

British Geriatrics Society
Improving healthcare for older people



**Improving Continence Care in Older People
2020**

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Virtual conference**

Book of Abstracts

2020 Improving Continence Care in Older People

CQ - Clinical Quality - CQ - Patient Safety [106]

Implementation of continence pathway to improve outcomes and patient safety for elderly patients with urinary incontinence

B. Prabhu¹, I. Safiulova¹, K. Patel¹, S. Chandra¹, J Fikree¹, L Dennis¹, T. Tong¹, R. Mizoguchi¹

Care of Elderly, Chelsea and Westminster Hospital, London

Background

The audit was performed on patients above 65 years in Acute Frailty Unit (AFU) , Stroke Unit (SU), and Care of Elderly (CoE) wards in Chelsea and Westminster Hospital for 4 weeks.

Introduction

Catheterization for Urinary Incontinence (UI) is reversible yet common in hospital. Prolonged catheterization can lead to various complications. Our previous audit has shown a rise in catheterization rate and UI. Hence, a continence pathway was introduced with an aim to reduce both problems.

Methods

A continence pathway was formulated with demographic details of patient, incontinence, catheterization (indication, onset, reversible factors), mobility of patient and review before discharge. Ward nurses were trained about the pathway, ward doctors reviewed catheterization post admission and before discharge. Weekly team meetings were held to discuss any necessary changes require to improve efficiency of the pathway.

Results

50 patients were audited, 27 (54%) were females, 21 (42%) above 85 years old. 15 patients (30%) had urinary catheters during their hospital stay and among them 12 (24%) were newly catheterized. Catheterization rate were 8 (33%, n=24), 3 (17%, n=18) and 1 (13%, n=8) patient on CoE, AFU and SU wards respectively. 22 patients (44%) were incontinent in which 9 patients (18%, n=50) had developed transient incontinence. Incontinence rate has dropped by 10% , there was an increment in review of medication by 91% after implementation of the continence pathway.

Conclusions

Introduction of continence pathway helps in reducing hospital acquired UI and it reinforces reversible causes of urinary incontinence. We will incorporate the continence pathway and a check list in the trust electronic medical record which will hopefully improve the continence care in our trust.

Implementation of continence pathway to improve outcomes and patient safety for elderly patients with urinary incontinence

B. Prabhu¹, I. Safiulova¹, K. Patel¹, S. Chandra¹, J Fikree¹, L Dennis¹, T. Tong¹, R. Mizoguchi¹
Care of Elderly Department, Chelsea and Westminster Hospital¹

Introduction

Catheterization for Urinary Incontinence (UI) is reversible yet common in hospital. Prolonged catheterization can lead to various complications.

Aims

To introduce continence pathway so as to reduce catheterization rate and hospital acquired urinary incontinence.

Methods

- Continence pathway was formulated with demographic details of patient, incontinence, catheterization (indication, onset, reversible factors), mobility of patient and review before discharge.
- Training for medical staff was implemented.

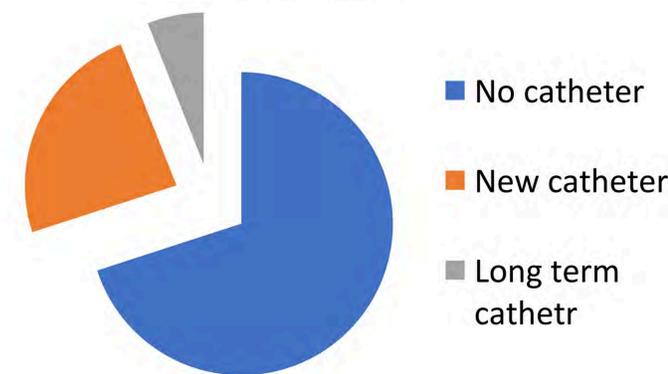
Conclusions

- Introduction of continence pathway helps in reducing hospital acquired UI and it reinforces reversible causes of urinary incontinence.
- We will incorporate the continence pathway and a check list in the trust electronic medical record.

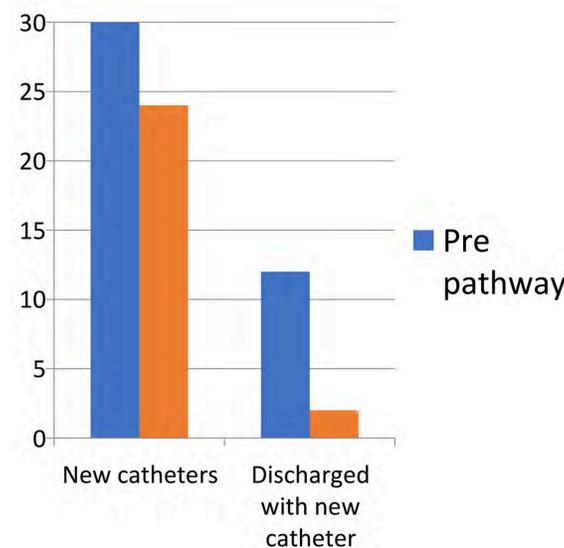
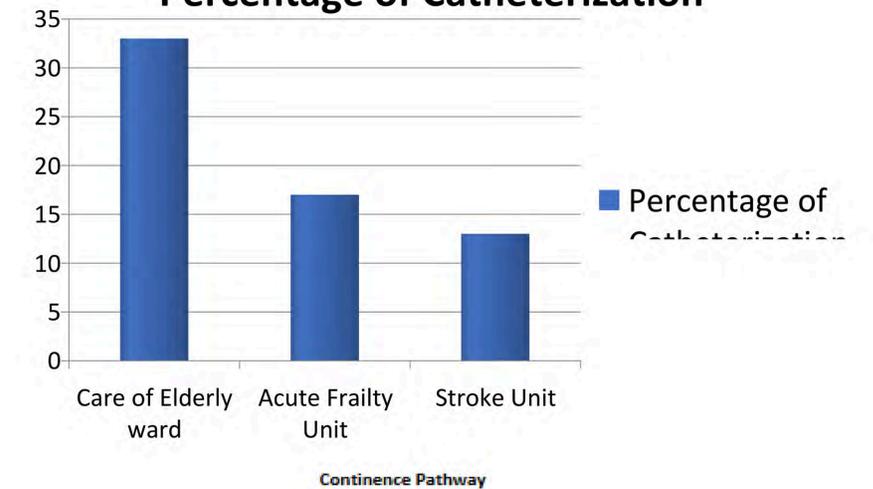
Results

50 patients were audited, 27 (54%) were females, 21 (42%) above 85 years old

Percentage of patients on catheter



Percentage of Catheterization



Name of assessor: _____ Admission date: _____ Discharge date: _____
 Date of assessment: _____
 Is the patient catheterised? Yes/No If Yes, when was it inserted & why? _____
 Is the patient incontinent? Yes/No

If YES, answer PART A & B If NO, answer PART A only

PART A

1. Urine dip: Leucocytes _____ Nitrites _____
2. Bladder scan _____ mls
3. Review stool chart
If BNO ≥3/7 inform doctor

Is the urinary incontinence new?

