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Development of a Delirium Educational Program for Hospital Nurses

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Abstract

This paper outlines an intervention protocol used to educate nurses in a project that implemented and evaluated a delirium educational program in one general hospital. It outlines an evaluation of the content of the education and processes used to deliver the intervention through an analysis of reflective notes. The educational protocol was designed for adult learners and grounded in the six assumptions of Knowles' learning theory. Results suggest the educational program positively impacted on participating nurses' knowledge, attitudes and family caregiver involvement in delirium care of hospitalized older adults with and without dementia. This paper also acknowledges the challenges involved in sustaining a practice change through an educational intervention.

***Keywords**: Delirium, care, Education, staff development*

1. INTRODUCTION

Delirium is a common and serious problem in hospitalized older adults, particularly those with dementia. Delirium is a complex neuropsychiatric syndrome that develops acutely and is characterized by disturbance in attention, awareness, and cognition [1]. It is four times more likely to occur in hospitalized older adults with dementia compared with hospitalized older adults without dementia [2]. Delirium is also linked to a range of serious adverse outcome such as increased morbidity [3, 4], which contributes to increased length of hospital stay [5, 6], increased mortality [7], and increased risk of institutionalization [4, 8]. Thus, providing delirium care for older people with and without dementia is a very demanding and complex task for nurses in hospitals.

The care of older people continue to be challenged by the current shortage of registered nurses (RNs) in hospitals. In South Korea, nurse-to-patient ration does not meet the required ratio of 4:1 in tertiary and 4.5:1 in general hospital [9]. In 2010, the median number of assigned patients per nurse was reported as 22 in 23 general hospitals with bed numbers >200 in Southern and Eastern providence in South Korea [10]. As a result, RNs usually delegate fundamental care activities such as feeding and toileting assistance to family caregivers, whose involvement is essential for providing the quality care [10, 11]. The current shortage of RNs, high workloads, and family caregiver involvement in inpatient care has the potential to affect the quality of delirium care. Thus, it is essential that RNs in South Korean hospitals understand delirium care.

The role of RN in providing quality delirium care and improving hospitalized older adults' quality of care cannot be overstated. The ability of RN to provide quality delirium care is related to delirium prevention,

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recognition and management due to their continuous contact with patient [12]. Education is a valuable tool in improving delirium assessment and management [13]. Wand [13], in the literature review of studies conducted in hospital settings, suggests that education to prevent delirium are most effective when formal teaching is interactive and combined with practice-based enabling and reinforcing strategies. Effective educational strategies include integration of clinical protocols that target modifiable risk factors for delirium in hospitalized older adults with dementia and at risk of delirium, and the use of audit and feedback, targeted peer-led education, small group or individual case-based discussions, and reminder systems. The presence of a clinical leader appears to have distinct advantages. Identified clinical experts and/or resource nurses in delirium care who are enthusiastic and accessible to ward staff may facilitate behavioral and organizational change and provide resources to train and support staff. They may also monitor and drive adherence to protocols, contributing to the effectiveness of their implementation.

This paper outlines an education protocol used for RNs as an intervention that implemented and evaluated a delirium care in one regional general hospital in South Korea. It also reports on the evaluation of the content of the intervention and the processes of delivering the intervention through reflective field notes. The educational intervention was designed for adult learners and grounded in the following assumptions set out in Knowles' theory [14]: a need to know; a responsibility for own learning; the role of experience in learning; a readiness or applicability of the information to a real life situation; a motivation to learn; and problem-centered learning with real life problems. Thus, this paper will highlight the lessons learned from the experiences of the on-site facilitator who provided the delirium educational intervention for RNs. The research questions of the study were specifically:

1. What information is revealed concerning delirium educational intervention in facilitator's reflective notes?

2. What challenges and concerns do the facilitator encounter as she conducts the educational intervention?

2. METHODS

2.1 Study Setting and Participants

This study took place on four medical wards (i.e., neurology ward, respiratory ward, and mixed specialty wards) in one regional general hospital. These wards provided care for hospitalized older adults with dementia and at risk of delirium who need medical treatment. Specifically, the neurology ward offered care for older people with the complex needs associated with aging, stroke and neurological problems. The respiratory ward specialized in the acute care of older patients with respiratory disease, such as pneumonia and asthma. The other two mixed specialty wards cared for older people admitted with gastroenterological conditions and older patients requiring stabilization of their diabetes mellitus and hypertension. Family caregivers on these wards were allowed to stay at the bedside 24 hours a day, providing basic care related to activities of daily living for their older family members.

