



## Literature Reviews

### The accuracy of paediatric limb radiograph interpretation by nurse practitioners in a single centre

Aitkenhead, A. Lee, G.A. (2019) International Emergency Nursing (45) 36-42 <https://doi.org/10.1016/j.ienj.2019.03.001>.

#### Aims

The aim of this study was to compare the accuracy in interpreting isolated paediatric limb radiographs between nurse practitioners in the emergency department and consultant radiologists.

#### Background

Nurse practitioners are an integral part of the urgent and emergency care workforce in the United Kingdom providing safe and effective care. Despite this, there is limited research that has assessed the ability of nurse practitioners to correctly interpret isolated paediatric limb injury radiographs in the urgent and emergency care environment.

#### Design

Retrospective, single-centre service evaluation

#### Sample and setting

Thirteen adult registered nurse practitioners with various backgrounds and qualifications assessed 296 paediatric patients with isolated limb injuries at a nurse-led urgent care centre in London, United Kingdom.

#### Data collection

All clinical presentations at the urgent care centre over a 3-month period from September to November 2017 were reviewed. The clinical records of 296 paediatric patients (aged 2–15) who received a peripheral limb radiograph were analysed to collect information about patient demographics, mechanism of injury, nurse practitioner diagnosis (based on examination and interpretation of radiographs) and the formal radiologist report. The nurse practitioner interpretation of each radiograph was classified as: definite fracture, possible fracture or no fracture. This was compared to the final radiologist report (considered the gold standard) to calculate the sensitivity and specificity of nurse practitioner radiograph interpretation.

#### Data analysis

Sensitivity and specificity of the nurse practitioner interpretation were calculated when compared to the radiologist's report. Sensitivity and specificity are measures of how accurately a test identifies the correct diagnosis of a condition – in this case, a fracture. Sensitivity is defined as the proportion of true positives that are correctly identified using the test and specificity is the proportion of true negatives that are correctly identified by the test. Sensitivity is calculated as  $TP + FN/TP$  and specificity is calculated as  $TN + FP/TN$ . In order to calculate sensitivity and specificity, all radiographs that were reported as 'Possible' by the nurse practitioners were included in the calculation as a positive result.

#### Results

Nurse practitioners reported a total of 94 radiographs (32%) as definite fracture, 176 (59%) as no fracture and 26 (9%) as possible fracture, compared to radiologists who reported 71 (24%), 218 (74%) and 7 (2%) respectively. Two hundred and forty two radiographs (82%) were correctly identified by nurse practitioners, while 54 (18%) were incorrectly interpreted. The sensitivity of the nurse practitioner limb radiographic interpretation was 92%, with a specificity of 78%. Only nurse practitioners assess and diagnose such injuries in the unit in which the study took place, so a comparison between diagnosis by these practitioners and medical practitioners was not made.

#### Relevance to clinical practice

The findings confirm the clinical and diagnostic skills of adult nurse practitioners in the interpretation of isolated paediatric limb radiographs. The authors suggest that, with appropriate education and training, such practitioners could provide a safe and effective service.

### Routines of resistance: An ethnography of the care of people living with dementia in acute hospital wards and its consequences

Featherstone, K. Northcott, A. Bridges, J. (2019) International Journal of Nursing Studies 9 53-60 <https://doi.org/10.1016/j.ienj.2019.03.001>

#### Background

Despite the increasing number of people living with the dementia being cared for in acute hospitals, there is little research examining resistance, refusal or rejection of care by people living with dementia who are being cared for in acute hospital wards.

#### Aims

To explore the ways resistance to care manifests within the acute setting and is understood, classified and, subsequently, managed by ward staff.

#### Design

Ethnography

#### Sample and setting

Participants were people living with dementia and nursing team members (registered nurses and healthcare assistants) on participating wards. The settings for the study were acute medical units and trauma and orthopaedic wards in five NHS hospitals in England and Wales.

#### Data collection

Observational fieldwork and ethnographic interviews were conducted over a period of 20 months (155 days of non-participant observation (minimum 2 h, maximum 12 h, total hours: 680). Data collection focused on staff delivering care to patients with dementia. Interviews were conducted with patients, visitors, and staff working in and visiting the ward settings.

### Data analysis

Data collection and analysis drew on the theoretical sampling and constant comparison techniques of grounded theory.

