

Improving nurse engagement in continence care

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Abstract: Urinary (UI) and fecal incontinence (FI) are troublesome conditions for many in society; both UI and FI increase in prevalence with increasing age. Despite well-recognized effects on health, well-being and quality of life, incontinence is often seen by care providers and payers as a social problem, rather than a health related one. Nurses are in a key position to assist those affected by UI. Nurses have the potential to identify people with incontinence, establish appropriate interventions and provide valuable education to empower patients. Indeed, nurses are ideally placed to perform the initial assessment and management of incontinence, that portion of the care pathway which is crucial, but often poorly done. Unfortunately, this is not always easily implemented; nursing staff have identified environmental barriers, such as lack of time at work, and consider UI a low priority that prevents the facilitation of interventions. This article reviews the evidence on nursing involvement, or lack of it, in continence care and suggests a strategy to improve the situation, involving a complex intervention of knowledge translation.

Keywords: nursing, continence, knowledge transfer, continence specialist nurses

The problem and its current state

Constituting one of the more common features of later life, urinary (UI) and fecal incontinence (FI) are troublesome conditions for many in society; both UI and FI increase in prevalence with increasing age.^{1,2} Current prevalence estimates suggest that UI affects the lives of an estimated 400 million persons worldwide.³ The prevalence of FI among community-dwelling US adults was recently estimated at 8.39%, with FI being more common in women when they also had UI.² Despite well-recognized effects on health, well-being and quality of life, incontinence is often seen as more of a social problem by care providers and payers, rather than a health-related problem.

Published data reveal that the proportion of persons with UI who express a felt need for care is far below the proportion of people with the condition; the same is also true for FI. Incontinence is a stigmatized condition; people with the problem go to great lengths to hide their incontinence from others, adopt changes in lifestyle to accommodate to a new “normal” existence and delay seeking appropriate help. In fact, symptom severity and the extent to which the symptoms become “disabling” appear to precipitate health care seeking. Lagace et al found that 72.0% of those currently afflicted with UI had not spoken to physicians about the problem, whereas 37.0% indicated that they would have sought care if they had been aware of the available tests and effective treatments.⁴

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Women in particular often believe that incontinence is an inevitable consequence of childbirth and aging; a minority of incontinent women ever consult health professionals about the problem.⁵ In a more recent Canadian study, two out of three in 4,000 community-dwelling women of over 65 years of age held the belief that incontinence was a normal part of aging. Those women who held this belief and had incontinence had a worse quality of life than those who did not but were no less likely to have sought help for their condition or attempted to manage it.⁶ People with incontinence who do seek help often experience suboptimal care; in an audit of continence care across England, Wales and Northern Ireland, the majority of patients with incontinence did not receive an individual assessment of their problem; the approach toward many older people tended to focus on methods of containment.⁷ Additionally, older adults were less likely to receive guideline-adherent standards of care than younger adults.^{8–10}

People with incontinence also experience clinician-related barriers to care; many of the attitudes possessed by people with incontinence are reflected in their clinicians, somehow minimizing the importance of the condition and reinforcing the belief that incontinence is not a serious enough problem about which to “bother the doctor”.^{11,12} Outside of studies of continence programs involving specialist continence nurse services,^{13–15} little is known about people seeking continence information directly from nurses. It is unknown as to whether generalist nurses are seen as having knowledge of continence care by the public, as nursing roles are generally poorly understood,¹⁶ or to what extent health system limitations restrict direct access to nurses, including advanced practice nurses such as nurse practitioners,¹⁷ who may have additional skills and knowledge in continence assessment and management.

What limits nursing engagement in continence promotion and care?

Nurses are in a key position to assist those affected by UI. Nurses have the potential to identify people with incontinence, establish appropriate interventions and provide valuable education to empower patients. Indeed, nurses are ideally placed to perform the initial assessment and management of incontinence, that portion of the care pathway which is crucial, but often poorly done. Unfortunately, this is not always easily implemented; nursing staff have identified environmental barriers, such as lack of time at work, and consider UI a low priority that prevents the facilitation of interventions.¹⁸ Outdated attitudes and lack of basic understanding of incontinence also limit nurses’ engagement in continence care, with many nurses also expressing the opinion that

incontinence is a normal, expected consequence of aging.¹⁹ Dingwall and McLafferty reported that in hospitals, nurse-led strategies for continence care tended to focus on product identification and containment of incontinence, rather than active treatment. Conflicting clinical priorities, varying staff approaches to urinary continence and deficits in education were cited among the barriers to promoting continence.¹⁹ A number of studies concluded that a demonstrable lack of continence knowledge on the part of nursing staff translated into poor continence care.^{19,20} These attitudes are not confined to any particular care setting and have been reported in acute care, community care and long-term care for older people.^{21–23}