If YES, answer PART C & D If NO, answer PART C

PART C

1. Does the patient suffer from bowel incontinence or constipation? Yes/No
2. Is the patient independently mobile? Yes/No
3. If patient is male, can they hold a bottle without help? Yes/No
4. If applicable, ensure patient has access to a toilet, commode or bottle
5. Does the patient have BPH? Yes/ No

PART D

1. Inform doctor (Doctor to fill up Part E)
2. Inform nurse
3. Review continence in 1/52 or before discharge. Date of review: _____
4. Date of TWOC _____
5. If still on catheter, reason for catheter _____
6. Discharged on LTC _____ (FU at TWOC Clinic : Yes/ No)

2020 Improving Continence Care in Older People

CQ - Clinical Quality - CQ - Patient Centredness [140]

Risk factors for new onset incontinence in elderly patients acutely admitted to hospital

Jomana Fikree; Annabel Rogers; Reem Yahia; Magnus Fugger

St Marys Hospital, Imperial College Healthcare NHS Trust

Introduction

Incontinence is associated with hospitalisation, and has negative effects on physical, emotional and social health. It is also associated with subsequent adverse outcomes to patients, carers and healthcare systems. Along with dementia and functional dependency, it is an established predictor of institutional care admission following acute hospitalisation, which has its own personal and economic implications. We assessed the prevalence of incontinence amongst elderly patients on the acute medical wards and identified factors predictive of developing new incontinence during admission. This will enable screening for patients at highest risk, and the development of specific targeted continence care pathways to decrease their rates of new onset incontinence in hospital.

Methods

Retrospective quantitative analysis of records for all patients aged over 65 years admitted via the acute medical take over a 7-day period. Records were screened for: continence status before and during admission; medications; mobility impairment; cognitive impairment; and investigation of incontinence (urinalysis, bladder scan, digital rectal examination).

Results

Of the 85 patients audited, 66 patients (77.6%) were continent prior to admission. Of this cohort, 17 patients became newly incontinent during admission (26.2%). Mobility impairment and cognitive impairment were significantly associated with the development of new incontinence (RR 6.74; 95% CI 2.14-21.21. P

Risk Factors for New Onset Incontinence in Elderly Patients Acutely Admitted to Hospital

J Fikree, A Rogers, R Yahia, M Fugger

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Introduction

- Incontinence is associated with hospitalization, and has negative effects on patient physical, emotional and social health, as well as its effects on carers and healthcare systems.
- Identifying risk factors for hospital acquired incontinence will enable screening for patients at highest risk, and the development of targeted continence care pathways to decrease their risk of incontinence, and the short and long term adverse effects associated with it.

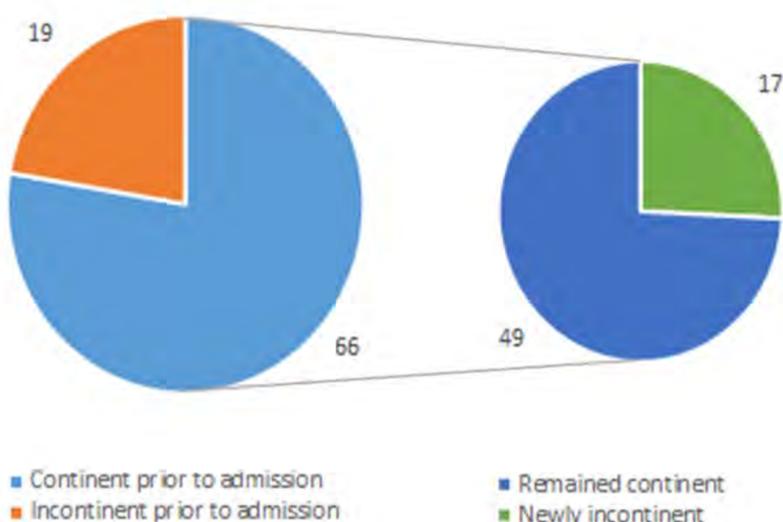
Aims

- Assess the prevalence of incontinence amongst elderly patients on acute medical wards.
- Identify risk factors for developing incontinence during hospital admission
- Develop a tool for early screening and identification of 'at risk' patients, to target early implementation of continence care pathways

Methods

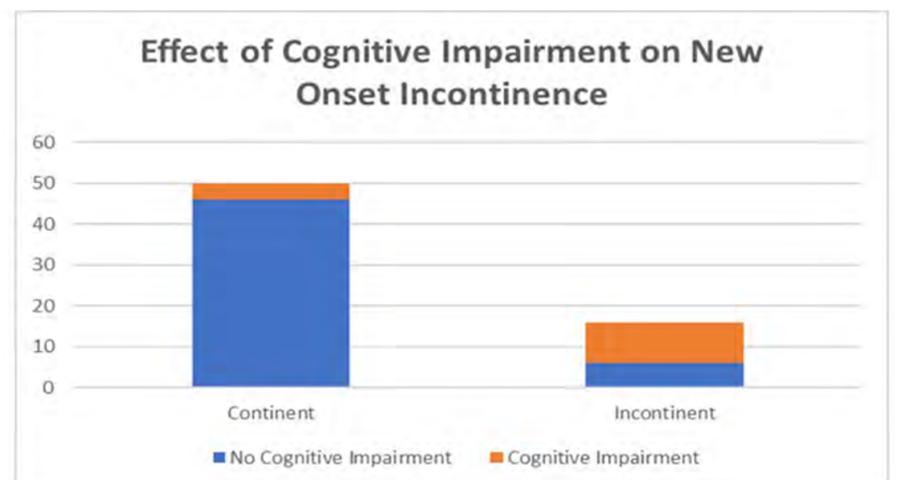
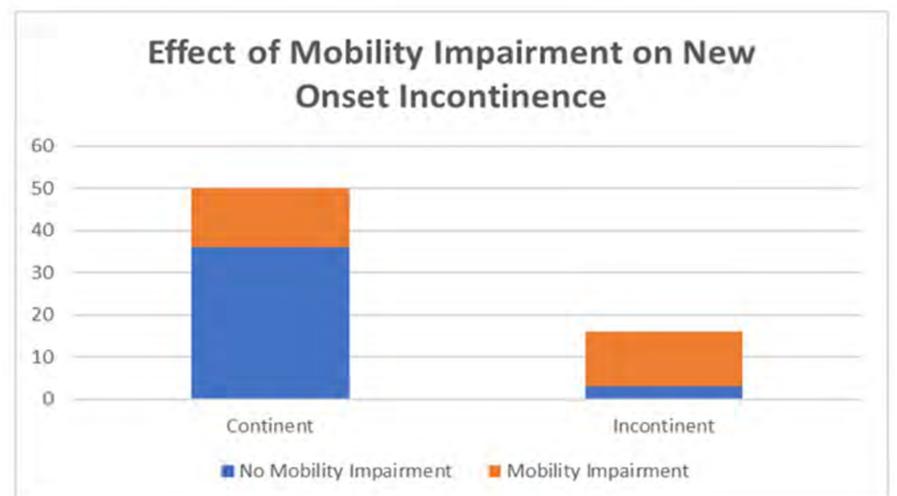
- Retrospective quantitative analysis of records for all patients aged over 65 years admitted via the acute medical take over a 7-day period.
- Records were screened for:
 - Continence status before and during admission
 - Medications
 - Mobility impairment
 - Cognitive impairment

