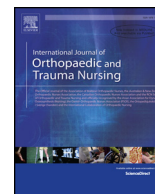




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LITERATURE REVIEWS

1. Assessment of theatre shoe contamination in an orthopaedic theatre

Clesham K Ryan P Murphy C (2018) *Journal of Hospital Infection, In Press* doi: 10.1016/j.jhin.2018.03.009

1.1. Aim

To assess the presence of bacteria that cause prosthetic joint infection (PJI) on theatre shoes, the presence of blood on shoes and the association between the presence of bacteria and degree of visible splatter.

1.2. Background

In orthopaedic surgery, contamination of the surgical site can result in the development of PJI leading to serious consequences for the patient. Protective clothing is one measure to reduce the risk of contamination. Organisms responsible for infections have been found on theatre shoes worn by operating department staff but there is an absence of guidance about correct use and management of footwear from a hygiene perspective.

1.3. Design

Cross-sectional single-centre study

1.4. Data collection

The study was performed in an orthopaedic operating theatre in a university teaching hospital in Ireland. Twenty pairs (40 shoes) of theatre shoes from the male locker room were sampled at the end of a day. Photographs of the shoes were taken to assess blood splatter. The presence of blood was determined using faecal occult blood testing kits. Swabs were obtained from each shoe and incubated.

1.5. Data analysis

Computer software was used to analyse the images to measure the percentage of blood splatter on each pair of shoes. Agar plates were observed for bacterial growth and pathogenic species were recorded.

1.6. Results

Faecal occult blood tests were positive in 32 of 40 shoes (80%). Sixty-five percent of the shoes tested harboured coagulase-negative staphylococci (CoNS). Multiple species of CoNS were cultured

including: *S. haemolyticus* (30%), *S. epidermidis* (15%), *S. hominis* (15%), *S. sciuri* (5%), *S. cohnii* (5%), *S. capitis* (5%), and *S. warneri* (5%). Named and unnamed shoes were compared. Unnamed shoes in the locker room were assumed to be communal shoes, used on a more frequent basis by students and visitors to theatre. Meticillin-susceptible *S. aureus* (MSSA) and *S. capitis* were found in significantly more unnamed shoes than named. There was no difference between groups for MRSA, *Enterococcus faecalis*, *Enterococcus faecium*, or other CoNS. No difference was found between shoes stored on top of lockers and those on the floor.

1.7. Relevance to clinical practice

The results suggest that some of the most widely implicated organisms in PJI are found on theatre shoes. Many measures are in place to minimise the risk of contamination in orthopaedic theatres, and strict adherence to hygiene and protective clothing is required on entering departments. However, insufficient attention is paid to theatre shoes, and recommendations are required for their management.

2. Effects of nurse-led lower extremity strength training on knee function recovery in patients who underwent total knee replacement

Lin, Y- Lee S-Y, Sue W-R, Kao, C-C, Tai, T-W, Chen, T-B (2018) *Journal of Clinical Nursing*, doi: 10.1111/jocn.14368

2.1. Aim

To examine the effects of nurse-led lower extremity muscle strength training (LEMST) on knee function recovery and quality of life (QoL) in patients who underwent total knee replacement (TKR)

2.2. Background

Following TKR surgery patients experience reduced knee function with a subsequent effect on QoL. Although the benefit of physical activity following TKR is well documented, patients rarely have a long-term, home-based exercise programme. The value of exercise training on functional recovery has not often been studied and it is unusual for nurses to lead such programmes.

2.3. Design

An experimental longitudinal study; participants were randomly assigned to a training (intervention) group, who were taught LEMST, or non-training (control) group. LEMST involves a series of 'mini-squat training' exercises designed to strengthen the quadriceps femoris muscles.

<https://doi.org/10.1016/j.ijotn.2018.05.008>

1878-1241/

2.4. Data collection

A total of 200 participants (training group $n=100$ and non-training group $n=100$) completed the 3-month study. Daily exercise record sheets were completed by family caregivers to indicate the participants' engagement with the exercise programme. At baseline and at two weeks and 1, 2 and 3 months, all participants' knee function and QoL were assessed using the Knee Injury and Osteoarthritis Outcome Score (KOOS) in which higher scores indicate higher levels of knee function.

