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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

Table of Contents

Contents	Page
Title	i
Table of contents	ii
Appendices	vii
List of tables	viii
List of figures	ix
Abstract	x
Declaration	xii
Acknowledgements	xiii
Chapter 1 – Introduction	1
Background and Context	1
Incidence of Constipation	3
General population	3
Incidence in orthopaedic patients	3
Causes	4
Complications	4
Statement of Purpose	5
Hypotheses	5
Definition of Terms	6
Significance	8
Summary and Organisation of Thesis	9

Chapter 2 – Review of the Literature 10

Part One 11

Search Strategy 11

Normal Bowel Function 11

Incidence of Constipation 12

Role of opioid analgesia 15

Mechanism of opioid action 15

Psychoactive drugs 17

Gender incidence 19

Summary of Incidence 19

Causes and Contributing Factors 19

Gender differences 19

Age, fluid and fibre intake and exercise 21

Race and socioeconomic status 24

Summary of Causes and Contributing Factors 25

Complications 25

Impact on quality of life 25

Complications 26

Reported deaths 27

Economic burden 28

Summary of Complications 31

Treatment Modalities 31

Traditional laxatives 31

Alternative therapies 37

New treatments 40

Summary of Treatment Modalities 41

Local, National and International Constipation Guidelines 41

Local guidelines 41

National guidelines 42

International guidelines 44

Summary of Guidelines 46

Summary of Literature Review 47

Part Two

Baseline Audit 48

Development of the Murdoch Bowel Protocol© 51

Validity of the Murdoch Bowel Protocol© 56

Summary of Development of the Murdoch Bowel Protocol© 62

Chapter 3 – Frame of Reference 63

Summary of the Chapter 73

Chapter 4 – Methods 74

Design 74

Setting 77

Sample 78

Instrument and Materials 84

Data Collection 85

Training 85

Procedure 87

Interrater Variability 89

Data Analysis 90

Analysis between control and intervention groups 90

Ethical Considerations 91

Chapter 5 – Results 94

Data Analysis 94

Baseline comparison of complete and incomplete cases 97

Baseline comparison of control and intervention group variables 98

Group effect for post-operative variables 100

Comparison of days to normal between groups 101

Group effect for post discharge variables 102

Logistic regression for normal bowel function at day five 104

Generalised linear model for days to normal bowel function 106

Effect of cluster randomisation technique 108

Chapter 6 – Discussion 110

Summary of Findings 112

Comparison of complete and incomplete cases 112

Baseline comparison of variables 112

Effect of possible confounding post-operative variables 114

A comparison of days to normal between groups 114

Post discharge comparison of variables 115

Variables associated with normal bowel function by day five 116

Variables affecting days to normal bowel function 117

Summary of Study Findings 117

Comparing the Conceptual Framework with the Empirical Evidence 119

Data Collection Issues 120

Interrater Reliability 121

Limitations and Strengths 122

Limitations 122

Strengths 123

Application of the Murdoch Bowel Protocol© to Clinical Practice 124

Summary of the Chapter 125

Chapter 7 – Conclusion, Implications and Recommendations 127

Future Research Directions 128

Summary of Recommendations 129

Clinical nursing 129

Future research 129

Education 129

Appendices

Appendix A	Bristol Stool Chart	130
Appendix B	Summarised Results of Literature Search	131
Appendix C	Letter to Orthopaedic Surgeons	160
Appendix D	Data Collection Form	161
Appendix E	Control Hospital Stool Recording Chart	163
Appendix F	Intervention Hospital Stool Recording and Medication Administration Chart	164
Appendix G	Caregiver Information Sheet	165
Appendix H	Patient Information Letter	166
Appendix I	Patient Consent Form	170
Appendix J	HREC approval: The University of Notre Dame Australia	171
Appendix K	HREC approval: St John of God Health Care	172
Appendix L	Australian and New Zealand Clinical Trials Registration and Universal Trial Number	173
Appendix M	HREC approval for study amendment: St John of God Health Care	175
Appendix N	HREC approval for study amendment: The University of Notre Dame Australia	176

List of Tables

Table 2.1	Summary of opioid receptor response	17
Table 2.2	Summary of systematic review findings	35
Table 3.1	Stressors affecting the post-operative arthroplasty patient	68
Table 4.1	Pre-study estimation of minimum proportion of patients required for sampling	79
Table 4.2	Actual proportion of patients sampled	79
Table 4.3	Final number of patients analysed	80
Table 4.4	Summary of sampling procedure	82
Table 5.1	Comparison of baseline variables for incomplete and complete cases	97
Table 5.2	Baseline comparison of control and group variables	99
Table 5.3	Overall group effect for post-operative variables	101
Table 5.4	Days to normal between control and intervention groups	102
Table 5.5	Overall group effect for post discharge variables	104
Table 5.6	Variables associated with days to normal bowel function at day five	106
Table 5.7	Variables associated with days to normal bowel function	108

List of Figures

Figure 2.1	Baseline clinical audit results	51
Figure 2.2	Bristol Stool Chart	54
Figure 2.3	Murdoch Bowel Protocol©	57
Figure 2.4	Comparisons of clinical audit results at baseline and one year post implementation of the Murdoch Bowel Protocol©	59
Figure 3.1	The Neuman Systems Model	69
Figure 3.2	Model of nursing care for the management of constipation in post-operative arthroplasty patients	70
Figure 4.1	Study design flowchart	76
Figure 5.1	CONSORT Diagram	96

References 177

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

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