Continence status of over-65s admitted on the Acute Medical Take



Results

- 85 patients analysed (47 female, 38 male; age 65-96)
- 66 patients (77.6%) were continent prior to admission
- 17 (25.7%) of previously continent patients became newly incontinent in hospital
- Mobility and cognitive impairment were associated with new onset incontinence (RR 6.74; 95% CI 2.14-21.21. P<0.05 and RR 5.31; 95% CI 2.47-11.39. P<0.05 respectively).
- No association between age, gender, or use of diuretics/antimuscarinics, and development of new urinary incontinence in hospital.



Conclusions

- **Mobility and cognitive impairment are independent predictors of new incontinence in hospital settings.**
- **These conditions are routinely screened for on admission, so continence pathways tailored to these high risk patient groups can be used, facilitating access to toilets/ commodes and scheduling regular toileting/ prompting voiding respectively.**

Improving Documentation of Bowel Movement on Geriatric Wards

Alexander Noar; Jess Parkin; Rachel Hallam; Tharindri Wijekoon; Clare Walker; Hamza Khan; Jennifer Tsui; Kokwai Chin; Monisha Chakravorty; Rusyai Zalynda

Sheffield Teaching Hospitals;

Introduction

Constipation is a widely prevalent issue in older adults that may result in complications such as urinary retention, delirium and bowel obstruction. Previous studies have indicated that while stool charts are well completed by nursing staff, they are infrequently monitored by doctors. This project aimed to improve the documentation of bowel movement by doctors on ward rounds to 85%, by the end of a 3-month period.

Methods

Formulation of the project was achieved using group work and a fish-bone diagram which focused on how doctors can improve on documenting bowel movements. Baseline data were collected from inpatient notes on weekdays over a three-week period on a geriatric ward in Northern General Hospital, Sheffield. Interventions of posters and stickers of the poo emoji were placed on walls and in inpatient notes respectively as a reminder. Post-intervention data were collected on weekdays over two weeks, and then repeated a month later to assess for a sustained change.

Results

The data on bowel activity documentation were collected from 28 patients. The baseline data showed that bowel activity was monitored daily on the ward 56.25% of the time. There was a significant increase in documentation of 85.75% following the interventions. The sustainability study showed that bowel activity was documented on the ward 59.09% of the time.

Conclusions

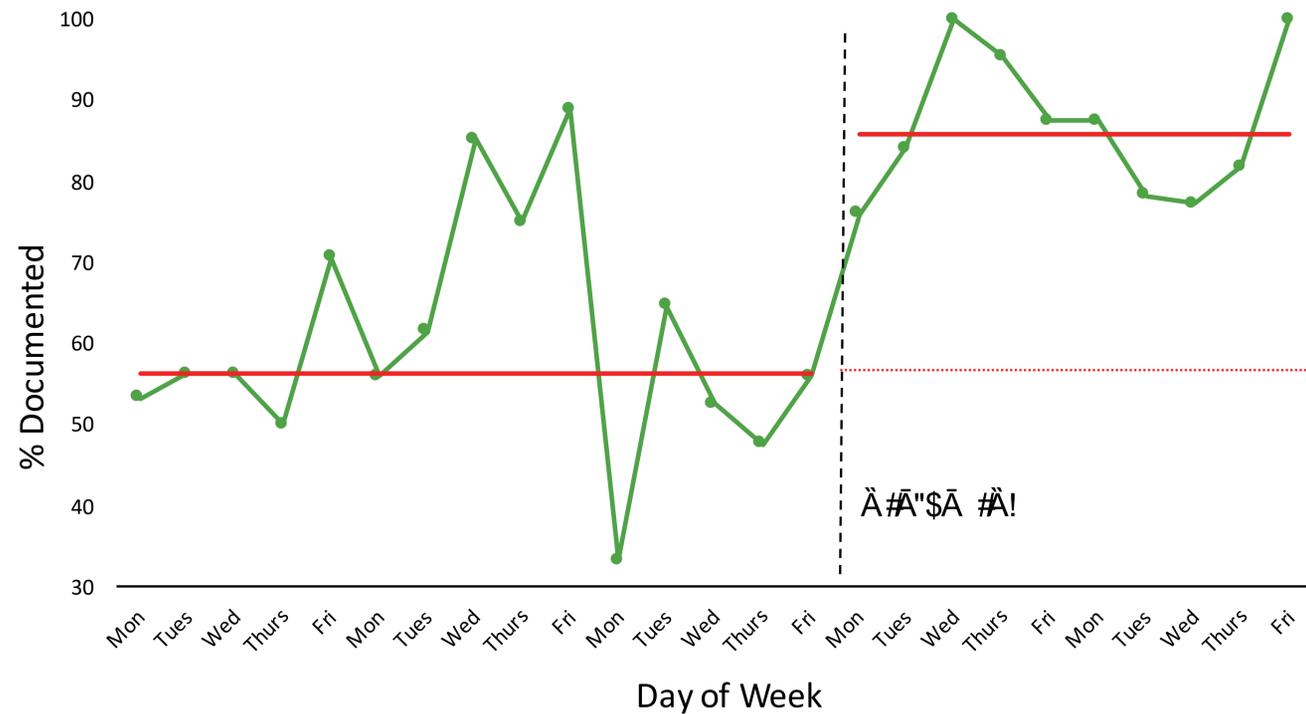
This study shows how a strong effect on behavioural change can be accomplished through simple interventions such as stickers and posters. As most wards currently still use paper notes, this is a generalisable model that other wards can trial. However, this study also shows the difficulty in maintaining behavioural change over extended periods of time. Further PDSA cycles should examine the reasons behind the difficulty sustaining the change and implement new changes that aim to overcome them.