Perhaps unsurprisingly, given such beliefs and educational deficits, in comparison to other conditions, incontinence is not seen by nurses as a priority for active management.²¹ A study on acute care nursing noted what the authors called inertia in continence care, where in 600 records from 132 nurses, there was little documentation of assessment or diagnosis of UI in hospital inpatients.²⁴ Factors related to the suboptimal provision of continence care by nursing staff have been examined in a number of studies using a variety of methods; these can be classified into personal (eg, attitude, belief, lack of content knowledge), team-based (eg, low priority, low commitment) and organizational (eg, high workload, limited access to required resources, lack of institutional support) factors.^{22,25,26} Nurses in practice appear to be deficient in knowledge on how to deal with UI, with their care focusing on containment.^{27,28} In a Taiwanese study comparing the knowledge and attitudes of registered nurses and nursing assistants in nursing homes, the level of continence knowledge in nurses was higher than in the nursing assistants but nurses had more negative attitudes than the assistants. Reported practices did not differ between the groups and were centered on changes of wet clothes, linens and diapers with little assessment or active management of the problem.²⁹ Multiple reports have identified nurses’ lack of sufficient knowledge as a barrier to appropriate interventions for patients living with incontinence.^{30,31} A recent survey in China has highlighted that low levels of knowledge originate at the student level, although, in this study, there appeared to be an interest in gaining knowledge.³² This is not always borne out however; whereas some nurses consider it important to extend their knowledge and skills in UI, most nurses have not undertaken any further UI education since graduation.^{33,34} This is similar to the situation reported in a survey of primary care physicians in Western Canada.³⁵ Evidence from advanced practice nurses suggests that they appear to have positive attitudes, perceptions and a good level

of knowledge of UI in women but even they had difficulty in applying this knowledge to their clinical setting. This led the authors of the paper to call for more relevant practical placements for these nurses.³⁶

So, wherein lies the problem? Is there enough educational delivery? A UK-wide study of postsecondary education for health professions found that there was no continence-related education in 14% of 294 curricula and that the mean number of hours devoted to incontinence was 4.7 (SD 4.3), findings that have been replicated elsewhere, where nursing staff indicate deficiencies in continence education.^{37,38}

Can education help? Evidence on the effect of educational programs alone suggests an immediate impact, but there are limited data on sustainability of changes in practice or alterations in attitude. A Swiss study aimed at nursing staff and care aides working with residents with dementia comprised one educational session of 4 hours followed up with six case conferences on each ward in each of the seven participating nursing homes. The first case conference occurred ~2 weeks after the education program and then at monthly intervals thereafter. The program resulted in statistically significant improvements in the quality of life and no worsening in UI over the 6-month duration of the study.³⁹ Likewise, an online educational program designed for rural and remote nurses in Korea demonstrated, although in a small number of more highly qualified nurses completing the evaluations, significant improvements in knowledge of and attitudes toward UI.⁴⁰ In a study of orthopedic care, where initially there was no application of guidelines and an identified knowledge gap,⁴¹ a facilitated and monitored intervention improved care delivery in one unit,⁴² but there has been no long-term assessment of sustainability. Similar short-term improvements have been reported in stroke care,⁴³ nursing homes, delivering education by webinar⁴⁴ and by mixed interventions.⁴⁵

How might things be improved?

Methods to improve nurse provision of continence care need to be multipronged, and include articulation and stratification of nursing responsibilities, knowledge mobilization to improve use of guidelines and system changes that increase access to specialized nursing services. These strategies would support better access to continence care and have potential for improvement in patient outcomes.

