DECREASING URINARY INCONTINENCE IN THE HOME HEALTH SETTING

by

Maureen Albertson

Georgann Weissman, DNP, GNP-BC, CNE, Faculty Mentor and Chair

Jo Ann Manty, DNP, Committee Member

Julita Lathers, MSN, Committee Member

Patrick Robinson, PhD, Dean, School of Nursing and Health Sciences

A DNP Project Presented in Partial Fulfillment
Of the Requirements for the Degree
Doctor of Nursing Practice

For submission to Home Health Care Now

Capella University

July 2017
Abstract

BACKGROUND: Urinary incontinence (UI) in the home care patient population poses a risk for complications and hospitalization. The aim of this project was to develop and implement a protocol for UI to promote continence in the home health agency UI population.

METHODS: Data were collected from a convenience sample of 26 participants 80 years of age or older in a suburban midsize home care agency. All participants were diagnosed with UI as documented in the Outcomes and Assessment Information Set (OASIS). OASIS question M1610 was used to identify patients with UI status, and M1650 was used, to identify UI frequency. The outcomes for these questions were assessed to examine change over time in UI status and frequency.

INTERVENTION: Eligible patients completed a three-day bladder diary. Then, patient education was conducted on UI, risk factors, bladder training, pelvic floor exercises and hydration/nutrition parameters. Patients then completed three-day bladder diaries post-intervention.

RESULTS: At pretest, 100% of the participants were incontinent. At posttest, twenty four participants (92.3%) were incontinent. The results suggested that the median frequency of urinary incontinence declined overtime from 2 (range: 1-4) at pretest to 1 (range 0-4) at posttest. This decline was statistically significant ($z = -3.83; p < .001$).

CONCLUSIONS: The intervention had a positive effect on UI status and frequency. Future studies should examine changes in the UI complications and hospitalization rates.

Keywords: Urinary incontinence, quality improvement plan, bladder diary, pelvic floor exercises, bladder training
Problem Description

Urinary incontinence in the senior population is an issue that impacts senior citizen’s ability to age in place. Urinary incontinence (UI) is not a normal part of aging, yet it is met with feelings of shame and attempts to hide the issue. In fact, UI places seniors at risk for falls, infection, and skin breakdown; UI is the second leading reason for institutionalization of aging patients (National Association for Continence [NAFC], n.d.). In the home healthcare setting, agencies gather data on UI but do not necessarily address this issue with patients. The implementation of a set educational intervention to address UI among incontinent patients allows for a quality improvement project (QIP) to promote optimal patient outcomes.

UI effects many aspects of a patient’s life including safety, independence, self-esteem and the avoidance of hospitalizations. Home health care nurses commonly encounter patients with UI, including associated challenges and family dynamics, when offering care for patients in their home setting. Home health nurses’ goal is to keep the patient safely in their home setting, allowing patients to age in place where they do best physically and emotionally. Interventions to promote safety and independence are a primary focus in home health care, -to promote maximum independence. The UI patient perspective is to gain improvement in continence and reduce the risk for falls, infections and decreased quality of life (QOL). The NAFC (n.d.) reports that over twenty-five million Americans suffer from urinary incontinence and 80% could be improved or cured. A review of the literature on UI reflects a lack of consistent patient teaching to be a gap in clinical interventions in health care overall. Day, Leahey-Wanen, Loughran and O’Sullivan (2014) found that 72% of conveniently sampled participants had a poor understanding of UI, 20% were educated on UI and were not aware that UI posed any risk to
participants health. Tang et al. (2014) discussed the gap in elderly patients understanding of UI and the impact of this knowledge gap on quality of life. Strickland (2014) explored why patients did not seek medical interventions for UI. The themes within the literature suggested that the misconception of UI as a normal part of aging was prevalent. Further, that lack of rapport with health care providers makes older adults less likely to discuss UI. Lack of knowledge on treatments or interventions for UI was also prevalent.