Improving Documentation of Bowel Movement on a Geriatric Ward

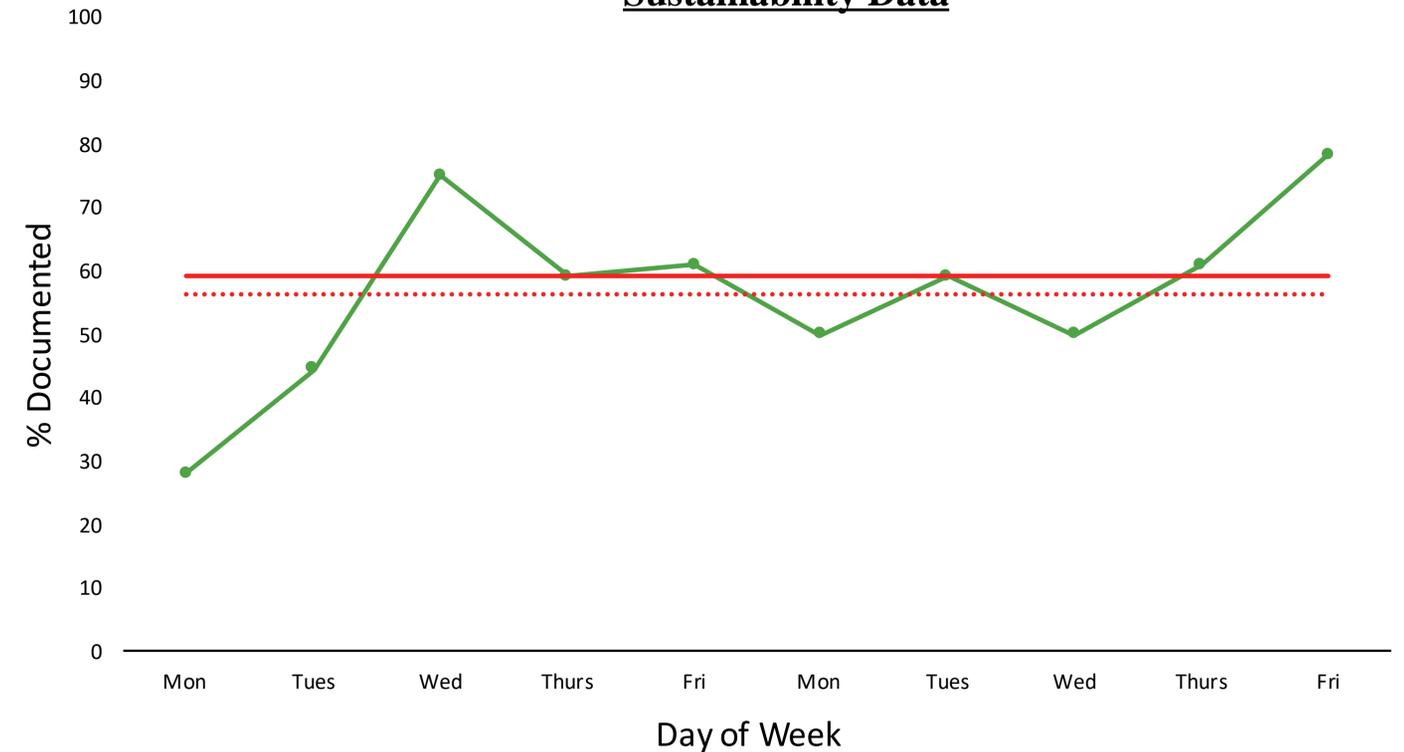
Alexander Noar, Claire Walker, Jess Parkin, Jennifer Tsui, Kokwai Chin, Monisha Chakravorty, Hamza Khan, Rusyai Zalynda, Tharindri Wijekoon

Sheffield Teaching Hospitals

Baseline and Intervention Data



Sustainability Data



Background

Constipation is a widely prevalent issue in older adults that may result in complications such as urinary retention, delirium and bowel obstruction. Previous studies have indicated that while stool charts are well completed by nursing staff, they are infrequently monitored by doctors¹.

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This study shows how a strong effect on behavioural change can be accomplished through simple interventions such as stickers and posters. As most wards currently still use paper notes, this is a generalisable model that other wards can trial.

However, this study also shows the difficulty in maintaining behavioural change over extended periods of time. Further PDSA cycles should examine the reasons behind the difficulty sustaining the change and implement new changes that aim to overcome them.



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2020 Improving Continence Care in Older People

SP - Scientific Presentation - SP - Incont (Incontinence) [200]

Exploring Continence care in Hospital for Older adults (ECHO): healthcare practitioners' perspectives

John Percival; Katharine Abbott; Theresa Allain; Rachel Bradley; Fiona Cramp; Jenny Donovan; Candy McCabe; Kyra Neubauer; Sabi Redwood; Nikki Cotterill

UWE; NBT; UHBWT; UHBWT; UWE; UoB; UWE; NBT; UoB; UWE

Introduction

Incontinence is a significant concern for individuals and the NHS. Incontinence increases with age but is not an inevitability. The personal impact of incontinence in later life can include isolation, loneliness and reduced activity. In addition, incontinence is a precipitating cause for admission to nursing or residential care.

Methods

The ECHO study investigated inpatient continence care for older adults through 27 semi-structured, face to face, interviews with multidisciplinary healthcare staff in three South-West England hospitals between October 2019 and January 2020.

Results

Three key needs were identified:

- (i) The 'normal' continence status of older adults needs to be accurately identified and all interventions focused on promoting return to 'normality', or improvement where possible. Over-reliance on continence products was highlighted, "We cause incontinence a bit" and "We tend to get pad happy".
- (ii) Accurate prioritisation of the assessment of incontinence to guide appropriate intervention is required. Continence is one aspect of care that is not prioritised among other competing demands, and protocols and documentation to standardise continence promotion have limitations, "[They are] only as good as the people filling them in".
- (iii) Training of staff in interventions, monitoring and effective communication was identified as a key unmet need. Staff highlighted, "I have never even been offered training on it", and, "We do our best but if we had kind of more education and understanding then maybe our care would be better".

Conclusion

The ECHO study identifies a clear appetite to improve continence care within wards for older adults to achieve optimum outcomes and avoid potential decline for these individuals. Education and processes that enable high quality care to be patient-centred and responsive to patients' needs are required. These findings will underpin the development of a training intervention and campaign to raise the profile of this fundamental area of care.