### Results

The study found that resistance to care by people living with dementia was a routine and expected part of everyday care in the participating acute hospital settings. The routine of the ward (for example, mealtimes, medication rounds, planned personal care) had a major impact on patient and staff experiences and behaviours. The culture of rigid routine often led to patients with dementia resisting nursing care. Staff priorities were based on the timetables of the institution and the high value placed on efficiency and reducing perceived risks to patients. This also led to a focus on the delivery of essential everyday planned care rather than individual patient need or mood in that moment, a situation that appeared to trigger resistance of patients to care interventions.

### Relevance to clinical practice

It is difficult for nurses to respond to the needs of people living with dementia in acute care settings. The routines and drivers are focused on efficiency and risk reduction and individualised care for people with dementia is rarely a priority in such settings. The authors of the paper are critical of clinical leadership. They propose that cycles of resistance in response to organisationally mandated timetables of care can result in poor care experiences for patients, and emotional and physical burnout for staff. More research is recommended that considers how institutional goals can be better aligned to needs of a people living with dementia who are hospitalised.

### No role for antiseptics in routine pin site care in Ilizarov fixators: A randomised prospective single blinded study

Subramanyam, K. Mundarggi, A. Portarlanka, R. Kanchandiani, P. (2019) *Injury* 50 770-776 <https://doi.org/10.1016/j.injury.2019.01.03>

### Background

Pin site infection is a common complication of external fixation and is painful and distressing for patients.

### Aim

To examine if use of antiseptics was better than a control and whether daily dressing was better than weekly dressing in regular pin site care in preventing external fixator pin site infection.

### Design

Randomised controlled trial with four study intervention arms; one group acted as control and the other three allotted to routine use of three different antiseptics. Participants were randomised to receive regular pin site care alone (30 patients, 638 pin sites) or with additional application of povidone iodine (27 patients, 561 pin sites), silver sulfadiazine (27 patients, 570 pin sites) and chlorhexidine (30 patients, 594 pin sites). The pin tracts were sub-randomised to receive daily (1212 pin sites) or weekly (1151 pin sites) dressings.

### Sample and setting

One hundred and fourteen patients (with a total of 2363 pin sites between them) were included in the study which took place in one tertiary teaching hospital in India.

### Data collection

All participants were followed up weekly and assessed for evidence of infection using the Dahl (1994) pin site classification. It is important to note that that aims to diagnose pin site infection, this has not been studied and, therefore, cannot be considered a valid and reliable way to identify/diagnose pin site infection. This puts the findings of the study at risk (see implications for practice below). The assessment of outcome was blinded.

### Data analysis

The data were analysed using IBM SPSS Statistics, Version 22. Continuous data with normal or skewed distribution were reported as mean (and SD) and median (and interquartile range (IQR)), respectively. Normality was assessed using a D'Agostino-Pearson test, Kruskal Wallis test was used to compare continuous variables with skewed

distribution, while categorical data were reported as numbers (proportion). Pearson's chi square test and independent t-test were used to compare the categorical variables between the study groups. p value < 0.05 was considered statistically significant.

### Results

The authors claim that pin site infection rate days per 1000 pin site days observed were marginally less in the chlorhexidine group, but was not statistically significant compared to other antiseptics and control group. The daily dressing category appeared to show slightly less pin site infection days rate within each group and overall, but this was also not statistically significant. Methicillin Sensitive Staphylococcus aureus was the most common bacterial pathogen isolated.

### Relevance to clinical practice

The authors claim that the "...use of antiseptics does not offer any advantage in regular pin site care" and that "... daily pin site care is not superior to weekly pin site care". However, the results of this study should be interpreted with caution. The study has been reviewed here as it illustrates some of the difficulties of conducting research into which methods of pin site care best prevent infection for patients with external fixators and demonstrates how important it is to be critical of the claims of research studies.

The authors have not used a valid and reliable measure for infection. This means that the findings of the study can not be certain. No validated tool for identifying infection has, to date, been published. This is a situation which makes it difficult to conduct valid and reliable trails of pin site care since it is not possible to be certain what is a pin site infection and what is some other kind of pin site state caused by an inflammatory reaction to the pin/wire, cleansing medium or other irritants. The study has also been conducted on a relatively small number of patients in a single hospital so the results cannot be considered generalisable to other settings.