In light of this literature base the importance of addressing this education gap and then following the outcomes became imperative in understanding the best methods to promote continence. From a home health provider’s perspective, examining the lack of teaching on UI across the healthcare continuum became a concern due to the broad effects of UI on patient health. The lack of a UI education protocol within the agency added to the problem, impairing patient improvement and impacting patient quality of life. Therefore, the lack of a consistent practice and patient teaching became the focus of a protocol development as a sustainable intervention.

Available Knowledge

It is well established that UI increases patients risk for falls, decreased functionality and quality of life (QoL) (Aguilar et al., 2011). These negative health outcomes spurred exploration further into specific interventions like pelvic floor muscle exercises (PFME), and behavior modifications which positively decrease UI. A review of the literature on quality of life for community dwelling elderly residents with UI was a conducted. The inability of the medical community to address this issue comprehensively was common theme. Aguilar et al. (2011) estimated the risk for functional decline and falls driven by UI. This project found that UI was associated with decreased ADL and IADL function as well as self- perceptions of poor health by
the patients. This conclusion is supported in research conducted by Foley et al. (2012), who explored the association between UI and falls. Foley et al. (2012) also examined quality of life issues while assessing fall risk in a cross-sectional study. The results identified an association between UI and falls, while also identifying functional deficits and decreases in patient quality of life as negative outcomes associated with UI. Further, Gregor et al. (2011) conducted a retrospective study on patients in the community to examine whether UI could predict institutionalization or mortality. Results suggested that UI was associated with longer hospital stays and mortality. These first three studies identified the negative effects of UI on QoL.

Several studies support the connection between UI and decreased quality of life. Barentsen et al. (2012) explored the severity of UI and its connection to patient reported quality of life. Barentsen et al. (2012) results suggested that declines in QoL were driven not by the presence of UI itself but rather the severity of UI. Tang et al. (2014) examined patients with neurogenic bladders to study health related quality of life (HRQOL) and health resource use. Tang et al. (2014) also found that the effects of UI decrease QOL as compared to continent neurogenic bladder patients. In a study of community dwelling residents, Sims, Browning, Lundgren-Lindquist and Kendig (2011) found that mental health status and functionality had the greatest impact on UI. Together, these findings suggest that UI severity may be driving the negative health outcomes commonly associated with UI.

In an attempt to reduce UI, Hunkyung, Hideyo and Takao (2011) performed a randomized control trial (RCT) to determine whether performance of pelvic floor muscle exercises (PFME) can impact QoL, function and behavioral management. Results from this study suggested that PFME decreased the severity of UI and improved patient QoL. Therefore, it appears that interventions have the potential to improve UI severity and therefore, mitigate the
risk for falls, mortality, institutionalization, and poorer QoL among older adults. These findings suggest an important need for interventions that raise awareness about UI for both patients and health care professionals. Addressing UI is imperative for patients suffering from UI to maximize their QOL and maintain optimal independent functioning.

Further review allowed for exploration of PFME as an intervention. Talasz et al. (2012) examined hospitalized patients and pelvic floor muscle strength in a cross-sectional study. Results suggest an association between patient cognition and functionality as inhibiting factors in continence. Only 25.5% of the patients could perform PFMEs. This aides practitioners in understanding patients UI and in developing a plan of care. Ferreira et al. (2012) conducted a randomized controlled pilot study comparing a supervised PFME program with an unsupervised protocol. The experimental group reported better outcomes when compared to controls, but both groups demonstrated improved pelvic floor strength. This study indicates that supervision is needed to optimize patient compliance and understanding of PFMEs. Tosum et al. (2014) conducted a RCT to reduce UI by implementation of PFME regimen. The goal of Tosum et al. (2014) was to achieve pelvic floor strength of a grade five. Although some patients achieved this goal, many did not achieve complete continence. However, the reported QOL increase with UI improvement was reflected in their outcomes. Borello-France (2013) conducted a RCT comparing pessary use, behavioral interventions, and combined therapy in female subjects with stress incontinence. A regression analysis was used to examine the barriers and compliance of patients with PFME over 3, 6 and 12 months. Those patients receiving supervised exercise had better results than those completing unsupervised exercise. Patient barriers to PFME included remembering to perform exercises, and effects of progressing memory impairment were also evident in the data. This finding related to memory impairment is important to consider in
developing a protocol designed to maintain awareness of barriers and in this elderly population.