Exploring Continence care in Hospital for Older adults (ECHO) – healthcare practitioners' perspectives

Percival J¹, Abbot K², Allain T³, Bradley R³, Cramp F¹, Donovan J⁴

McCabe C¹, Neubauer K², Redwood S⁵, Cotterill N¹

1. University of the West of England West 2. North Bristol NHS Trust 3. University Hospitals Bristol NHS Foundation Trust 4. University of Bristol 5. NIHR Applied Research Collaboration West



BACKGROUND

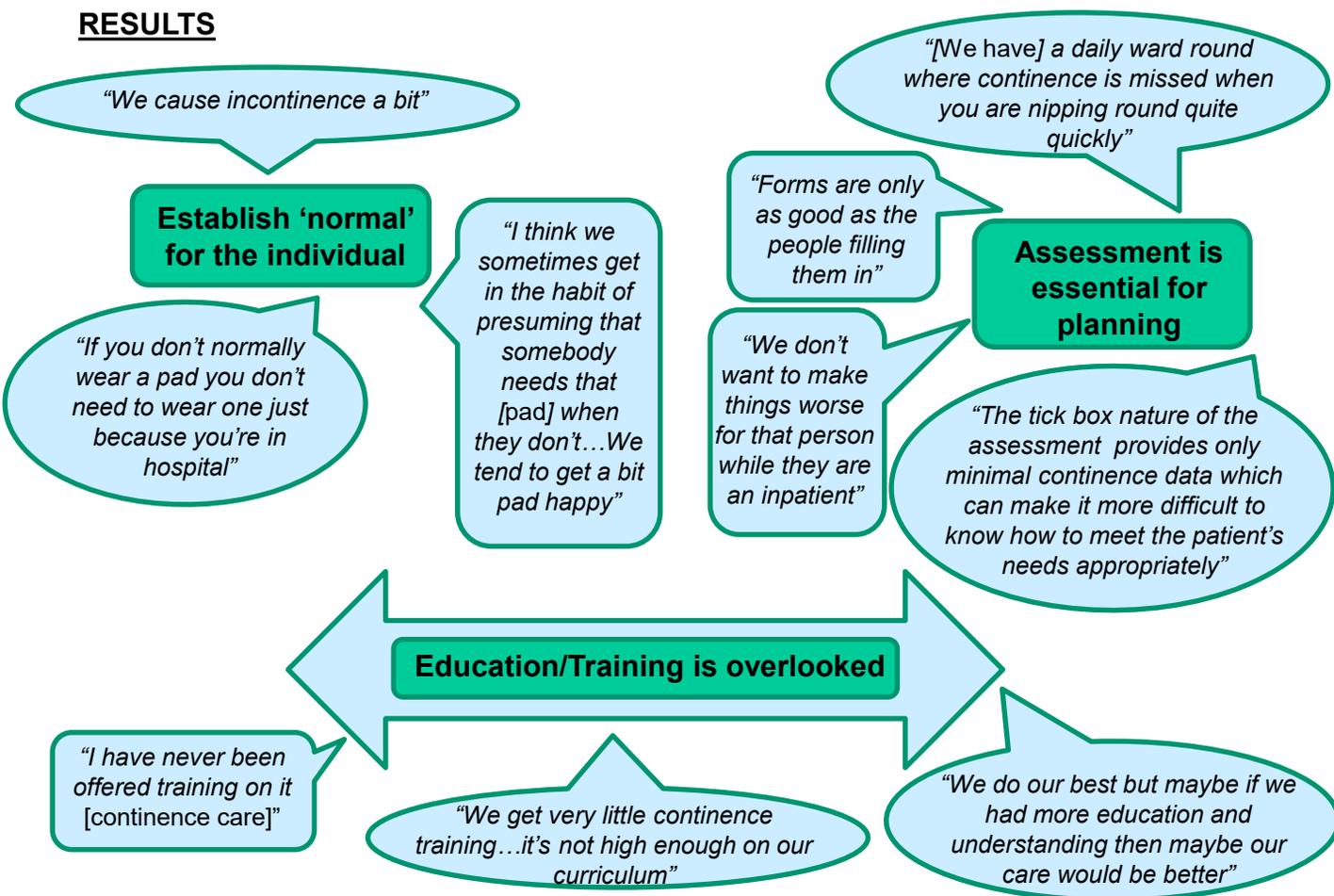
- Incontinence is a significant concern for individuals and the NHS.
- Incontinence increases with age but is not an inevitability.
- Incontinence can quickly lead to isolation, loneliness and reduced activity in older adults and is a precipitating cause for admission to nursing or residential care.
- It is therefore imperative we optimise this care in the hospital setting.

METHODS

Twenty-seven multidisciplinary healthcare staff members in three hospitals were interviewed to explore the barriers and facilitators to the provision of continence care between October 2019 and January 2020.

Thematic analysis of transcripts was undertaken using NVivo 12 to identify common themes within the interview content.

RESULTS



CONCLUSIONS

- Clear appetite identified to provide good quality continence care despite persistency of barriers.
- Education and processes that enable high quality care to be patient-centred and responsive to patients' needs are required
- Next steps: development of a training and assessment programme to raise the profile of this fundamental area of care

Improving the assessment of new urinary incontinence in an in-patient geriatric clinical setting

Catriona Basquill

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Introduction

Urinary incontinence (UI) is a common problem for older adults and can be linked to other physical problems like skin breakdown, falls, infections, increased dependency and frailty. These lead to longer hospital stays and increase the chance of being discharged to long term care. With this project we aimed to improve and standardise the initial assessment and management of new UI.

Method

We randomly reviewed clinical case-notes of elderly inpatients with new UI at Forth Valley Royal Hospital between June and July 2020. Using both medical and nursing notes we looked at mid-stream urine sampling, assessment of bowel habits, post-void bladder scan, assessment of mobility/falls risk, skin care concern and anticholinergic burden. We introduced measures of change at each cycle including a poster tool and verbal education of nursing and medical staff.

Results

We completed four rounds of data collection over 8 weeks. The number of patients with new UI included in each cycle ranged from four to ten. Following education of staff and introducing a ward UI assessment and management flow-chart poster tool, there was a 30% increase in mid-stream urine samples sent for infection screen and a 50% increase in post-void bladder scanning of these patients. 70% of patients had a bowel assessment documented post-interventions compared to 25% pre-intervention.

Conclusion

Using a combination of visual prompts and formal education led to improvements in screening for infection, urinary retention and constipation. While overall numbers in each cycle were small, there was an increased recognition of the significance of new UI and awareness of the need for further assessment. This is a critical step in changing the perception that UI is an inevitable part of the ageing process.

incontinence in an in-patient geriatric clinical setting

C. Basquill*, L. McNeil

Ageing and Health Department, Forth Valley Royal Hospital, Larbert, United Kingdom

INTRODUCTION

Urinary incontinence (UI) is a common problem amongst the elderly and can be linked to a number of other physical problems. This can result in longer hospital stays and increase long term care needs.

