importance and management, they failed in their ability to diagnose the condition. Only 15% of respondents used a common validated screening tool; CAM criteria to detect delirium. This finding is consistent with previous reports that allied healthcare professionals considered delirium to be a frequent and serious problem but that it is usually under-recognized and under-monitored⁽¹⁹⁾. For example, An Italian survey found that about half of nurses could not define delirium properly, had modest knowledge about its core features, and tended not to use screening tools to diagnose the condition⁽²¹⁾. Another study found that subjective clinical impressions of delirium were used to detect condition more often than objective evaluation⁽²⁰⁾. The prevalence of under-recognition of delirium among nurses in the medical intensive care unit [ICU] in the same setting of the current study was about a third where delirium was common in the ICU⁽¹⁷⁾. Even in surveys of delirium specialist in Europe there were numerous areas in which there was little consensus regarding delirium care. The most frequent reported obstacles to improving diagnosis of delirium were lack awareness, knowledge, and education regarding the condition. The surveys

Table 1. Baseline characteristics of study the population

Variables	n = 407
Age (years); median (IQR1, IQR3)	32 (27, 45)
Female; n (%)	373 (91.7)
Years of practice (years); median (IQR1, IQR3)	9 (4, 20)
Working place; n (%)	
Non-surgical ward, non-internal medicine ward and OPD	228 (56.0)
Surgery and orthopedics ward	64 (15.7)
Internal Medicine ward	67 (16.5)
Emergency ward/ER	17 (4.2)
ICU, CCU	28 (6.9)
Not available	3 (0.7)
Clinical experiences	
Geriatric training; n (%)	91 (22.3)
Psychiatric training; n (%)	39 (9.6)
Neurological training; n (%)	39 (9.6)

IQR = inter-quartile ranges; n = total numbers of participants; ER = emergency room; OPD = outpatient department; ICU = intensive care unit; CCU = cardiac care unit

Table 2. Numbers of correct answers regarding knowledge about delirium

Topics	No. of correct answers median (IQR1, 3)	Total No. of items	(%) median (IQR1, 3)
Prevalence and risk factors	10 (8, 11)	14	71.4 (57.1, 78.6)
Importance and outcomes	5 (4, 6)	8	62.5 (50, 75)
Diagnosis	0 (0, 1)	2	0 (0, 50)
Treatment and prevention	3 (2, 3)	5	60 (40, 60)
Total	17 (15, 20)	29	58.6 (51.7, 69)

No response-counted as incorrect

No. = Number; IQR = inter-quartile ranges

Table 3. Factors associated with number of correct answers regarding delirium knowledge in older adults according to multiple regression analysis with logistic transformation

Factors	Adjusted OR 95% CI	p-value
Age	0.99 (0.98, 1.01)	0.20
Being female	1.52 (0.44, 5.24)	0.50
Years of practice	1.04 (1.01, 1.1)	0.03
Working place; n (%)		
Non-surgical and non-internal medicine ward and OPD	1	-
Surgery and ortho ward	1.56 (0.59, 4.16)	0.37
Internal medicine ward	2.55 (0.97, 6.69)	0.06
Emergency ward/ER	1.14 (0.2, 6.44)	0.88
ICU, CCU	1.83 (0.45, 7.42)	0.40
Clinical experience		
Geriatric training	3.21 (1.38, 7.42)	0.007
Psychiatric training	1	-
Neurological training	1.51 (0.46, 4.917)	0.49