Bladder diaries, education and dietary/hydration assessments were commonly studied in the literature as assessment tools and educational tools. PFME have shown some demonstrated success in improving UI. Bladder retraining is another method used to improve UI. Bladder retraining in conjunction with the use of PFME, was examined by Singh and Arya (2011). Bladder retraining allows for the patient to attain self-awareness and extend bladder emptying as needed. Singh’s study looked at UI pre-test and post intervention and met with success in managing urge incontinence. Wright (2014) also reviewed literature on conservative interventions including pelvic floor muscle training (PFMT), lifestyle modifications and biofeedback. In summary, the literature is supportive of PFMT and behavioral changes in diet, bladder retraining, bladder diaries and hydration teaching to improve UI.

**Specific Aims**

The quality improvement project (QIP) was implemented to support the improvement of patient continence in the home health agency UI population using evidenced based best practices. By improving patient UI, the agency would be improving patient outcomes and decreasing the risks that accompany UI. The project will support the PICOT question of (P) In elderly homecare patients age 80 or greater, how does (I) implementing a Urinary Incontinence Patient Education Protocol (C) compared to no education program, as an intervention for (O) urinary incontinence improvement rates as assessed over a (T) 3 month time period by completing the second aim in measuring and comparing the UI rates for the sample on admission and discharge.
Interventions

This was a quantitative project utilizing a convenience sample of home health care patients from the research site. UI patients were identified on admission to home care services utilizing the Outcomes and Assessment Information Set (OASIS) answer to M1610. After initially identifying patients, UI assessments were completed using a three-day bladder diary. Bladder diaries included a food/fluid diary and urinary urge. Patients and caregivers were educated on the project to determine interest in participation which included an assessment for the need of caregiver assistance in data entry for memory impaired patients. All patients received the same education protocol. The UI education protocol included teaching on UI causation, urinary tract function, and common bladder irritants medications effecting the bladder, types of incontinence, treatment, management, lifestyle changes and pelvic floor muscle exercises.

The tools used for assessment and education were from two sources. The bladder diary assessment was developed by Eventium. Eventium is a company whose focus is on developing evidenced-based practice materials for use in the clinical setting (Eventium, n.d.). The materials produced by Eventium are developed utilizing evidenced based practice and are leveled for health literacy needs. The education protocol further utilizes Eventium teaching sheets on bladder training, urinary tract infection, stop light tool to report urinary signs and symptoms and keeping clean and dry. In conjunction with the Eventium materials, materials from the National Association for Continence (NAFC) (n.d.) were used to educate patients on bladder irritants and Kegel exercises. The NAFC is an organization dedicated to providing solutions to incontinence and proving patient support and education. Education materials provided to the patient by the nursing staff and available in patients’ homes. Permission for use of the tools has been granted.
by the respective sources of origin.

The nursing staff at the research site received in-service education on the protocol, the new education materials and process for patient consent. Education on previous agency results related to urinary incontinence were presented to nursing staff along with the supportive evidenced-based practice to support the protocol. Interdisciplinary staff which included physical therapists, occupational therapists and speech therapists also received in-service education on the protocol and their supportive roles to encourage patient logs and provide for reminders. At completion of the episode patient data from M1610 and M1650 was recorded and tabulated for outcome measurements.

