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The impact of delirium education through e-learning on outcomes in patients and nurses: an intervention trial

Submission date
02/05/2017

Recruitment status
No longer recruiting

Registration date
27/06/2017

Overall study status
Completed

Last Edited
31/01/2018

Condition category
Mental and Behavioural Disorders

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[X] Results
[ ] Individual participant data

Plain English summary of protocol

Background and study aims
Delirium is a disturbance in mental capabilities and attention that commonly occurs in older patients who are hospitalised. Nurses can play an important role in preventing and detecting this syndrome, however they have a lack of knowledge and skills to manage it. This results in patients declining in their function and health outcomes. Education of healthcare providers is a key component of multicomponent delirium strategies to improve delirium management and patient outcomes. Traditional educational initiatives are difficult to implement in daily practice. E-learning might be easier. Studies evaluating the impact of delirium education through e-learning on daily delirium care are scarce. The study aim is to evaluate the effect of a delirium e-learning tool for nurses on in-hospital prevalence, duration and severity of delirium or mortality in hospitalized geriatric patients, and geriatric nurses' delirium recognition and knowledge.

Who can participate?
Patients who were 70 years or older and admitted to the geriatric ward and nurses working on the participating geriatric ward.

What does the study involve?
The effect of nursing education about delirium through e-learning was evaluated on patient and nursing outcomes. A delirium e-learning tool - including 11 modules about delirium prevention, detection and management - was developed. All nurses of the participating ward receive the intervention, which includes a one-hour life information session about using the e-learning tool and the completion of six compulsory modules during a three-month learning period. The five other modules may be completed on a voluntary basis. This e-learning tool is implemented over three months between two periods of data collection in patients i.e. the non-intervention patient cohort (before group, consisting of usual care; 4 months) and the intervention patient cohort (after group; 4 months). In those patient cohorts, in-hospital prevalence, duration and severity of delirium and mortality up to 12 months after hospital admission were measured. Nurses' delirium-related knowledge and their ability to recognize delirium are assessed immediately before the educational period and four months after the implementation period.

What are the possible benefits and risks of participating?
Participating nurses may benefit from improved levels of delirium-related knowledge and recognition skills. Participating patients may have decreased risk for developing delirium or may have a lower delirium severity or shorter duration of delirium. There are no notable risks involved for participating patients or nurses.

Where is the study run from?
UZ Leuven (Belgium)

When is study starting and how long is it expected to run for?
January 2010 to December 2011

Who is funding the study?
PWO Flanders (Belgium)

Who is the main contact?
Professor Koen Milisen
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
Federal Agency for Medicines and Health Products (B32220097550, 09/12/2009).

Study information

Scientific Title
Effect of an Interactive E-learning Tool for Delirium on Patient and Nursing Outcomes in a Geriatric Hospital Setting: Findings of a Before-After study

Study objectives
A delirium e-learning tool for nurses has beneficial effects on the in-hospital prevalence, duration and severity of delirium and mortality in older patients, and on geriatric nurses' delirium knowledge and their ability to recognize delirium.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Medical Ethics Committee of the University Hospitals Leuven (Federal Agency for Medicines and Health Products, 09/12/2009, ref: B32220097550

Study design
Single-centre non randomised study

Primary study design
Interventional

Secondary study design
Non randomised study

Study setting(s)
Hospital

Study type(s)
Prevention

Participant information sheet
Not available in web format, please use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied
Delirium and staff education

Interventions
An online self-directed delirium educational (e-learning) tool for nurses was developed by the research team.

This tool consists of 11 modules (e.g. information about delirium specifics, delirium prevention /treatment strategies, use of screening instruments for delirium detection).

The intervention includes:
1. A one-hour live information session to offer nurses oral and written information about the use of the e-learning tool

2. The completion of six compulsory modules (e.g. ‘occurrence and consequences’, ‘clinical presentation’, ‘exercises in delirium recognition’, ‘predisposing and precipitating risk factors’, ‘screening for delirium, and ‘prevention of delirium’) during a 3-month learning period.

The five other modules can be completed on a voluntary basis. The tool remains available until the end of the study. Nurses can access the modules at any time using their personal log-in code. It takes between five and 15 min to complete one module. Nurses who do not complete the six compulsory modules within two months are encouraged by the head nurse to complete the tool. Additionally, a poster was displayed at the geriatric ward.

Participants are followed up to assess their knowledge of delirium and ability to diagnose delirium at four months to evaluate how well the programme works.

Intervention Type
Other

Primary outcome measure
1. In-hospital prevalence of delirium is measured using the Confusion Assessment Method (CAM) at days one, three, five, seven, 14 and 21 after admission to the geriatric ward. If the patient had delirium on one of the measurement points (positive CAM score), the patient was followed up daily until a negative CAM score was obtained
2. Duration and severity of delirium in patients is measured using the 7-item delirium index at days one, three, five, seven, 14, and 21 after admission to the geriatric ward
3. Duration of delirium in patients is measured as the number of days on which a positive CAM score was obtained

Secondary outcome measures
1. Mortality in patients is measured by the number of deaths while being hospitalised at the geriatric unit
2. Twelve-month mortality is measured as the number of deaths occurring within 12 months after admission, including cases of in-hospital mortality
3. Geriatric nurses' delirium-related knowledge is assessed with the 35-item true-false Delirium Knowledge Questionnaire (DKQ) at baseline and at the end of the 4 month after study
4. Geriatric nurses’ ability to recognize delirium is assessed with standardized ‘case vignettes’ at baseline and at the end of the 4 month after study

Overall study start date
01/02/2008

Completion date
31/12/2011

Eligibility

Key inclusion criteria
Patients:
1. Dutch speaking
2. 70 years or older
3. Consecutively admitted to the geriatric ward

Nurses:
All geriatric nurses of the participating unit.

Participant type(s)
Mixed

Age group
Mixed

Sex
Both

Target number of participants
142 patients, 71 in each patient cohort

Key exclusion criteria
Patients:
1. Severe hearing or visual problems
2. Very poor health condition (e.g. palliative patients, patients with unstable cardiac or respiratory problems)
3. Isolation because of infectious disease
4. Unable to hold a conversation
5. Readmitted during the study period
6. Expected discharge within 24 hours after admission

Date of first enrolment
02/01/2010

Date of final enrolment
31/12/2010

Locations

Countries of recruitment
Belgium

Study participating centre
UZ Leuven
Herestraat 49
Leuven
Belgium
3000

Sponsor information

Organisation
UC Leuven-Limburg

Sponsor details
Campus Liza
Schiepse Bos 5
Genk
Belgium
3600

Sponsor type
University/education

ROR
https://ror.org/03zq0dg86

Funder(s)

Funder type
Research organisation

Funder Name
PWO Flanders

Results and Publications

Publication and dissemination plan
Planned publications in a high-impact peer reviewed journal

Intention to publish date
01/01/2018

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be available upon request from koen.milisen@kuleuven.be

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	19/01/2018		Yes	No