



Literature Reviews

Developing and Testing an International Audit of Nursing Quality Indicators for Older Adults with Fragility Hip Fracture

MacDonald, V. Maher, A.B. Mainz, H. Meehan, A.J. Brent, L. Hommel, A. Hertz, K. Sheehan, K. (2018) *Orthopaedic Nursing* 37(2) 115-121 <https://doi.org/10.1097/NOR.0000000000000431>

Aim

To develop and test an audit process to identify the extent to which internationally accepted nursing quality care indicators for older adults with fragility hip fracture are reflected in the policies, protocols, and processes that guide acute care

Background

The incidence of fragility fracture is projected to increase globally in the coming decades. Extensive care is needed for these patients who can be frail and who often require major orthopaedic surgery and extended rehabilitation. Outcomes can be poor and quality of life is reduced by long term impaired mobility and function, loss of independence and increased morbidity and mortality. Care standards and outcomes are linked, so it is an international priority that evidence-based quality standards are consistently applied in all settings where patients with hip fractures receive care.

Design

Having previously identified evidence based best practice through a review of the literature, an international working group developed and published a series of care standards which informed the development of a Best Practice Care Standards Audit Tool. The tool sought to assess 12 nurse-sensitive quality indicators: ensuring early mobility, catheter-associated urinary tract infection prevention, pain management, delirium assessment and prevention, pneumonia prevention, constipation prevention and management, venous thromboembolism prevention, pressure injury prevention, care transitions and bone health.

Using a mixed methods approach, the audit tool was tested using two rounds of activity.

Participants

The first round involved a purposive sample of five hospitals from each of five countries (a total of 25 hospitals). Round 2 was conducted at 35 sites across seven countries: Australia, Canada, Denmark, Ireland, New Zealand, Sweden and the United States of America

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Data collection

In round 1, clinical leaders from each included hospital completed the audit tool and as well as a user experience survey about the audit tool. In the second round, the revised audit tool was completed by nurses in leadership positions at each site.

Data analysis

Descriptive analysis of the data from the audit tool testing was conducted.

Results

Respondents viewed the content of the audit tool as relevant and applicable for units caring for patients with fragility hip fractures. Although timing and frequency of implementation varied among and within countries, the identified quality indicators were reflected in most policies, protocols, or processes guiding care in the hospitals surveyed.

Relevance to clinical practice

Testing of the audit tool has indicated its relevance to practice in settings where care is provided to patients with fragility hip fracture. This will enable clinical leaders to identify, measure and deliver best practice for this group of vulnerable and frail patients. It will also allow them to use the results of audit to influence care resources and processes. The audit is also shown to be useful across international boundaries, indicating the value of international collaboration in efforts to improve care and outcomes following hip fracture, although cultural differences will need to be considered as the tool is disseminated more widely.

Association between dehydration on admission and postoperative complications in older persons undergoing orthopaedic surgery

Chan, H. Cheng, A. Cheung, S. Pang W-w, Ma W-y, Mok, L-c, Wong, W-k, Lee, D. (2018) *Journal of Clinical Nursing*, 27: 3679-3686 <https://doi.org/10.1111/scs.12513>

Aim

To examine the prevalence of dehydration on hospital admission and its association with postoperative complications in older people undergoing orthopaedic surgery.

Background

Dehydration is defined as a deficit in the total volume of body fluid that is usually caused by inadequate fluid intake or excessive fluid loss,

leading to intracellular fluid deficits that affect physiological function. Dehydration can be both acute and chronic and is preventable but is often missed by nurses.

Design

Retrospective documentary review

Participants

Patients aged 65 years and over and admitted for orthopaedic surgery to one acute hospital in Hong Kong between January 2013 and June 2013.

Data collection

The medical records of included patients were reviewed. Sociodemographic data were collected about each patient along with their; health status, laboratory results, post-operative care and one-month survival. Dehydration status was recorded based on the ratio of blood urea nitrogen to creatinine.

Data analysis

Data were analysed using descriptive statistics to summarise patient characteristics. Categorical and continuous variables relating to the dehydrated and not dehydrated groups were compared using Pearson's chi-square test and independent *t*-tests. Binary logistic regression modelling was used to identify factors associated with dehydration.

Results

A total of 210 records were included in the analysis which demonstrated that 21.8% of patients were dehydrated and 35.2% were at risk of dehydration. Significantly more women were in the dehydrated group. Those who were taking diuretic medications, had swallowing difficulties, had oedema, were tube fed, used incontinence products or were catheterised, had postoperative complications of the gastrointestinal, respiratory or cardiovascular systems and who died within 30 days were also more likely to be in the dehydrated group.