Stratification of nursing responsibilities

Given the complexity of incontinence and other lower urinary tract symptoms (LUTS), and the barriers to generalist

nurses undertaking continence assessment and management identified in previous studies, it is unrealistic to expect that all nurses have expertise in this area. Stratification of nursing responsibilities and expectations may be a more realistic approach. For the generalist nurse, basic educational preparation should include continence care with continuing education to assist with application to the specific context (acute, community or continuing care). Recently, Ostaszkiwicz⁴⁶ has suggested that for people who are care-dependent, front-line nurses and care providers should be prepared to conduct a foundational continence assessment focused on identifying the support needed to maintain continence or to manage incontinence, ensure the care is congruent with the individual's (or proxy's) preferences and view on dignity, recognize bladder/bowel signs requiring further assessment, identify sociocultural and environmental factors contributing to incontinence and provide "targeted and individualized continence care". Although the author specifically addresses those who are care dependent, the concept of a foundational assessment has the potential to be adapted for use by generalist nurses in a variety of settings. Delineation of what constitutes such an assessment, including case identification, needs identification in the context of acute, long-term and community care.

Specialized nurses should provide the next level of assessment and service,⁴⁷ which requires additional specialized preparation to conduct. Outcomes for nurse-led continence services, with care delivered by nurses with specialized education in continence, have been positive. In the UK, nurse-led continence services were effective in reducing symptoms, with high levels of patient satisfaction.⁴⁸ A subsequent qualitative evaluation of data from the service identified interpersonal as well as technical skills, including thoroughness, specialization and knowledge, as the key elements of patient satisfaction.¹⁵ A specialty continence nurse service, working with general practitioners in a primary care setting in the Netherlands, was reported as being cost-effective.¹⁴ Choi et al reported improved quality of life and self-efficacy for primary care patients enrolled in a Hong Kong nurse-led continence care program compared with a control group of primary care patients with LUTS.⁴⁹

Programs to prepare nurses with specialty education in continence care have been in existence for at least two decades,⁵⁰⁻⁵² although often limited to specific countries or regions. In their 2009 position statement, the USA-based Wound, Ostomy and Continence Nurses Society described the continence nurse as having an in-depth knowledge of normal voiding and defecation and common bladder and bowel

function alterations, undertaking focused assessment with development of a nursing diagnosis and providing education on conservative management, including behavioral therapies, containment products, skin care and pelvic floor rehabilitation.⁵³ A role profile of the nurse continence specialist was developed and validated internationally under the auspices of the International Continence Society in 2016,⁵⁴ identifying that these clinicians hold specialized theoretical as well as experiential knowledge in bladder, bowel and pelvic floor dysfunction, providing continence services to a wide range of patient populations in diverse settings. Specialist continence nurses have the ability to undertake initial assessment and management of continence-related issues, as well as assume a case coordinator role.

Advanced practice nurses are defined as registered nurses with “expert knowledge base, complex decision-making skills and clinical competencies for expanded practice”⁵⁵ and are usually prepared at a graduate level of education. Their roles vary from country to country, but include additional skills and knowledge, including, where allowed by legislation, diagnosis based on comprehensive assessment, investigations and prescribing of therapeutics, including pharmacological interventions. Although not all advanced practice nurses have in-depth knowledge of continence care,³⁶ those with additional preparation in the specialty can effectively extend the services provided through nursing.⁵⁶

Use of guidelines and knowledge mobilization strategies

The introduction of national and international guidelines has led to an opportunity to improve the standards of care for people with incontinence. Guidelines and competency documents are available from many professional medical and nursing organizations^{57,58} and are relevant to various health care settings, for example, rehabilitation⁵⁹ and general community nursing,⁵⁹ and across different jurisdictions, for example, Japan,⁶⁰ the USA⁵⁷ and France,⁶¹ and for people of different ages and sexes.^{62,63} Unfortunately, these have been available for many years with variable uptake and evaluation and with continuing calls for attention and improvement.^{63–66}

Thus, there remains a problem, one of implementation, a well-recognized phenomenon in guideline generation.⁶⁷ There are highly variable efforts put into dissemination of guidelines and their implementation. The National Institute for Health and Care Excellence, in England and Wales, is a notable exception, with a plethora of online materials developed to support this, including advice for providers and payers of health care services and patients themselves.⁷⁷

