2012

The effect of an evidence based bowel protocol on time taken to return to normal bowel function in post operative total hip and total knee replacement patients

Gail Ross-Adjie
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Publication Details
Ross-Adjie, G. (2012). The effect of an evidence based bowel protocol on time taken to return to normal bowel function in post operative total hip and total knee replacement patients (Doctor of Philosophy (PhD)). University of Notre Dame Australia.
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THE EFFECT OF AN EVIDENCE BASED BOWEL PROTOCOL ON TIME TAKEN TO RETURN TO NORMAL BOWEL FUNCTION IN POST OPERATIVE TOTAL HIP AND TOTAL KNEE REPLACEMENT PATIENTS

A thesis submitted in fulfilment of the requirements for the degree of

PhD in Nursing

School of Nursing and Midwifery

The University of Notre Dame Australia, Fremantle

Gail Ross-Adjie RN MClinNurs

22 October 2012
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Abstract

Total hip and knee replacement operations are one of the most commonly performed orthopaedic procedures in Australia. It is estimated however that up to 65% of patients will experience some degree of opioid-related bowel dysfunction in the post operative period. Often considered a mild and self-limiting problem, constipation can lead to significant morbidity and occasional mortality. Several clinical incidents and a lack of robust evidence to guide bowel management in this cohort was the impetus for this study.

This cluster randomised study sought to evaluate the Murdoch Bowel Protocol©, a simple nursing intervention based on the administration of polyethylene glycol (Movicol®) titrated to Bristol Stool Chart type. The Neuman Systems Model was the theoretical framework used to guide this study. The hypothesis was that patients who undergo a knee or hip replacement and receive the study bowel protocol will experience a statistically significant reduction in time taken to return to normal bowel function compared with patients who receive standard bowel management.

Three hundred and thirty one patients were recruited across seven hospitals in two Australian states over a 13 month period. Five hospitals were randomised as controls, two hospitals as interventions. Data was collected from all patients at three intervals: pre-admission, during admission and post discharge. Control participants (n = 171) received post operative bowel management as per that hospital or doctors usual regime whilst intervention participants (n = 160) received post operative bowel management as per the Murdoch Bowel Protocol©.

Inferential statistics confirmed several highly statistically significant results as well as clinically significant outcomes. Patients treated with the Murdoch Bowel Protocol© returned to normal bowel function more quickly than those
treated with ad hoc post operative bowel regimes \((p = 0.000)\). In addition intervention patients were more than seven times more likely than controls to return to normal bowel function by day five post operatively \((p = 0.000)\). Age, gender and length of pre-operative fasting were not found to influence this result. Type of anaesthetic was significant with patients who received combined regional and general anaesthesia returning to normal bowel function around two days less than those who received a general anaesthetic \((p = 0.014)\). Type of operation was also significant with total knee replacement patients taking on average one extra day to return to normal bowel function \((p = 0.027)\). Use of the generalised linear mixed model confirmed no cluster effect. These results confirm and support the study hypothesis.

These results support practice changes not only for hip and knee replacement patients but for other patient groups who experience opioid induced bowel dysfunction. Further research will determine whether the protocol is as efficacious in these patient groups.
Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

i. Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher learning;

ii. Contain any material previously published or written by another person except where the reference is made in the text; or

iii. Contain any defamatory material.

Signature: ___________________________________

Gail Ross-Adjie

Date: 22 October 2012
Acknowledgements

I wish to express my gratitude and thanks to the following people and organisations without whom this doctoral work would not have been possible.

Firstly I would like to thank my husband, children, friends and family for their unwavering support while I have been undertaking this study.

My sincere thanks to my supervisors Professor Leanne Monterosso RN RM PhD and Professor Max Bulsara PhD for their ongoing support, guidance, encouragement and assistance. My thanks also to Professor Selma Alliex RN PhD who encouraged me to undertake this study and supported my early efforts.

I would like to acknowledge the support of St John of God Health Care, in particular Group Director of Nursing Kate Birrell, Directors of Nursing from all participating hospitals and nursing caregivers involved in the study. The study would not have been possible without your help. I am also grateful to Adam Coleman Director of Nursing at St John of God Murdoch Hospital for supporting my leave whilst writing up this study.

I would also like to acknowledge and sincerely thank the Nurses Memorial Centre Melbourne and Miss Rosemary Norman whose generosity in enabling the Reginald `Babe’ Norman scholarship supported my PhD.