**Measures**

The measures utilized included bladder diaries that were easily readable and engaging with pictures to aid in the patient understanding. An hourly table format allowed for patients or caregivers to document items including, fluid intake and times, frequency and time of voiding, urge to void, episodes of incontinence and activity engagement at times of voiding. The OASIS data set is a comprehensive assessment completed in the home care setting to compare patient status at differing points in time. The two questions relevant to UI included M1610 and M1615. M1610 assesses the patient for the presence of UI or a urinary catheter. M1615 assesses for the level of urinary incontinence which can be timed voiding defers UI, stress incontinence, day UI, night UI or day and night UI. This measure was compared from admission to discharge for changes over time.

**Analysis**

Changes in UI status, frequency of toileting and the urge to urinate attributed to the bladder training intervention were examined. For each continuous variable, The Shapiro-Wilk
test was used to assess normality. This test is used to examine normality in samples of fifty or less: therefore, it was appropriate for this sample size. Most variables were not normally distributed; therefore, non-parametric tests were used. A paired samples $z$-test was used to compare the proportion of patients with urinary incontinence at pretest compared to post test. Medians and non-parametric tests were used to access change in UI frequency, urge and toileting between the pre- and post-test. Specifically, the Wilcoxon signed ranks test was used to compare the median number of times toileting and urge at pretest compared to post-test.

**Ethical Considerations**

The agency is held to Medicare guidelines when completing the OASIS data set. The guidelines compel clinicians to assess the patient at their ability to safely and effectively complete a task greater than fifty percent of the time. This standard compels clinicians to complete the OASIS data set at differing time points without referencing previous outcomes thus makes the pre and post intervention assessment blind to the clinician. Acknowledgements to Eventium and the National Association for Continence for the use of their materials.

**Results**

Through this intervention 35 older adults participated in this project. Of those seven were subsequently hospitalized and unable to complete the intervention. Two participants were non-responsive to completing the project after initially consenting to participate. This resulted in 26 participants that met the eligibility criteria for completion of the UI intervention. Table 1 displays results from a descriptive examination of study variables.
Table 1.

**Sample Description, N=26.**

<table>
<thead>
<tr>
<th></th>
<th>Pretest N (%)</th>
<th>Posttest N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary Incontinence</td>
<td>26(100%)</td>
<td>24(92.3%)</td>
</tr>
<tr>
<td>Median(Range)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence Frequency</td>
<td>2(1-4)</td>
<td>1(0-4)</td>
</tr>
<tr>
<td>Incontinence Frequency</td>
<td>2.31(1.32)</td>
<td>1.29(1.32)</td>
</tr>
</tbody>
</table>

The results from a descriptive examination of study variables revealed that at pretest, 100% of participants were incontinent. At posttest, 24 participants (92.3%) were incontinent. The Shapiro-Wilk test was used to assess normality. The Shapiro-Wilk test statistic was .786 ($p<.001$) for pretest frequency and .853 ($p=.003$) for posttest frequency. Because $p$ –values were statistically significant, medians and non-parametric tests were used to access change over time to avoid violating the normality assumption. The median frequency of incontinence at pretest was 2 (ranging from 1 to 4 episodes), and the median frequency of incontinence at posttest was 1 with values ranging from zero to four.

Table 2 tests the hypothesis that the prevalence of incontinence in the sample declined over time. At the pretest, 100% of the sample experienced incontinence; this declined to 92.3% at the posttest. A paired samples proportions test was used to examine whether a change from 100% to 92.3% was statistically significant, and results suggested that the result change was statistically significant ($z=-3.07; p=.002$).
Table 2.

*Paired samples z-test comparing the proportion of patients with urinary incontinence at pretest compared to posttest, N=26.*

<table>
<thead>
<tr>
<th></th>
<th>Pretest N (%)</th>
<th>Posttest N (%)</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary Incontinence</td>
<td>26(100%)</td>
<td>24(92.3%)</td>
<td>-3.07</td>
<td>.002</td>
</tr>
</tbody>
</table>

Table 3 depicts the results from a Wilcoxon signed ranks test examining whether median incontinence frequency changed over time. Results suggest that the median frequency of urinary incontinence declined from 2 (range: 1-4) at pretest to 1 (0-4) at posttest. This decline was statistically significant (z= -3.83; p<.001).