Relevance to clinical practice

Prevalence of dehydration on admission was high for patients in the orthopaedic unit studied. Subsequent surgery, and its physiological effects – especially in frail older adults - can worsen this situation. Under-treated dehydration leads to organ failure and death so its prevention and management are fundamental aspects of nursing care from admission to discharge. Evidence-based hydration pathways involving both simple and complex interventions are needed to help nurses ensure that such care is provided as part of the standard care process for every patient.

Evaluation of a nurse-led intervention to improve adherence to recommended guidelines for prevention of venous thromboembolism for hip and knee arthroplasty patients: A quasi-experimental study

Lockwood, R. Kable, A. Hunter, S. (2018) *Journal of Clinical Nursing*, 27(5-6) e1048-e1060. <https://doi.org/10.1111/jocn.14141>

Aim

To measure adherence to a nurse-led evidence-based venous thromboembolism (VTE) prevention programme (the intervention) compared to usual care.

Background

VTE is a potentially preventable complication of venous stasis and immobility following surgery and is a significant cause of

postoperative mortality. It is particularly common following orthopaedic surgery to the lower limbs and spinal surgery. VTE can lead to permanently impaired venous circulation, leg ulcers, pulmonary embolism (PE) and consequent disability and death. If evidence-based VTE prophylaxis measures are taken to prevent thromboembolism in high risk patients such as those undergoing orthopaedic surgery, rates can be significantly reduced. National evidence-based guidelines are in place around the world and nurses play an important role in ensuring their clinical implementation. However, this remains a challenge and rates of, and reasons for, poor adherence to guidelines need to be explored

Design

Quasi-experiment – one intervention study site and one control study site

Participants

Patients scheduled for hip and knee arthroplasty in two similar private hospitals in one Australian region were included in the study if their surgeon consented to their inclusion and the patient gave consent. All ethical guidelines were followed. A sample size of two hundred participants at each of the 2 hospitals was estimated.

Data collection

Nurse-led adherence to national clinical guidelines for VTE prevention was assessed through review of patient documentation using a specifically developed audit tool. VTE prevention measures, in keeping with existing clinical guidelines and including nurse-led components, were identified in the medical records. A post-discharge questionnaire, used in a previous study by other authors, was sent to patients to measure their adherence to VTE prevention instructions.

Interventions

A VTE prevention evidence-based guideline adherence programme was implemented at one of the two sites (intervention) and the other site had no intervention with usual practice maintained (control). The intervention included clinical leadership and nurse champions along with educational strategies to support nurses in adopting VTE risk assessment and prevention strategies in collaboration with the patient. At the second site (control) normal practice was maintained.

Data analysis

Fisher exact tests for categorical variables and *t*-tests for continuous variables were used to assess independence across the intervention and control groups. Between-group differences were explored using linear regression. An analogous process was used to examine post-discharge compliance.

Results

Of 440 potentially eligible patients, 196 were included in the intervention group and 187 in the control group. Most had undergone knee surgery. There was significantly higher overall compliance with VTE prevention guidelines at the intervention site (85%) in comparison to the control site (55%), demonstrating that adherence to guidelines at the study site was significantly higher than at the control site.

Relevance to clinical practice

Although there are significant limitations to this study due to the quasi-experimental design and lack of control of confounding variables between the two sites, the study demonstrates how a nurse-led leadership and education intervention can lead to improvements in practice through the implementation of evidence based guidelines in routine care. This can have a significant impact on patient outcomes, but sustaining such success long-term can be challenging.

The effect of listening to music on postoperative pain in adult orthopaedic patients

Schneider, M. (2018) *Journal of Holistic Nursing* 36(1): 23-32 <https://doi.org/10.1177%2F0898010116677383>

Aim

To determine if listening to music has a positive effect on pain scores and satisfaction in the postoperative adult orthopaedic patient and to expose nurses to this element of holistic nursing practice.

Background

Pain is a common occurrence after orthopaedic surgery and patients need multiple interventions and resources to enable management of their pain within an holistic nursing framework that supports an optimum healing and recovery environment. This may include the use of complementary and alternative therapies such as music and guided imagery for the management of symptoms. The literature review conducted as the prelude to this study demonstrated that music and guided imagery have shown much promise in pain management. Despite the fact that acute pain is common following orthopaedic surgery, studies demonstrating statistically significant decreases in postoperative pain in orthopaedic patients using such interventions are limited.

Design

Descriptive, comparative (pre-test/post-test) quasi-experiment.

Participants

A convenience sample of patients who had undergone orthopaedic surgery in a 55-bed acute orthopaedic and trauma unit. Following informed consent, all participants received standard post-operative care. They were approached on the first postoperative day and offered the opportunity to participate in the study. Each participant was given their own individual CD player with headphones and a CD with the same 10 pieces of instrumental piano music; each track lasting 3-4 minutes, as recommended by the literature. Verbal and written instructions were provided explaining the use of the CD player, when to listen to the music and how to complete the data collection logs.