Additionally, there are auditable measures of performance which service providers can adopt to assess quality of continence care. Until 2010, England and Wales led the way in assessing the quality of service provision for adults with UI and FI in primary, hospital and nursing home care against national standards, using a feedback method which led to demonstrable improvements in care.^{7,8} Other attempts at quality assurance, conducted in the Netherlands, show partial adherence to guidelines by Dutch general practitioners.⁶⁸ In a study of uptake of the European Stroke Strategies by nurses working in stroke and neurology units, 90% of respondents reported assessing for postvoid residual urine, and although many respondents reported use of pads as an intervention (92%), their use of indwelling catheters was much lower than 42%.⁶⁹ Early mobilization was reported, but a description of toileting strategies was not included. This suggests that within specialized practice areas, uptake of guidelines may be good, but comparison of nursing practice in specialty versus nonspecialty areas, and in other settings, is needed to obtain a more comprehensive understanding of nurse adherence to continence-related guidelines in a variety of settings.

Undoubtedly, guideline implementation is complex and needs to be appropriate to context;⁷⁰ no one-size implementation attempt fits all. Whereas the evidence exists, the degree of facilitation required to gain improvement needs to be adapted to the context of the health care setting in which implementation is intended. The information needs to be appropriate, the reason for adoption needs to make sense and the requirement for change needs to be recognized. A paper by Lanham et al⁷¹ describes four main elements of implementation which appear to be required for success. Successful implementation requires the recognition of unpredictability, the realization that the people for whom implementation is planned may spontaneously self-organize in a way different from that which was expected, that any facilitation needs to foster and encourage relationships and that overall, everything needs to make sense to the recipients, including not only the new way of doing things but also the rationale for change and improvement. Likewise, monitoring of the process appears to be associated with a higher degree of active implementation of innovations.⁷² As continence interventions are undoubtedly complex, evaluation needs to be appropriate and meaningful to its intended recipients. The effectiveness of using educational materials, educational meetings, reminders and audit and feedback on improving clinical outcomes in various combinations and with other knowledge translation interventions has been proven.⁷³

So, the opportunity for improvement appears to be that of a classical knowledge-to-action paradigm.⁷⁴ The evidence exists, data on effective continence care and care standards abound. Additionally, there are data on how to provide such care from a number of jurisdictions. A multipronged intervention, across health care settings, therefore appears appropriate, ranging from education at all levels of provision for all levels of nurses, ongoing professional development and the use of continence specialist practitioners as champions of care, working within multiprofessional teams in order to set acceptable ethos. Data suggest that continence specialists, unsurprisingly, deliver a higher standard of care,^{48,54,63} but the high degree of specialization is unaffordable, and perhaps inappropriate, for many patients. Continence (either independent continence or dependent continence, depending upon the target population)⁷⁵ needs to be seen as a normal state, and efforts need to be focused on appropriate initial assessment and management as this is where the gains will be made. Regular assessment and monitoring of practice needs to be incorporated into existing frameworks in order to drive up the quality of care. Policymakers and payers remain to be convinced of the importance of continence care and the potentially great financial and social gains of providing high-quality care to the population.¹⁴

Improving access to specialized nursing services

A systematic review of efficacy of continence service design for community-dwelling persons included a recommendation to move case coordination of continence care to nurses with specialized preparation in the practice area.⁴⁷ The authors concluded that a nurse-led model is effective, both from a clinical and a cost-effectiveness perspective. At the present time, continence services in many jurisdictions lack consistency. Movement to a new model of care delivery that includes direct access to nursing services for continence care may be challenging in many health systems. Newman et al⁷⁶ identify that one strategy to increase continence services is the development of policy documents to influence health service planners to invest. Newman et al also advocate for a modular service model that includes case detection, specialist assessment and treatment, case coordination, caregiver support, community-based support, use of containment products (after comprehensive assessment of need) and technology. A variety of other service models have been described in the literature, including primary care, although the addition of nurses and nurse practitioners with specialized continence knowledge has been shown to improve outcomes in this

setting.¹³ Newman et al suggested that a chronic disease model, used successfully with other conditions, after initial primary care contact, may be an effective strategy. In addition to nursing, provisions for multidisciplinary services, such as access to pelvic floor physical therapists, and physician specialist referral are needed in any comprehensive model of continence care.