2.5. Data analysis

The chi-squared test was used to examine the differences in scores between the training and non-training groups. Generalised estimation equations (GEEs) were used to analyse repeated measures of knee function and QoL at each time point and to identify between-group differences.

2.6. Results

All participants' pain and symptoms improved, but ADL and sport and recreation scores impacted in the short-term after the TKR surgery and then gradually improved after one month. The KOOS scores did not differ significantly at based-line and at two weeks. At the other time points, however, the scores were significantly different between the two groups; the training group knee function and QoL improved more than those of the non-training group in the three months after TKR.

2.7. Relevance to clinical practice

The results of the study suggest that the LEMST was an effective intervention in improving patients' function and QoL following TKR. As a nurse-led intervention, this highlights the important role nurses have, with a potential impact on outcomes, in supporting patients in exercise following arthroplasty surgery as part of the multi-disciplinary team, particularly alongside therapists.

3. Supporting patient in reducing postoperative constipation: fundamental nursing care – a quasi-experimental study

Trads M, Deuthch SR, Pedersen PU (2018) Scandinavian Journal of Caring Sciences, doi: 10.1111/scs.12513

3.1. Aim

To test the efficacy of a nursing intervention for patients with hip fractures, based on 'Active Patient Involvement' in preventing constipation after surgery.

3.2. Background

Constipation is a common problem with significant nursing implications in surgical patients. Orthopaedic patients, because of immobility and use of codeine and opioid analgesics, are at particularly high risk with as many as 63.3 patients with hip fracture reporting constipation and not having reached their normal pattern of defaecation 30 days after their surgery. Constipation can lead to abdominal pain, nausea, straining and discomfort and increases the risk of postoperative complications, increasing length of stay. The risk factors for constipation are complex. Actively involving patients in preventing constipation can help to manage the problem both prior to and after discharge.

3.3. Design

This was an efficacy per protocol study, using a quasi-experimental and pre-test post-test design. One group of patients, following hip

fracture requiring surgery at a Danish hospital formed a control group and a successive group formed the intervention group. The intervention group received specific nursing intervention aimed at actively involving them in the care to prevent constipation including; a structured admission interview and assessment (including identification of individual risk factors for constipation), continued daily dialogue about defaecation, individual care planning for prevention of constipation and using the principles of primary nursing.

3.4. Data collection

All patients followed the same clinical pathway regarding surgery, recovery, pain management and standard constipation prevention with lactulose and macrogol. Participants were interviewed on admission, on the day of discharge and 30 days after surgery to determine their normal and current defaecation patterns and problems. Dietary fibre and fluid intake were recorded during the hospital stay. Data were recorded using a questionnaire that included the Constipation Risk Assessment Scale (CRAS), the Bristol Stool Scale (BSS), prolonged or difficult defaecation, time of return to normal pattern of defaecation and cognitive status.

3.5. Data analysis

Independent samples t-tests were performed to test for differences between the control and intervention groups regarding age, cognitive state, fluid and fibre intake and risk of constipation. Chi-square tests were performed to test for differences in gender and for the presence of constipation. Binary logistic regression was used to explore potential relationships between constipation and fibre intake, fluid intake, mobility and group allocation.

3.6. Results

A total of 186 patients with hip fracture were included in the study – 100 in the control group and 86 in the intervention group. At 30 days, constipation rates were significantly lower in the intervention group than for those in the control group. Fibre and fluid intake was also significantly higher in the intervention group, with liquid and fibre intake both having a significant effect on decreasing rates of constipation.

3.7. Relevance to clinical practice

Constipation is a common and serious problem for all orthopaedic patients. Nursing care needs to be focused on this fundamental aspect of patient need. Actively involving patients in their care so that they understand the need to consume increased fluid and fibre in order to prevent constipation is central to this, as is the interaction between nursing staff and patients.

4. Actual and perceived nursing workload and complexity of patients with total hip arthroplasty

Olthof M, Stevens M, Dijkstra B, Bulstra SK, Van Den Akker-Scheek I (2018) Applied Nursing Research 39 1995-1999 doi: 10.1016/j.apnr.2017.11.023

4.1. Aim

To gain insight into the relationship between patient complexity and nursing staffs' actual and perceived workload at an orthopaedic ward caring for patients following Total Hip Arthroplasty (THA).

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