Forty nurses in one general hospital received education and training that incorporated a range of teaching methods in delirium care for 3 months. Participation in the education and training was voluntary although the organization encouraged all nursing staff to attend.

2.2. Educational Intervention

The educational program used in this study is based on adult learning theory [14]. When appropriate adult learning strategies are applied, the professional knowledge and skills of participants are expected to improve. Knowles' adult learning theory [14] focuses on helping adults learn by grounding instructions in their prior

experiences as adults. The adult learners' background and life experiences contribute to how they think and reason. Supportive of Knowles, Tennant and Pogson [15] asserted that with adults, there is a direct relationship between learning and experience because learning is an active process in the sense that learners are continually trying to understand and make sense of their experience. Thus, there ought to be an attempt during learning activities to link presented material to the prior experiences of leaners in order to build a bridge from the known to unknown. Adapting the presented material to the immediate problems and concerns of learners ensures that learning is relevant. Creating interactions such as group discussion, or role-playing originates new experiences as a result of the active participation in learning [15]. Furthermore, Joyce and Showers [16] suggested that for adults, learning may be enhanced by giving learners opportunities to apply their skills and receive coaching and feedback. The case study format is considered the basis for a framework for practical application, collaborative coaching relationships, and feedback from others facing similar challenges or who have more extensive experience [16]. Cross [17] postulated that adult learners respond best to educational endeavours that permit them to determine their own learning goals and include topics relevant to their own daily experience and interests. Similarly, Terehoff [18] recommends attending to the learning needs and interests of adult students, using their personal work experiences to help them to learn to solve problems.

The three-month program consisted of two one-and-a half hour workshops in the 1st month and two fifty-minute ongoing support sessions in the 2nd and 3rd month . The educational program focused on providing information about delirium prevention, assessment and management in hospitalized older adults with and without dementia. The learning methods included patient scenarios, role-playing, discussion, lecture and self-directed study. The reflective and interactive approach was facilitated by the use of case-based group discussion, presentations to the whole class following the small-group discussion and non-judgmental feedback from the facilitator and colleagues [19]. A pocket-sized laminated card of the revised delirium superimposed on dementia (DSD) algorithm [20] was provided to participating nurses to help them to apply the knowledge to their practice. Delirium brochures [21] were used to provide delirium information to family caregivers on hospital admission and involve family caregivers in care of their older family members with delirium. The educational program was delivered as a ward-based, in-service intervention, and participating nurses were encouraged to call the author as facilitator if they had any questions about delirium and DSD care at any time during the period of the educational program. The content and processes used for the education and training as aligned with Knowles' theory [14] are outlines in Table 1.

The educational program was delivered four times, with 7–10 participants each time and the author serving as facilitator.

Table 1. Knowles' theory and content and process of educational program

Components of Knowles' theory	Content	Processes
• A need to know	• Two one-and-a half hour workshops in the first month and two fifty-minute ongoing support sessions in the 2nd and 3rd month including content on: - Delirium, dementia and DSD - Assessment and risk factor management for delirium in hospitalized older adults with and without dementia - Delirium information for family caregivers on hospital admission • A packet-sized laminated card of the revised DSD algorithm was	• Patient scenarios, interactive activities used as teaching and learning strategies to deliver content on delirium, dementia and DSD, assessment and risk factor management for delirium in hospitalized older adults with and without dementia, delirium information for family caregivers on hospital admission, revised DSD algorithm and delirium brochure • A facilitator used case studies to trigger participants to think about

	provided to participants to assist in applying knowledge to their practice • Delirium brochure were provided to participants to help providing delirium information to family caregivers on hospital admission and involve family caregivers in care of their older family members with delirium	DSD care in practice during workshops and on-site supporting
• A responsibility for own learning	• Participants were provided with a packet-sized laminated card of the revised DSD algorithm • Participants were provided with delirium brochure	• A facilitator assisted participants to use the packet-sized laminated card of the revised DSD algorithm in practice • A facilitator assisted participants to use the delirium brochure to involve family caregivers in delirium care of older adults
• The role of experience in learning	• Case studies with content aligned to common clinical scenarios were provided to participants • Discussion with on-site facilitator on delirium care in practice • The packet-sized laminated card of the revised DSD algorithm provided to participants with content to assist in thinking about issues in relation to each value in DSD • Delirium brochure were provided to participants to help providing delirium information to family caregivers on hospital admission and involve family caregivers in care of their older family members with delirium	• A facilitator used revised DSD algorithm to trigger participants to think about certain delirium care in practice both during workshops and on-site supporting • Interactive one-to-one or group discussions with on-site facilitator on issues raised through the implementation of the DSD algorithm in practice • A facilitator used case studies to trigger participants to think about delirium and DSD care in practice during workshops and on-site mentoring • Ongoing support focused participants on working collaboratively with care teams
• A readiness or applicability of the information to a real life situation	• Case studies with content aligned to common clinical scenarios were provided to participant • The packet-sized laminated card of the revised DSD algorithm provided to participants with content to assist in thinking about	• A facilitator used case studies to assist in understanding of the application of DSD algorithm in practice • A facilitator used case studies to trigger participants to think about delirium and DSD care in practice during workshops and ongoing support

