

The Effect of Interactive E-learning on the Knowledge of ICU Nurses Regarding Delirium

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Abstract

Background & Aims: Delirium is one of the most acute and prevalent cognitive disorders with complex causes among hospitalized patients and is also considered to be a common issue in the patients admitted to intensive care units (ICUs) worldwide. As the patients admitted to ICUs are exposed to numerous life-threatening physiological diseases and health challenges, their care process is extremely difficult to nurses. As such, the management of delirium as an important component of the routine care of these patients is highly demanding and challenging for ICU nurses. The high incidence and prevalence of this disorder in ICUs imposes significant costs on the healthcare system of countries and is also a strain of care for nurses, which ultimately leads to numerous adverse consequences in the affected individuals. Despite the importance of this syndrome and availability of various screening tools, the care level of these patients by nurses is rather poor. Since the nursing team is a key element in ICUs and in constant contact with patients, nurses could play a key role in the prevention of the clinical consequences and management of delirium since the preventative strategies for the occurrence and development of delirium or shortening its duration is highly effective owing to the provided care by these healthcare professionals, who provide full-time care to critically ill patients. Lack of sufficient and effective knowledge regarding delirium is an important factor associated with poor nursing care to identify this disorder. Therefore, increasing their knowledge could help with the timely identification and accurate and optimal management of the disorder, which in turn prevent the permanent complications, disabilities, and cerebral dementia, lengthy ICU admission, and reducing the associated mortality. Although education is recognized as an important factor in delirium prevention and treatment strategies, the type and methods of education and use of various approaches to the training of nurses on delirium could also be effective in this regard. Today, the advancement in educational technology has prompted the use of new methods as an alternative to traditional methods. Considering the easy access to educational contents and use of interactive feedback mechanisms, interactive e-learning has been described as an alternative approach to the teaching of large groups and offers a more flexible and cost-effective method than traditional teaching methods. The present study aimed to assess the effects of interactive e-learning on the knowledge of ICU nurses regarding delirium.

Materials & Methods: This quasi-experimental study was conducted with a pretest-posttest design and a control group on 88 ICU nurses of two teaching hospitals affiliated to Lorestan University of Medical Sciences, Iran in 2019. The subjects were selected via counting sampling. Based on the sampling method and inclusion criteria of the study, the nurses were selected. After obtaining informed consent from the research units, Shahid Rahimi Hospital was selected as the intervention group, and Shohada Ashayer Hospital was considered as the control group. In order to prevent contamination, one hospital was selected as the intervention, and another was selected as the control. The intervention involved the use of interactive e-learning contents in the form of four outputs of the Storyline software with various definitions of delirium and its characteristics, clinical symptoms, and types of delirium (16 minutes), as well as the predisposing and accelerating factors of the disease and preventive methods (20 minutes). In addition, the duration of the treatment was 23 minutes, and the diagnostic strategies and screening tools were presented for 22 minutes, along with the questions of each ward. The educational contents were uploaded on the hospital site that was

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considered as the intervention environment, and its link was provided to the nurses of the intervention group for two months. Immediately before and two months after enrollment, the obtained data were assessed using the delirium knowledge questionnaire (DKQ) in both groups. After data collection, data analysis was performed in SPSS version 16 using independent and paired t-test, Chi-square, Fisher's exact test, and effect size.

Results: The knowledge scores of the ICU nurses and its dimensions were significantly higher in the intervention group compared to the control group after the interactive e-learning ($P < 0.001$). However, no significant differences were observed in the control group in this regard after the interactive e-learning compared to before the intervention ($P > 0.05$). In general, the effect of interactive e-learning on the knowledge of the intervention group (2.22 and 1.29) was 1.75, which showed the large effect of training on increasing the knowledge of the nurses in the intervention group compared to the control group. In addition, the changes in the total score of knowledge in the intervention group were more significant compared to the control group, so that education could increase the knowledge of the nurses. The higher effect size than 0.8 after the intervention in the total score and scores of the subscales of knowledge indicated the large impact of interactive e-learning on the increased knowledge of delirium and its subscales in the nurses.

Conclusion: The results of the study showed the positive effect of interactive e-learning on the knowledge of the nurses in the intervention group compared to the control group working in the ICUs of the research environments. Therefore, the use of interactive e-learning was effective in improving the knowledge of the ICU nurses, and this educational method is recommended for the training of health workers, especially nurses and nursing students. Although the changes in knowledge scores and subscale scores of delirium symptoms, signs, and consequences were positive in both groups, the increase in the scores was more significant in the intervention group compared to the control group, which could be attributed to interactive e-learning. Although the knowledge score was observed to decrease in both subscales of the risk factors and causes of delirium and disease management and prevention strategies in the control group, the changes in the knowledge scores of the intervention group increased after training in these subscales. Therefore, the decreased knowledge score in the control group may be due to the lack of interactive e-learning, while the increase in the scores of the intervention group was attributed to interactive e-learning.

Keywords: Knowledge, Delirium, Continuing Education, Distance Learning

Conflict of Interest: No

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