AIM

To improve and standardise the initial assessment and management of new UI in a hospital inpatient geriatric population

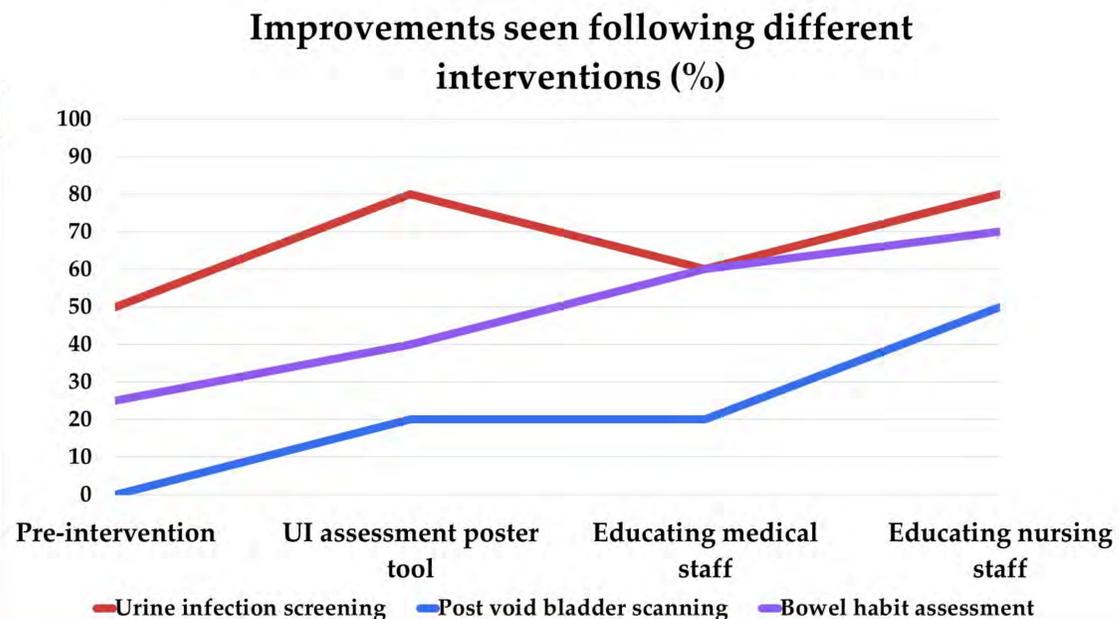
METHOD

Between June and July 2020, four quality improvement 'PDSA' cycles were undertaken using randomly selected patient clinical case-notes. Four to ten patients were included in each cycle.

Interventions included educating nursing and medical staff and introducing a UI assessment tool. The outcome measures included: mid-stream urine sampling, bowel assessment and post-void bladder scanning.

RESULTS

A 30% increase in mid-stream urine sampling for infection screening was demonstrated and a 50% increase in post-void bladder scanning. Additionally, there was a 45% increase in bowel assessments following intervention.



CONCLUSION

A combination of visual prompts and formal education led to improvements in screening for infection, urinary retention and constipation. While overall numbers were small, there was an increased recognition of the significance of new UI and awareness of the need for further assessment. This is a critical step in changing the perception that UI is an inevitable part of the ageing process.

Urinary Incontinence Assessment Tool

Take a history

- Ask about duration of symptoms
- Ask about bowel habit
- Ask for symptoms of urine infection
- Ask for symptoms of prostatism – urgency, frequency, hesitancy, dribbling, poor flow, incomplete emptying
- Ask about caffeine intake
- Assess if stress, urge or mixed incontinence

Examination

- Look for red flags: acute back pain, lower limb abnormal neurology
- Do a PR exam for masses or constipation
- Consider PV exam in female patients to assess for prolapse
- Assess mobility if possible – can they make it to the toilet?
- Examine sacral area for non-blanching erythema/skin breaks

Investigations

- Review medications e.g. diuretics, anticholinergics e.g. amitriptyline (refer to anticholinergic burden chart)
- Do a post-void bladder scan
- Urine dipstick for haematuria (dipstick does not rule in/out infection in elderly)
- Send MSU if possible
- Blood tests: FBC, U&E, Calcium, Glucose, PSA

Plan

- Address any contributing factors – medication changes, starting laxatives, lifestyle advice
- Discuss with nursing staff regarding containment products
- Discuss catheterisation with the clinical team and consider carefully if appropriate (i.e. evidence of urinary retention, concern re skin integrity) – this should be short term if possible
- Consider referring to specialist continence service for further assessment and management if appropriate

Developing a continence service: evidence of improvement with topical treatment of vulval skin disorders and lifestyle advice

Judith Taylor, Carolyn Tipton, Jane Russell, Gillian Phimister

Medicine for the Elderly Department, Ninewells Hospital, Dundee; Medicine for the Elderly Department, Ninewells Hospital, Dundee; Medicine for the Elderly Department, Royal Victoria Hospital, Dundee; Medicine for the Elderly Department, Royal Victoria Hospital, Dundee

Introduction

In our local service, there is not yet a dedicated geriatrician led continence service. We have trialled an “ad-hoc” continence clinic based in the day hospital. This service audit aims to describe the clinical problems identified in patients presenting to the clinic, and determine any benefit on patient’s symptom severity and requirement for containment pads.

Methods

Data was recorded on patient’s referral reason, identified clinical diagnoses and treatment. Patients were asked at their first clinic assessment to rate the impact of their symptoms on their life from 1-10, and asked this again at their final clinic appointment. Patients were also asked number and type of containment pads on initial assessment and final clinic appointment. Pre and post treatment symptom impact scores were compared using a two tailed paired t-test.

Results

58 elderly women were assessed. Frequently identified problems were: probable lichen sclerosis (n=24), vaginal atrophy (n=17), stress incontinence (n=10), constipation (n=8), urge incontinence/OAB (n=7) and dermatitis (n=5). The most frequently used treatments were topical corticosteroids (n=28), topical oestrogen (n=16) and lifestyle advice (n=11). Pre-test symptom impact scores were recorded in 48 patients, and post treatment scores in 30 of these. There was a significant improvement: mean pre-treatment score of 7.77 and post-treatment of 3 ($p < 0.05$). Pad use was recorded for 29 patients at initial assessment. 100% used pads, and 62% of these used ≥ 3 pads/24 hours. Pad use was recorded for 19 patients at final review. All of these demonstrated a reduction in pad use. 47% used no pads at final review.

Discussion

With predominantly topical treatments and lifestyle advice, significant improvements were seen in both containment pad use and symptom severity scores. Improvement in continence in a number of patients who only had treatment of lichen sclerosis suggests this is an area for further study.

Developing a continence service: Evidence of improvement with topical treatment of vulval skin disorders and lifestyle advice

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Introduction

In our local service, there is not yet a dedicated geriatrician led continence service. We have trialled an “ad-hoc” continence clinic based in the day hospital. This service audit aimed to describe the clinical problems identified in patients presenting to the clinic, and determine any benefit on patient’s symptom severity and requirement for containment pads.