	issues in relation to each value in DSD • Delirium brochure were provided to participants to help providing delirium information to family caregivers on hospital admission and involve family caregivers in care of their older family members with delirium	• Ongoing support focused participants on working collaboratively with care teams
• A motivation to learn	• Case studies with content aligned to common clinical scenarios were provided to participants to show relevance to their clinical practice to engender motivation to learn	• Visual, scenario, interactive activities used as teaching and learning strategies to deliver on dementia, delirium and DSD care • Ongoing support focused participants on working collaboratively with care teams • Voluntary participation
• Problem-centered learning with real life problems	• Case studies with content aligned to common clinical scenarios were provided to participants • A packet-sized laminated card of the revised DSD algorithm was provided to participants to assist in applying knowledge to their practice • Delirium brochure were provided to participants to help providing delirium information to family caregivers on hospital admission and involve family caregivers in care of their older family members with delirium	• A facilitator used case studies to assist in understanding of the application of delirium care in practice • A facilitator used revised DSD algorithm to trigger participants to think about delirium care in practice both during workshops and ongoing support • Ongoing support focused participants on working collaboratively with care teams

2.3. Study Design, Data Collection and Analysis

The facilitator's reflective field notes were undertaken using qualitative analytic procedures study. The extensive reflective field notes, recorded over the course of the study by the facilitator who provided workshops and ongoing support sessions, were qualitatively analyzed. The facilitator was asked to keep a journal for reflective comments about the perceptions of the educational intervention were implemented. The facilitator followed Gibbs' framework [22] when writing the reflections: Description; Feelings; Evaluation; Analysis; Conclusion; and Action Plan.

A process of data analysis similar to the analysis of other qualitative self-report data was followed. A critical appraisal of the content of the field notes was undertaken. The process was informed by Norwood's approach [23] to thematic analysis. The pattern of categories and the relationships between categories were identified and systematically considered using an inductive analysis process to allow themes to emerge from the data [23]. Themes were refined as the analysis process progressed through in-depth discussion with one nursing professor

who is specialized in qualitative research until distinct themes emerged. The names of the themes were chosen based on their clarity to present the overall sense of the reflective notes [23]. Four themes emerged from this inductive content analysis.

3. RESULTS

This analysis revealed four main findings and included: on-site application and guidance, teaching methods, visible progress, and challenges with organizational system. Each finding will be grouped as it relates to the first two research questions that framed this study.

3.1 Research question 1: What information is revealed concerning delirium educational intervention in facilitator's reflective notes?

Finding 1: On-site application and guidance

The understanding of and approach to delirium care in hospitalized older adults with and without dementia were reinforced well through the application of concepts and principles within the educational intervention at the coalface with the facilitator on site. The facilitator identified that they were able to address concerns and issues quickly to reduce any negative concerns: *'I would sit down with her and help her with how to use the revised DSD algorithm and delirium brochure in practice.'*

This on-site support and guidance also provided nursing staff with instant feedback that promoted their understanding of the delirium care and its importance to improving care with the use of revised DSD algorithm [20] and delirium brochure [21] : *'After 3 hour workshop, she is hesitant to try for herself using DSD algorithm in practice…we went to an older patient with dementia together and used the revised DSD algorithm to him* and an on-site meeting with nursing staff led the facilitator to conclude that this enabled them *'…starting to think of using the revised DSD algorithm and delirium brochure in delirium care practice.'*

Finding 2: Teaching methods

The reflective notes identified that a varied approach to the teaching of the delirium care was particularly valued by the participants in helping them understand the delirium care in older patients with dementia and at risk of delirium. The content of and methods used in the workshops enabled *'plenty of interaction….with the activities'*, a group to ask *'lots of questions and…think about delirium care that may be available…and reflect on older patients with and without dementia and how they changed when given opportunities.'*

The facilitator identified that using a combination of group and individual teaching moments was effective. Group approach to learning provided opportunities *'which work well in helping the nursing staff to gain information about delirium care and build relationships with each other'* that fostered *'collaboration…and a willingness to share that can be built on.'*