Summary and conclusion

Continence issues are common and affect the quality of lives of those who suffer with them. Although nurses have the potential to improve patient outcomes, continence care is not always a priority and many nurses lack the educational preparation and understanding of continence-related issues to deliver high-quality care. Nurses with specialized preparation in continence care have been shown to have the requisite knowledge and skills to deliver effective high-quality continence care in specialized services. Stratifying nursing responsibilities between generalist and specialist nurses, making use of effective knowledge translation strategies to improve adherence to evidence-based practice guidelines and increasing access to specialized nursing services for continence care are ways to improve the delivery of continence services and patient outcomes.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Irwin DE, Milsom I, Hunskaar S, et al. Population-based survey of urinary incontinence, overactive bladder, and other lower urinary tract symptoms in five countries: results of the EPIC study. *Eur Urol*. 2006;50:1306–1314.
2. Ditah I, Devaki P, Luma HN, et al. Prevalence, trends, and risk factors for fecal incontinence in United States adults, 2005–2010. *Clin Gastroenterol Hepatol*. 2014;12:636–643.
3. Irwin DE, Kopp ZS, Agatep B, Milsom I, Abrams P. Worldwide prevalence estimates of lower urinary tract symptoms, overactive bladder, urinary incontinence and bladder outlet obstruction. *BJU Int*. 2011;108:1132–1138.
4. Lagace EA, Hansen W, Hickner JM. Prevalence and severity of urinary incontinence in ambulatory adults: an UPRNet study. *J Fam Pract*. 1993;36:610–614.
5. Swanson JG, Skelly J, Hutchison B, Kaczorowski J. Urinary incontinence in Canada. National survey of family physicians' knowledge, attitudes, and practices. *Can Fam Phys*. 2002;48:86–92.
6. Shaw C, Rajabali S, Ibrahim Q, Tannenbaum C, Wagg A. Is the belief that urinary incontinence is normal for ageing related to older women's experience of urinary incontinence. International Continence Society (ICS); September 13, 2017; Florence. Abstract 30.
7. Wagg A. *National Audit of Continence Care*. London: Royal College of Physicians of London; 2010.
8. Wagg A, Duckett J, McClurg D, Harari D, Lowe D. To what extent are national guidelines for the management of urinary incontinence in women adhered? Data from a national audit. *BJOG*. 2011;118:1592–1600.