Table 3.

*Wilcoxon signed ranks test comparing the median incontinence frequency at pretest compared to posttest, N=24.*

<table>
<thead>
<tr>
<th></th>
<th>Pretest Median(Range)</th>
<th>Posttest Median(Range)</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary Incontinence</td>
<td>2(1-4)</td>
<td>1(0-4)</td>
<td>-3.83</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Number of times toletting</td>
<td>23(15-53)</td>
<td>29(24-40)</td>
<td>-3.06</td>
<td>.002</td>
</tr>
<tr>
<td>Urge</td>
<td>11.5(2-42)</td>
<td>9(0-41)</td>
<td>-2.19</td>
<td>.028</td>
</tr>
</tbody>
</table>
The Wilcoxon signed ranks test was also used to compare the median number of times toileting and urge at pretest compared to posttest, N=26 (Table 4). The median number of times toileting increased from 23 to 29. This increase was statistically significant. The median urge significantly declined from 11.5 (range 2-42) to 9 (range 0-41), and this change was statistically significant ($z=-2.19; p=.028$).

Table 4.

*Wilcoxon signed ranks test comparing the median number of times toileting and urge at pretest compared to posttest, N=26.*

<table>
<thead>
<tr>
<th></th>
<th>Pretest Median(Range)</th>
<th>Posttest Median(Range)</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of times toileting</td>
<td>23(15-53)</td>
<td>29(24-40)</td>
<td>3.06</td>
</tr>
<tr>
<td>Urge</td>
<td>11.5(2-42)</td>
<td>9(0-41)</td>
<td>2.19</td>
</tr>
</tbody>
</table>

**Summary**

This QIP on UI in the home care setting allowed the agency to examine the use and patient outcomes of an educational intervention based in evidenced-based practice. The results revealed an improvement in the overall UI of the participants and 2 patients achieved continence after the intervention. Providing patients with the tools needed to improve UI is important to the agency in the outcome assessment driven health care system. The staff overall was resistant to implementing this intervention and coaching throughout the project was utilized to overcome this
issue. Telephone follow ups were used with participants to remind them to complete bladder diaries and return the data to the agency. During the interviews, participants’ comments allowed for the staff to understand the impact of their care. One participant revealed that after one day of bladder training she already saw a difference and could not believe that no other health care providers had provided her with the education to promote her continence. Commentary like this was used to promote the program and encourage the staff to partake in an intervention with results that were challenging to visualize. Future projects from this work should examine whether UI improvement reduces patients’ hospitalization rate and risk for infections, falls and skin break downs.

Limitations

The QIP project had several limitations. First a convenience sample from a single agency was utilized; therefore, the results may not be generalized to other agencies. The sample was smaller than expected due to the difficulty of keeping participants engaged in this community setting. The age group of the participants was challenging in terms of completion of the bladder diaries. The resistance of the staff in implementing this intervention portrayed bias in their ability to effect change and improve the patient’s continence and quality of life. These assumptions could have affected the clinician’s process and educational commitment. Despite these limitations, changes in UI status were observed.

Conclusion

This project was valuable to the agency in understanding the ability of the educational intervention to impact UI. The resulting improvements in patient UI mean that the educational
intervention can be successful in reducing UI and its associated negative health outcomes. In examining the process as an agency, the use of the bladder diaries was initially perceived as burdensome by the staff. Utilizing the bladder diary has resulted in valuable information for research but in practice the post diaries would not be used. By identifying patients suffering from UI, on admission clinicians are able to implement the intervention and reduce risk of adverse health outcomes for these populations. Supporting the education using the agency electronic health record has also enabled the staff to promote the sustainability of the project. Hearing the patient perspective and positive outcome has enabled the staff to understand the impact the education effort.
References