### Patient Perceptions of the Safety of Outpatient Total Knee Arthroplasty

Adelani, M. Barrack, R. (2019) *The Journal of Arthroplasty*, 34 (3) 462-464. <https://doi.org/10.1016/j.arth.2018.11.030>

### Background

Outpatient total joint arthroplasty has become popular as a method for saving money through lower hospital costs, especially in the USA. Some research suggests that patient outcomes and complication rates are the like those for arthroplasty surgery with a hospital stay. Some studies, however, have found higher rates of complications following outpatient surgery and the issues are still the subjects of considerable debate. However, This does not consider the patient perspective and has focused on the views of surgeons, and patient perception of the safety of outpatient total joint arthroplasty is not well understood. Outpatient surgery affords limited opportunity for expert nursing and therapy care to ensure patient safety and recovery.

### Aim

To assess perceptions of the potential benefits of and barriers to outpatient total knee arthroplasty among a cohort of patients who have recently undergone the procedure.

### Design

Cross-sectional survey

### Sample and setting

Patients who had previously undergone unilateral primary total knee arthroplasty between March 1, 2017, and September 30, 2017 at one hospital in the USA.

### Data collection

Participants who had previously undergone total hip or total knee arthroplasty (with a hospital stay) were sent a questionnaire, in which they were asked about their perceptions and prior knowledge regarding outpatient total knee arthroplasty, their perceived ability to undergo the procedure as an outpatient, and their perceived risks and benefits to outpatient surgery. Sending the survey to patients who had experienced arthroplasty surgery as an inpatient gave the researchers the

opportunity to explore the problems anticipated by people who had experienced surgery as an inpatient – but retrospectively considered their experience in the light of imagining if they had had day surgery.

#### *Data analysis*

The data from the questionnaire were analysed and summarised using descriptive statistics.

#### *Results*

Three hundred forty-six patients completed the survey. Over 70% of patients did not think that they would be able to undergo total knee arthroplasty as an outpatient. Their primary concerns were; pain, being able to go to the bathroom, and falls.

#### *Relevance to practice*

The patients in this study largely told the researchers that they would not have felt safe undergoing total knee arthroplasty on an outpatient basis. Such concerns can be argued to be relevant to the domain of nursing and therapy practitioners. These patient perceptions need to be considered when planning future arthroplasty services, especially those with either a very short stay or no stay in hospital at all. Reducing length of hospital stay to zero potentially results in additional stress and anxiety for patients which can impact on the outcomes of surgery as well as other aspects of their lives.

### **Promoting evidence-based urinary incontinence management in acute nursing and rehabilitation care – a process evaluation of an implementation intervention in the orthopaedic context**

Nyman, M. Forsman, H. Wallin, L. Ostaszkiwicz, J. Hommel, A. Eldh, A. (2019) *Journal of Evaluation in Clinical Practice*, 25, 282-289. <https://doi.org/10.1111/jep.12879>

#### *Background*

The risk of developing urinary incontinence increases with age and is known to be linked with hip surgery. Understanding of the factors that might promote evidence-based practice in assessment and interventions for patients with urinary continence in orthopaedic There has been limited focus on factors that promote evidence-based UI practice in the orthopaedic context

#### *Aim*

The aim of this study was to evaluate the implementation of an intervention to support evidence-based practice for patients with urinary incontinence aged 65 or older who were undergoing hip surgery.

#### *Design*

Process evaluation

#### *Sample and setting*

Orthopaedic units in two hospitals in Sweden

#### *Data collection*

A intervention was implemented over a three month period to facilitate the implementation of urinary incontinence knowledge in orthopaedic units in 2 hospitals in Sweden. Each unit appointed a multidisciplinary team of nurses and physiotherapists or occupational therapists to facilitate the implementation. The teams were supported by external facilitators who shared knowledge about urinary incontinence and implementation science. Interviews, nonparticipant observations, and audits of patient records were conducted.

#### *Data analysis*

Data from the interviews were analysed with qualitative content analysis. Data from the observation notes were analysed using the same matrix as for the interviews. The medical record audit data was analysed with descriptive statistics.

#### *Results*

Prior to the intervention, there were no guidelines regarding urinary incontinence in use. The intervention raised awareness of urinary incontinence risks associated with hip surgery. As facilitators shared information with their peers, staff awareness of urinary incontinence increased. The teams of facilitators state that they needed additional time and support from managers to implement evidence-based urinary incontinence care. A management initiative triggered by the intervention increased the documentation of urinary incontinence and urinary problems in one unit.

#### *Relevance to practice*

Managing urinary incontinence for patients who are admitted to hospital with a hip fracture or for hip surgery is a fundamental aspect of effective care. To promote evidence-based practice regarding best practice for older people in hospital care, there is a need to better understand strategies that successfully facilitate knowledge implementation. This study suggests that a multi-professional team approach is promising for working towards evidence-based management of urinary incontinence.