OR = odds ratio; CI = confidence interval

Table 4. Attitudes on selected issues regarding delirium

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	No response
Delirium is a normal condition for hospitalized older patients	40 (9.8%)	94 (23.1%)	54 (13.2%)	168 (41.3%)	50 (12.3%)	1 (0.3)
I am confident in my ability to detect delirium in older adults	26 (6.3%)	97 (23.9%)	132 (32.4%)	134 (33%)	14 (3.4%)	4 (1%)
I am confident in my ability to treat older adults with delirium	16 (3.9%)	66 (16.2%)	120 (29.5%)	185 (45.5%)	16 (3.9%)	4 (1%)
The main physician who treats delirious patients should be a psychiatrist	46 (11.3%)	145 (35.6%)	78 (19.2%)	105 (25.8%)	28 (6.9%)	5 (1.2%)

also reported that the CAM was the most commonly used tool to detect delirium (52%), followed by the Delirium Observation Screening Scale (30%)⁽²⁴⁾. There

was also evidence that patients being knowledgeable about delirium had a significant positive correlation with proper nursing practice in Jordan⁽²⁵⁾. Therefore, it

is not surprising that overall, respondents who were not specialists in delirium lacked knowledge of and held misconceptions about the condition. These findings are crucial, as nurses play important an important role in identifying delirium in hospitalized patients, since they spend more time at their bedsides than do other healthcare professionals^(4,14). One possible explanation is that nurses may have misconceptions regarding delirium. According to the results of this study, most of the respondents believed that it was a normal condition for hospitalized older patients. Around 40% were confident in their ability to diagnose delirium and nearly half were confident in their ability to treat the condition. This report reflects the gaps in knowledge regarding delirium among nurse practitioners that has been detailed in numerous prior reports^(19,21,24).

The only two factors associated to improved knowledge regarding delirium among respondents were greater amounts of practical and geriatric experience. This could be explained by the fact that more years of practice may lead to greater skill and experience. Having had experience in geriatrics improves knowledge of delirium in that it usually focuses on geriatric syndromes (including delirium). Psychiatry and neurology, on the other hand, might emphasize issues such as stroke, dementia, and depression in older adults. This finding is consistent with those of a survey conducted in the United Kingdom among junior doctors that found that experience in geriatric medicine was the only factor significantly associated with a modest increase in the number of correct answers⁽¹⁸⁾.

As delirium is a common problem in older adults and is a medical emergency that leads to a number of unfavorable outcomes^(1,22), the results from this study imply that immediate action should be taken with regard to undergraduate, postgraduate and continuing medical education in this subject. In addition to formal teaching, this should also incorporate interactive intervention including (1) engaging leadership, (2) using clinical pathways and assessment tools by using person-centered care and detecting cognitive impairment, (3) enabling and reinforcing factors besides knowledge transmission, (4) empowering nursing staff to change their practices, and (4) preference for ward-based training with role modeling⁽²⁶⁻²⁸⁾. Since there is evidence that no one strategy (such as improvements to knowledge and skill) alone is sufficient to improve delirium detection among older adults, multiple approaches should be implemented^(27,28).

There are some limitations of this study. First, there was a selection bias since the setting was a tertiary care hospital where the prevalence of delirium is likely to be greater than in other settings. Therefore, it may not be possible to generalize the results to different settings. Secondly, there was a response bias due to self-reporting that might result from misinterpretation of questions or poor recognition of clinical experiences. Lastly, in some cases, there were some incomplete answers.

Conclusion

There are misconceptions and a lack of knowledge regarding delirium among nurse practitioners. Work experience and training in geriatric medicine were associated with increased knowledge. It is recommended that the amount of geriatric training in educational programs be increased and that nursing staff be encouraged to attend those kinds of activities in order to improve recognition of delirium. Future surveys would be useful in order to track trends in the prevalence, risk factors, importance, diagnosis, and management of delirium in older patients.

What is already known on this topic?

Delirium is a common disorder in hospitalized older patients and can lead to adverse outcomes. Diagnosis was mainly on clinical judgement. This condition is usually under-recognized and under-treated by nurses who play a key role in detection. Knowledge and attitudes of nurse practitioners and factors associated with this knowledge; however, have not been adequately examined, particularly in Asian countries.

What this study adds?

Nurse practitioners had misperceptions and a lack of knowledge regarding delirium. Factors associated with better scores on knowledge were work experience and experience in geriatric medicine.

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Potential conflicts of interest

The authors declare no conflict of interest.

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