9. Gibson W, Harari D, Husk J, Lowe D, Wagg A. A national benchmark for the initial assessment of men with LUTS: data from the 2010 Royal College of Physicians National Audit of Continence Care. *World J Urol*. 2016;34:969–977.
10. Harari D, Husk J, Lowe D, Wagg A. National Audit of Continence Care: adherence to National Institute for Health and Clinical Excellence (NICE) guidance in older versus younger adults with faecal incontinence. *Age Ageing*. 2014;43:785–793.
11. Horrocks S, Somerset M, Stoddart H, Peters TJ. What prevents older people from seeking treatment for urinary incontinence? A qualitative exploration of barriers to the use of community continence services. *Fam Pract*. 2004;21:689–696.
12. Peters TJ, Horrocks S, Stoddart H, Somerset M. Factors associated with variations in older people's use of community-based continence services. *Health Soc Care Commun*. 2004;12:53–62.
13. Albers-Heitner PC, Lagro-Janssen TA, Joore MM, et al. Effectiveness of involving a nurse specialist for patients with urinary incontinence in primary care: results of a pragmatic multicentre randomised controlled trial. *Int J Clin Pract*. 2011;65:705–712.
14. Holtzer-Goor KM, Gaultney JG, van Houten P, et al. Cost-effectiveness of including a nurse specialist in the treatment of urinary incontinence in primary care in the Netherlands. *PLoS One*. 2015;10:e0138225.
15. Shaw C, Williams KS, Assassa RP. Patients' views of a new nurse-led continence service. *J Clin Nurs*. 2000;9:574–582.
16. Girvin J, Jackson D, Hutchinson M. Contemporary public perceptions of nursing: a systematic review and narrative synthesis of the international research evidence. *J Nurs Manag*. 2016;24:994–1006.
17. Quinn WB, Brassard A, O'Brien M, Reinecke P. Health care and nursing policy: impact of the campaign for action to increase consumer access to care. *Geriatr Nurs*. 2017;38:362–364.
18. Peplar J, Wragg L. Development of a multidisciplinary continuing care continence assessment tool and continence care pathway. *Aust N Z Contin J*. 2010;16:14–16, 18, 20, 22–23.
19. Dingwall L, McLafferty E. Do nurses promote urinary continence in hospitalized older people? An exploratory study. *J Clin Nurs*. 2006;15:1276–1286.
20. Dingwall L. Promoting effective continence care for older people: a literature review. *Br J Nurs*. 2008;17:166–172.
21. Booth J, Kumlien S, Zang Y, Gustafsson B, Tolson D. Rehabilitation nurses practices in relation to urinary incontinence following stroke: a cross-cultural comparison. *J Clin Nurs*. 2009;18:1049–1058.
22. Resnick B, Keilman LJ, Calabrese B, et al. Nursing staff beliefs and expectations about continence care in nursing homes. *J Wound Ostomy Contin Nurs*. 2006;33:610–618.
23. Cooper G, Watt E. An exploration of acute care nurses' approach to assessment and management of people with urinary incontinence. *J Wound Ostomy Contin Nurs*. 2003;30:305–313.
24. Artero-Lopez C, Marquez-Hernandez VV, Estevez-Morales MT, Granados-Gamez G. Inertia in nursing care of hospitalized patients with urinary incontinence. *J Clin Nurs*. 2018;27:1488–1496.
25. Cheater FM, Baker R, Gillies C, et al. The nature and impact of urinary incontinence experienced by patients receiving community nursing services: a cross-sectional cohort study. *Int J Nurs Stud*. 2008;45:339–351.
26. Tannenbaum C, Labrecque D, Lepage C. Understanding barriers to continence care in institutions. *Can J Aging*. 2005;24:151–159.
27. Albers-Heitner P, Berghmans B, Nieman F, Lagro-Janssen T, Winkens R. How do patients with urinary incontinence perceive care given by their general practitioner? A cross-sectional study. *Int J Clin Pract*. 2008;62:508–515.
28. Newman DK, Ee CH, Gordon D, et al. Continence promotion, education, and primary prevention. In: Abrams P, Cardozo L, Khoury S, Wein A, editors. *4th International Consultation on Incontinence*. Paris: Healthcare Publications; 2009:1643–1684.
29. Lin SY, Wang RH, Lin CC, Chiang HY. Competence to provide urinary incontinence care in Taiwan's nursing homes: perceptions of nurses and nurse assistants. *J Wound Ostomy Contin Nurs*. 2012;39:187–193.