On the other hand, ongoing support sessions whether 'on the floor' provided focused teaching moments specific to the individual participants need: *'I were happy to have a chance to talk one-on-one about application of the revised DSD algorithm to practice.*' The revised DSD algorithm [20] and delirium brochure [21] proved to be a valuable teaching tool with facilitator' notes identifying the revised DSD algorithm [20] and delirium brochure [21] as *'helping people to focus….and clarify the delirium care for them', and 'read with great enthusiasm.'*

Finding 3: Visible progress

The facilitator noted that witnessing the positive outcomes in relation to both the progress (staff application of the delirium care in practice) and aims (enhanced delirium care) of the delirium education provided continued motivation for nursing staff to keep learning, and maintain their application of the revised DSD algorithm [20] and delirium brochure [21] to care practices and facilitators to persist with their methods of education. The facilitator believed that '*…improved knowledge…attitudinal change has occurred with nursing staff looking at and talking about what older patients with dementia and at risk of delirium need to be assessed and managed…,'*

and identified *'they have seen the benefit of good communication as they realize they are actually doing what we have been talking about.'*

3.2 Research question 2: What challenges and concerns do the facilitator encounter as she conducts the educational intervention?

Finding 1 Challenges with organizational system

The facilitator identified various challenges impacting on the progress and maintenance of the education throughout the 3 months program. Despite nursing staff positive evaluation of the teaching program and the outcomes of the application of new concepts to practice, inadequate management support such as time constraints, heavy workloads, shortage of nursing staff and busy daily routines impacted on their perceptions of the success of the education intervention. All participants reported to the facilitator that lack of time and some staff hindered their abilities to often apply new concepts to practice '*We have one nurse to care for more than ten patients during the day shift. I need to finish all the medications, vital signs, paper work and extra in time. It is difficult to assess mental status and risk factors for delirium in my daily routine.'*

4. DISCUSSION AND CONCLUSION

Overall, the results indicate that the educational program based on Knowles' assumptions [14] around adult learning met the identified aims. Inadequate management support impacted on the extent to which staff could actively engage in the education and its application to practice. The education process and methods stimulated thought interactive and reflective practice regarding the importance of delirium assessment and management and facilitators identified that nurses particularly found the ongoing support for 2 months provided on-hand guidance, support and feedback that was helpful in applying their knowledge about delirium care to practice. The literature strongly supports that adult learning methods facilitate active learning, which can enhance critical thinking [14, 24]. In the current study, strategies for adult learning included case method, role playing, discussion, selected presentations, and non-judgemental feedback from the instructors and colleagues. Through these strategies, nurses achieved a deeper understanding of delirium care by relating their learning to personal experience, re-examining existing practice, gaining new knowledge, and applying the knowledge in practice. In other words, the process involved new associations and integration of the concepts such that nurses would be able to apply the knowledge to new situations rather than rely on memorization [14]. It was found that the activities organized to meet identified learning needs within the face-to-fact workshop sessions and the on-site ongoing support assisted in the application of new concepts to practice in line with Spouse's argument [25].

In addition, the results of the current study identified a number of issues, in relation to inadequate management support, in particular inadequate nursing staff resources that involved time constraints, heavy workloads, shortage of nursing staff, and busy daily routines. Similarly, in South Korea and internationally, intensive care unit (ICU) RNs want to apply the Confusion Assessment Method (CAM)-ICU into practice, yet are constrained by inadequate nursing staff and a lack of time for them to introduce the CAM-ICU and adjust to using it in practice [26, 27]. Therefore, we should not take a simplistic view of the effect of education. We cannot assume that nurses will automatically apply new knowledge to their practice or change their existing practice after participation in an educational program. In order to successfully facilitate practice change, South Korean nurses clearly need not only appropriate education, but also adequate resources and support from managers and from all other health care professionals.

A limitation of this study was that the evaluation is the based on the perception of the facilitator who proivded the workshops and ongoing support through the relfective notes. However, as the refelction were based on Gibbs' framework [18], the notes provided detailed observations and examples to support conclusions drawn by the facilitator.

By focusing on on-site education and continuous guidance, support and feedback, the developed program maximized the potential of nursing staff to sustain quality delirium care over time, despite challenged regarding time, workloads and environment. Continued long-term practice change through an educational process, however, needs to be sustained through the commitment of long-term organizational and management support. It is argued, however, that long-term benefits of an application of an on-site educational program to improve nursing staff knowledge and practice has enormous potential to improve delirium care for hospitalized older adults with and without dementia. As such, future research specifically focusing on organizational level approaches to changing delirium care practice in hospital settings that include economic evaluation are needed.

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