Data collection

A self-reporting paper log was used by participants to report when they listened to the music and for how long along. Pain scores (0-10 scale) were also recorded before and after listening and consumption of pain medication. A satisfaction survey was also conducted on discharge to gauge satisfaction with the intervention itself and overall success of pain management.

Data analysis

Descriptive analysis was conducted along with paired sample *t*-tests.

Results

Forty-two patients (33 women and 9 men) participated in the study and a total of 65 completed logs were submitted. Surgical procedures included total knee replacement, total hip replacement, hip fracture repair, upper extremity fracture repair and ankle fracture repair.

Results indicated that average pain scores were lower following listening to music. Only four patients asked for additional pain medication. Listening time varied from 10 minutes to 90 minutes, but length of time listening did not have a significant effect. Participant satisfaction with the intervention was high.

Relevance to clinical practice

Despite the small sample and quasi-experimental approach which limit

the validity and reliability of the study, it is thought provoking. Healthcare staff need to explore alternatives to pain medication in order to be sure of music therapy is an inexpensive intervention that can be individually tailored to patient needs and is inexpensive. Modern technology can be used. Patients, however, need guidance to understand the benefits of listening to relaxing music. More studies of such interventions for orthopaedic and trauma patients are needed using more robust methods.

Patients' perceptions and experience of living with a surgical wound healing by secondary intention

McCaughan, D. Sheard, L. Cullum, N. Dumville, J. Chetter, I. (2018) *International Journal of Nursing Studies* 77: 29-38 <http://dx.doi.org/10.1016/j.ijnurstu.2017.09.015>

Aim

To explore patients' views and experiences of living with a surgical wound healing by secondary intention.

Background

Some surgical wounds, such as those created by orthopaedic surgery, fail to heal by 'primary intention' (wounds that heal with edges held together with sutures and other wound closure materials) because of failure of the healing process. These wounds must then heal by 'secondary intention' – with the wound open to enable it to heal from the base upwards. Such wounds can be large, deep, painful, malodorous, often produce copious amounts of exudate, are easily infected and can take many weeks or months to heal. The impact on patients' lives is not well understood.

Design

Qualitative descriptive

Participants

The purposive sampling process recruited 20 participants to the study who had at least one surgical wound healing by secondary intention, from acute hospital and community settings in two locations in the north of England. The sample was diverse and included patients of different ethnic backgrounds, ages and gender who had wounds of varying duration from general, vascular or orthopaedic surgery procedures.

Data collection

Semi-structured interviews were conducted in participants' own homes and were led by a topic guide. Interviews lasted approximately 1 hour and were audio-recorded and transcribed verbatim.

Data analysis

Data generated from the transcribed interviews were thematically analysed using the steps of the 'Framework' approach to analysis. These included; familiarisation with the data; development of a coding scheme; coding; charting and cross comparison of data and interpretation of identified themes.

Results

Eight themes were identified and are summarised as follows:

- 1) Initial reactions: Participants reported shock, alarm and disbelief. More extensive open wounds were more distressing. The sudden, unanticipated and extensive nature of wounds were particularly distressing issues.
- 2) Wound related factors: Pain, reduced mobility, wound exudate, odour, difficulty with personal hygiene, reduced appetite and

disrupted sleep were all reported to have a negative and frustrating impact on daily life and functioning.

- 3) Expectations of wound healing: Lack of information and understanding of the process of healing, set-backs and infection led to fear and anxiety that the wound would never heal. Patients expectations of healing are often at odds with those of clinicians and conflicting information was a significant issue.
- 4) Psychosocial aspects: Open wounds led to dependency, disengagement from the wider community, being confined to home and suffering social isolation. Normal life of both patients and families was disrupted and low mood, depression and emotional problems were common.
- 5) Financial repercussions: Participants were often unable to work because of the impact of their open wound with a subsequent impact on personal and family finances.
- 6) Supportive role of others: The role of families, friends and others in supporting those with open wounds was described as crucial in terms of emotional and practical support.
- 7) Service provision: Contact with both hospital and community

services was prolonged and was most valued when patients were listened to and informed, but experience was often that clinicians were rushed in interactions with patients and information giving was limited.

- 8) Treatments for open surgical wounds: Participants experienced a range of wound management interventions including; negative pressure wound therapy, debridement procedures, skin grafting and various wound dressings.

Relevance to clinical practice

The presence of an open wound healing by secondary intention presents additional challenges for orthopaedic and trauma patients. Along with wound assessment and wound healing interventions, caring for patients with an open or dehisced (broken down) surgical wound requires additional consideration of the devastating impact of such wounds on their lives. Care needs to be focused on these needs and ensuring that enough social and psychological support is in place along with appropriate information and education.