Methods

- Data was recorded on patient’s referral reason, identified clinical diagnoses and treatment.
- Patients were asked at their first clinic assessment to rate the impact of their symptoms on their life from 1-10, and asked this again at their final clinic appointment.
- Patients were also asked number and type of containment pads on initial assessment and final clinic appointment.
- Pre and post treatment symptom impact scores were compared using a two tailed paired t-test.

Results

- 58 elderly women were assessed.
- Frequently identified problems are shown in Figure 1.
- The most frequently used treatments were topical corticosteroids (n=28), topical oestrogen (n=16) and lifestyle advice (n=11).
- Pre-treatment symptom impact scores were recorded in 48 patients, and post treatment scores in 30 of these. There was a significant improvement: mean pre-treatment score of 7.77 and post-treatment of 3 (p <0.05) (Figure 2).
- Pad use was recorded for 29 patients at initial assessment. 100% used pads, and 62% of these used ≥ 3 pads/24 hours. Pad use was recorded for 19 patients at final review. All of these demonstrated a reduction in pad use. 47% used no pads at final review.

Conclusions

With predominantly topical treatments and lifestyle advice, significant improvements were seen both objectively in containment pad use and subjectively in patients rating the impact of their symptoms. Lichen sclerosus and vaginal atrophy were the most frequently identified clinical problems in this patient cohort presenting with urinary incontinence. Given that lichen sclerosus was diagnosed clinically, it is possible that there were some cases of overdiagnosis. In the literature there is some evidence of an association of urinary incontinence with lichen sclerosus^{1,2}. However, it is not clear if this is a cause or effect relationship. Improvement in continence in a number of patients in our clinic who only had treatment of lichen sclerosus with topical corticosteroids is an interesting finding, and this is an area which merits further study.

Figure 1: Frequency of Clinical Problems

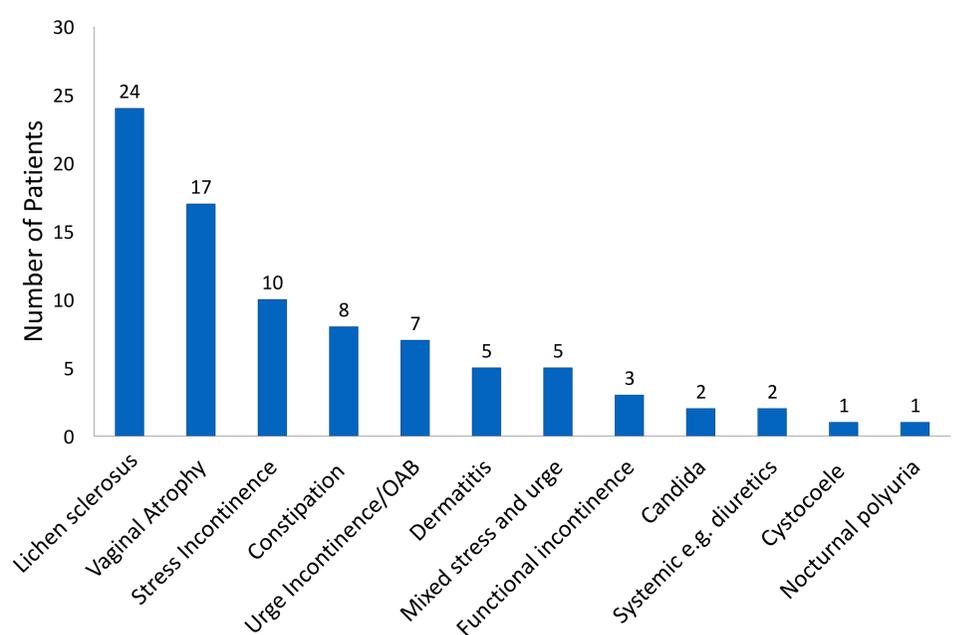
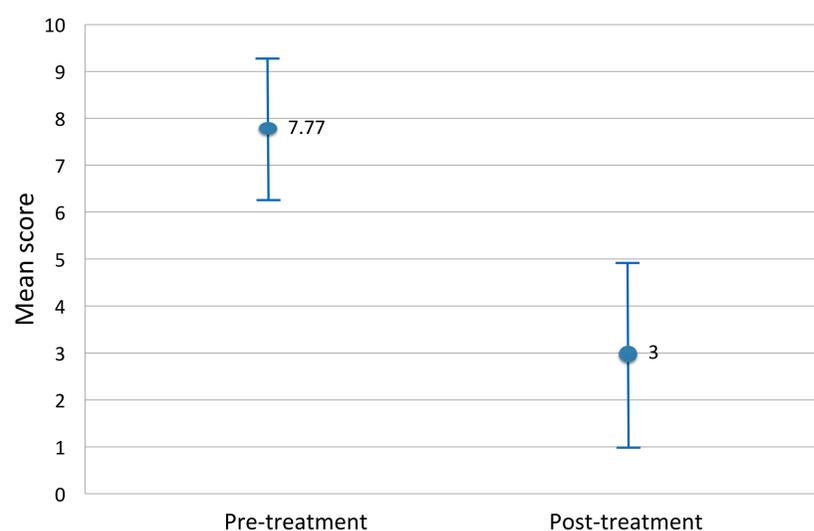


Figure 2: Impact of Symptoms Score



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Interventions with family/informal carers of older people with urinary or fecal incontinence living at home: a systematic review

Syed Fazal Hussein Shah; Serena Altaf Merchant; Jane Fleming; Jackie Buck

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Introduction: Urinary and faecal incontinence are common and disruptive morbidities amongst older people. As western healthcare moves to encourage older people to reside at home where possible rather than move to institutionalised facilities, there is increasing prominence in the role of family members and informal caregivers to meet the care needs of older individuals. This systematic review aimed to determine the availability and efficacy of interventions delivered by family members and/or informal caregivers to manage urinary and faecal incontinence in community-dwelling elders.

Method: We conducted a systematic review of randomised controlled trials in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, searching for English language publications in electronic databases (Medline, CINAHL, EMBASE, PSYCINFO, Cochrane Database of Systematic Reviews) from database inception to Feb 25, 2020. Two independent reviewers screened records for inclusion against predefined, protocol approved inclusion criteria, and undertook data extraction and quality assessment using the Cochrane Risk of Bias (RoB) 2.0 tool.

Results: Only four of 765 search results met inclusion criteria, each investigating a different intervention to manage urinary incontinence in community-dwelling elders. No trials measured patients' quality of life, and all found their respective intervention to significantly reduce incontinence frequency compared to control. However, all papers suffered methodological deficiencies resulting in RoB scores of 'some concerns' or 'high risk of bias'. All papers reported difficulties with participant recruitment and retention due to caregiver inability or unwillingness to follow the intervention.

Conclusions: There is insufficient evidence of clear effectiveness of any of the interventions identified. This review identifies an urgent need for research to inform clinical guidelines for managing incontinence that are relevant to community-dwelling elders and their caregivers.