30. Collette C, Leclerc G, Tu le M. Effectiveness of a geriatric urinary incontinence educational program for nursing staff. *Nurs Leadersh (Tor Ont)*. 2003;16:99–109.
31. Wilson L. Continence and older people: the importance of functional assessment. *Nurs Older People*. 2003;15:22–28; quiz 30.
32. Luo Y, Parry M, Huang YJ, Wang XH, He GP. Nursing students' knowledge and attitudes toward urinary incontinence: a cross-sectional survey. *Nurse Educ Today*. 2016;40:134–139.
33. DuBeau CE, Ouslander JG, Palmer MH. Knowledge and attitudes of nursing home staff and surveyors about the revised federal guidance for incontinence care. *Gerontologist*. 2007;47:468–479.
34. Vinsnes AG, Harkless GE, Haltbakk J, Bohm J, Hunskaar S. Healthcare personnel's attitudes towards patients with urinary incontinence. *J Clin Nurs*. 2001;10:455–462.
35. Nguyen K, Hunter KF, Wagg A. Knowledge and understanding of urinary incontinence: survey of family practitioners in northern Alberta. *Can Fam Phys*. 2013;59:e330–e337.
36. Keilman LJ, Dunn KS. Knowledge, attitudes, and perceptions of advanced practice nurses regarding urinary incontinence in older adult women. *Res Theory Nurs Pract*. 2010;24:260–279.
37. McClurg D, Cheater FM, Eustice S, Burke J, Jamieson K, Hagen S. A multi-professional UK wide survey of undergraduate continence education. *NeuroUrol Urodyn*. 2013;32:224–229.
38. Terzoni S, Montanari E, Mora C, Destrebecq A. Urinary incontinence in adults: nurses' beliefs, education and role in continence promotion: a narrative review. *Arch Ital Urol Androl*. 2011;83:213–216.
39. Kohler M, Schwarz J, Burgstaller M, Saxer S. Incontinence in nursing home residents with dementia: influence of an educational program and nursing case conferences. *Z Gerontol Geriatr*. 2018;51:48–53.
40. De Gagne JC, Park S, So A, Wu B, Palmer MH, McConnell ES. A urinary incontinence continuing education online course for community health nurses in South Korea. *J Contin Educ Nurs*. 2015;46:171–178.
41. Halleberg NM, Forsman H, Ostaszkievicz J, Hommel A, Eldh AC. Urinary incontinence and its management in patients aged 65 and older in orthopaedic care—what nursing and rehabilitation staff know and do. *J Clin Nurs*. 2017;26:3345–3353.
42. Halleberg NM, Forsman H, Wallin L, Ostaszkievicz J, Hommel A, Eldh AC. Promoting evidence-based urinary incontinence management in acute nursing and rehabilitation care: a process evaluation of an implementation intervention in the orthopaedic context. *J Eval Clin Pract*. Epub 2018 Feb 7.
43. Frasure JS. The effectiveness of four translation strategies on nurses' adoption of an evidence-based bladder protocol. *J Neurosci Nurs*. 2014;46:218–226.
44. Rahman AN, Schnelle JF, Osterweil D. Implementing toileting trials in nursing homes: evaluation of a dissemination strategy. *Geriatr Nurs*. 2014;35:283–289.
45. Ehlman K, Wilson A, Dugger R, Eggleston B, Coudret N, Mathis S. Nursing home staff members' attitudes and knowledge about urinary incontinence: the impact of technology and training. *Urol Nurs*. 2012;32:205–213.
46. Ostaszkievicz J. Reframing continence care in care-dependence. *Geriatr Nurs*. 2017;38:520–526.
47. Wagg AS, Newman DK, Leichsenring K, van Houten P. Developing an internationally-applicable service specification for continence care: systematic review, evidence synthesis and expert consensus. *PLoS One*. 2014; 9:e104129.
48. Williams KS, Assassa RP, Cooper NJ, et al. Clinical and cost-effectiveness of a new nurse-led continence service: a randomised controlled trial. *Br J Gen Pract*. 2005;55:696–703.
49. Choi EP, Chin WY, Lam CL, Wan EY, Chan AK, Chan KH. Evaluation of the effectiveness of nurse-led continence care treatments for Chinese primary care patients with lower urinary tract symptoms. *PLoS One*. 2015;10: e0129875.
50. Williams KS, Assassa RP, Smith NK, Shaw C, Carter E. Educational preparation: specialist practice in continence care. *Br J Nurs*. 1999;8:1198–1207, 1202, 1204 passim.