Interventions with family/informal carers of older people with urinary or faecal incontinence living at home: a systematic review

Syed Fazal Hussein Shah¹; Serena Altaf Merchant¹; Jane Fleming²; Jackie Buck³

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BACKGROUND

Urinary and faecal incontinence are common and disruptive morbidities amongst older people. As western healthcare moves to encourage older people to reside at home where possible rather than move to institutionalised facilities, there is increasing prominence in the role family members and informal caregivers play in helping to meet the care needs of older individuals.

OBJECTIVES

- To identify what strategies are available which family member/informal caregivers can use to manage urinary / faecal incontinence in community dwelling elders
- To determine the effectiveness of the interventions in terms of (1) patient Quality of Life (QoL), and (2) incontinence measures

METHODS

We conducted a systematic review of randomised controlled trials in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, searching for English language publications in electronic databases (Medline, CINAHL, EMBASE, PSYCINFO, Cochrane Database of Systematic Reviews) from database inception to Feb 25, 2020. Two independent reviewers screened records for inclusion against predefined inclusion criteria (Table 1) and undertook data extraction and quality assessment using the Cochrane Risk of Bias (RoB) 2.0 tool.

RESULTS

- Only 4 of 765 search results met inclusion criteria (Figure 1), each investigating a different intervention for managing urinary incontinence (Table 2)
- No trials were identified for caregiver-led interventions to manage faecal incontinence
- Most participants were female and white
- No included trials reported on the primary outcome, QoL
- All trials found their respective intervention to significantly reduce incontinence frequency compared to control
- However, all papers suffered methodological deficiencies resulting in RoB 2.0 scores of 'some concerns' or 'high risk' of bias (Table 3)
- Study limitations included:
 - Inconsistent intervention adherence
 - Significant differences at baseline between the incontinence characteristics of the control and experimental groups
 - Poor participant recruitment and retention, frequently due to caregiver inability/unwillingness to follow interventions

CONCLUSIONS

- There is insufficient evidence of clear effectiveness of any of the interventions identified → *there exists an urgent need for additional research to inform clinical guidelines for managing incontinence that are relevant to community-dwelling elders with family/informal caregivers*
- Subject recruitment and retention are major problems facing trials of elder-caregiver dyads → *research is needed to examine factors impacting elder-caregiver receptivity to caregiver-led incontinence interventions in order to optimise intervention feasibility in future trials and clinical practice*
- No caregiver-led interventions to manage faecal incontinence were identified → *research is needed to fill this literature gap*
- Limited literature relevant to managing incontinence in men and non-white elder-caregiver dyads was identified → *future trials with more diverse participant demographics are needed*

Table 1 Inclusion Criteria

Participants/Population	Older people (aged ≥ 65) living at home in the community with the support of family member(s) and/or informal caregivers
Intervention(s)	Interventions delivered at home with direct facilitation by family member(s)/informal caregiver(s) to promote continence or reduce/manage incontinence
Comparator(s)/Control	"Usual care" or any other control group used as comparator for the above interventions
Context	Living in the community and under the care of family member(s) and/or informal carer(s)
Outcome(s)	Primary: Quality of Life (QoL) for older people affected by incontinence Secondary: Impact on incontinence measures

Figure 1 PRISMA Flow Chart

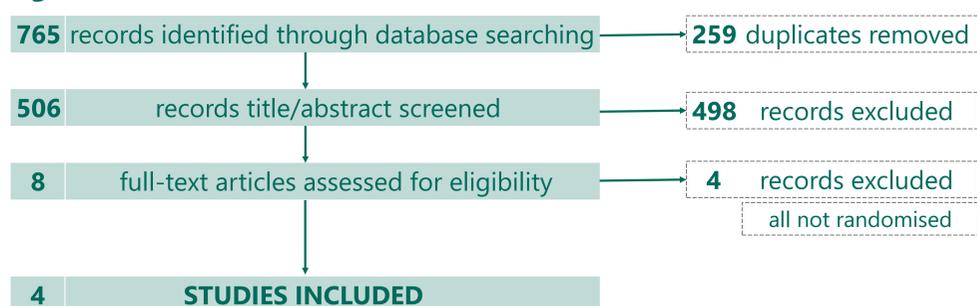


Table 2 Overview of included studies

Study	Type	Intervention	Outcomes	Limitations
Bear et al 1997 ¹	Randomised quasi-experimental N = 24 urinary incontinent older women (including 3 elder-caregiver dyads)	'Behavioural Management for Incontinence': stepwise implementation of (1) self-monitoring; (2) scheduling regime; (3) pelvic muscle exercises	QoL: Not reported Incontinence: Significant reductions in number of daily incontinence episodes and volume in intervention group vs. increases in control group	Small sample size; 37.5% attrition, including both elder-caregiver dyads assigned to treatment → no elder-caregiver dyads included in reported outcomes
Jirovec et al 2001 ²	Randomised 2x2 mixed design N = 118 urinary incontinent elder-caregiver dyads	Individualised scheduled toileting regimen; caregiver education regarding urinary incontinence and fluid balance optimisation; home environment assessed for obstacles to urine incontinence	QoL: Not reported Incontinence: Significant reduction in mean incontinence frequency in intervention group vs. increase in control group	37% attrition; inconsistent intervention adherence
Engberg et al 2002 ³	Randomised prospective, controlled exploratory study with cross-over design N = 19 urinary incontinent elder-caregiver dyads	Prompted voiding intervention; caregiver education regarding fluid balance optimisation	QoL: Not reported Incontinence: Treatment subjects showed a significant decrease in number of incontinent episodes per day vs. smaller, non-significant reduction in control group.	Small sample size; 15.8% attrition; significant differences between control and experimental groups' baseline incontinence severity and caregiver duration of care; inconsistent intervention adherence
Colling et al 2003 ⁴	Randomised, delayed intervention controlled, quasi-experimental trial. N = 106 (number of elder-caregiver dyads vs. independent elders not reported)	'Pattern Urge-Response Toileting': a form of habit training for urinary incontinence wherein baseline patterns of voiding are used to define a personalised toileting schedule	QoL: Not reported Incontinence: Significant reductions in average incontinence volume and frequency in intervention group vs. small, non-significant reductions in control group	26.4% attrition; significant differences between control and experimental groups' baseline incontinence frequency and volume; inconsistent intervention adherence

Table 3 Risk of Bias

Study	- High risk, + Low risk, ? Some concerns					
	Randomisation process	Deviations from intended interventions	Missing outcome data	Measurement of the outcome	Selection of the reported results	Overall
Bear et al 1997 ¹	+	-	-	-	?	-
Jirovec et al 2001 ²	+	?	+	+	?	?
Engberg et al 2002 ³	+	?	+	+	+	?
Colling et al 2003 ⁴	+	-	+	+	?	-

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