51. Monz B, Hampel C, Porkess S, et al. A description of health care provision and access to treatment for women with urinary incontinence in Europe: a five-country comparison. *Maturitas*. 2005;52 Suppl 2:S3–S12.
52. Albers-Heitner P, Berghmans B, Joore M, et al. The effects of involving a nurse practitioner in primary care for adult patients with urinary incontinence: the PromoCon study (Promoting Continence). *BMC Health Serv Res*. 2008;8:84.
53. Role of the wound, ostomy continence nurse or continence care nurse in continence care. *J Wound Ostomy Contin Nurs*. 2009;36:529–531.
54. Paterson J, Ostaszkievicz J, Suyasa IG, Skelly J, Bellefeuille L. Development and validation of the role profile of the nurse continence specialist: a project of the International Continence Society. *J Wound Ostomy Contin Nurs*. 2016;43:641–647.
55. International Council of Nurses. NP/APN Network: definition and characteristics of the role. Available from: <https://international.aanp.org/Practice/APNRoles>. Accessed June 25, 2018.
56. Teunissen DT, Stegeman MM, Bor HH, Lagro-Janssen TA. Treatment by a nurse practitioner in primary care improves the severity and impact of urinary incontinence in women: an observational study. *BMC Urol*. 2015;15:51.
57. Qaseem A, Dallas P, Forcica MA, et al. Nonsurgical management of urinary incontinence in women: a clinical practice guideline from the American College of Physicians. *Ann Intern Med*. 2014;161:429–440.
58. Rantell A, Dolan L, Bonner L, Knight S, Ramage C, Toozs-Hobson P. Minimum standards for continence care in the UK. *Neurourol Urodyn*. 2016;35:400–406.
59. Cave CE. Evidence-based continence care: an integrative review. *Rehabil Nurs*. 2017;42:301–311.
60. Takahashi S, Takei M, Nishizawa O, et al. Clinical guideline for female lower urinary tract symptoms. *Low Urin Tract Symptoms*. 2016;8:5–29.
61. Descazeaud A, Robert G, Delongchamps NB, et al. Bilan initial, suivi et traitement des troubles mictionnels en rapport avec hyperplasie bénigne de prostate : recommandations du CTMH de l'AFU [Initial assessment, follow-up and treatment of lower urinary tract symptoms related to benign prostatic hyperplasia: guidelines of the LUTS committee of the French Urological Association]. *Prog Urol*. 2012;22:977–988. French [with English abstract].
62. Beltman M, Deurloo JA, van Leerdam FJ, et al. Jeugdgezondheidszorgrichtlijn 'Zindelijkheid urine en feces [Guideline 'Incontinence urine and feces' of the Dutch Preventive Youth Health Care]. *Ned Tijdschr Geneesk*. 2012;156:A4814. Dutch [with English abstract].
63. Reuben DB, Ganz DA, Roth CP, McCreath HE, Ramirez KD, Wenger NS. Effect of nurse practitioner comanagement on the care of geriatric conditions. *J Am Geriatr Soc*. 2013;61:857–867.
64. Jirovec MM, Wyman JF, Wells TJ. Addressing urinary incontinence with educational continence-care competencies. *Image J Nurs Sch*. 1998;30:375–378.
65. Button D, Roe B, Webb C, Frith T, Colin-Thome D, Gardner L. Consensus guidelines for the promotion and management of continence by primary health care teams: development, implementation and evaluation. NHS Executive Nursing Directorate. *J Adv Nurs*. 1998;27:91–99.
66. Fiers S. Competencies for continence care nurses. *J Wound Ostomy Contin Nurs*. 1994;21:135–136.
67. Wagg A, Cardozo L, Chapple C, et al. Overactive bladder and continence guidelines: implementation, inaction or frustration? *Int J Clin Pract*. 2008;62:1588–1593.
68. Albers-Heitner P, Berghmans B, Nieman F, Lagro-Janssen T, Winkens R. Adherence to professional guidelines for patients with urinary incontinence by general practitioners: a cross-sectional study. *J Eval Clin Pract*. 2008;14:807–811.
69. Tulek Z, Poulsen I, Gillis K, Jonsson AC. Nursing care for stroke patients: a survey of current practice in 11 European countries. *J Clin Nurs*. 2018;27:684–693.
70. Wallin L, Profetto-McGrath J, Levers MJ. Implementing nursing practice guidelines: a complex undertaking. *J Wound Ostomy Contin Nurs*. 2005;32:294–300; discussion 300–301.
71. Lanham HJ, Leykum LK, Taylor BS, McCannon CJ, Lindberg C, Lester RT. How complexity science can inform scale-up and spread in health care: understanding the role of self-organization in variation across local contexts. *Soc Sci Med*. 2013;93:194–202.
72. Durlak JA, DuPre EP. Implementation matters: a review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Commun Psychol*. 2008;41:327–350.
73. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q*. 2004;82:581–629.
74. Graham ID, Logan J, Harrison MB, et al. Lost in knowledge translation: time for a map? *J Contin Educ Health Prof*. 2006;26:13–24.
75. Fonda D, Abrams P. Cure sometimes, help always--a "continence paradigm" for all ages and conditions. *Neurourol Urodyn*. 2006;25:290–292.
76. Newman DK, Cowan R, Griebing TL, Rantell A, van Houten P, Palmer MH. Primary prevention, continence promotion, models of care and education. In: Abrams P, Cardozo L, Wagg A, Wein A, editors. *Incontinence*. 6th ed. Bristol: International Continence Society; 2017:2427.
77. National Institute for Health and Care Excellence (NICE). Urinary incontinence in women: management. Clinical guideline [CG171]. 2013. Available from: <https://www.nice.org.uk/guidance/qs77/resources>. Accessed March 2, 2018.

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