Can Education and the Reinforcement of a Bladder Program Improve Rehabilitation Patient Outcomes?.

Neha Kohli
USF MCOM- LVHN Campus, Neha.Kohli@lvhn.org

Published In/Presented At

Kohli, N. (2017, March). *Can Education and the Reinforcement of a Bladder Program Improve Rehabilitation Patient Outcomes?.* Poster Presented at: 2017 SELECT Capstone Posters and Presentations Day. Kasych Family Pavilon, Lehigh Valley Health Network, Allentown, PA.

Can Education and the Reinforcement of a Bladder Program Improve Rehabilitation Patient Outcomes?

Neha Kohli
Lehigh Valley Health Network, Allentown, PA

Background

- The goal of acute rehabilitation is to improve patients' function, quality of life, and likelihood of safe return to home.
- Often, there are unavoidable barriers to home disposition. Some issues, such as bladder training can be improved, leading to a successful home discharge.
- When a patient is admitted to the rehab unit, they are given bladder Functional Independence Measure (FIM) scores ranging from 1-7. At discharge, they are again evaluated and scored.
- The current bladder program at the Center for Inpatient Rehabilitation (CIR) was sub-optimally improving patients' outcomes.

Methods

- The current bladder program at the Center for Inpatient Rehabilitation (CIR) was sub-optimally improving patients' outcomes.
- After surveying therapists and nurses, areas for improvement were found:
  - not enough education on bladder training
  - miscommunication between therapists and nurses
  - many nurses felt that the unit was understaffed
- Interventions:
  - Nursing education on bladder program
  - Daily reinforcement to include bladder status for each patient during morning report
  - Nursing "cheat sheet" placed around the unit (reminders for bladder program)
- Every patient who was admitted to CIR from 6/6/16-12/5/16 was included in the project
- Patients admitted to the unit from 6/6-9/5 (pre-intervention) were compared to patients admitted from 9/6-12/5 (post-intervention)

Results

FIM® Instrument Levels

7	Complete Independence (timely, safely)	No Helper
6	Modified Independence (device)	
Modified Dependence		Helper
5	Supervision	
4	Minimal Assist (Subject = 75%+)	
3	Moderate Assist (Subject = 50% - 74%)	
Complete Dependence		
2	Maximal Assist (Subject = 25% - 49%)	
1	Total Assist (Subject <25%)	

- The hypothesis was that the difference between bladder scores from admission to discharge would show a greater improvement post-intervention.
- However, using a Z test, what little improvement observed seemed to yield a P value >0.8 which suggested lack of statistical significance

F-Test Two-Sample for Variances	Variable 1	Variable 2
Mean	2.342723005	2.373873874
Variance	5.302	3.352
Observations	213	222
df	212	221
F	1.173597241	
P(F<=) one-tail	0.119595621	
F Critical one-tail	1.25084046	
F<F critical one tail, so variances of 2 pops are equal		
t-Test: Two-Sample Assuming Equal Variances	**Variable 1**	**Variable 2**
Mean	2.342723005	2.373873874
Variance	5.065949154	4.316599405
Observations	213	222
Pooled Variance	4.68348658	
Hypothesized Mean Difference	0	
df	433	
t Stat	-0.150074598	
P(T<=) one-tail	0.44038782	
t Critical one-tail	1.648380311	
P(T<=t) two-tail	0.880775641	
t Critical two-tail	1.965457757	

Discussion

- Since patients' bladder scores are subjective, they may not be an accurate representation of the progress that patients are actually making. There can be variability if different nurses are scoring patients' bladder function.
- Different mechanisms of injury, age, and comorbidities could lead to varying potentials for improvement.
- Patients who began at a score of 7 had no room to improve and could have skewed the data.
- In hindsight, patients who were admitted prior to intervention but discharged after intervention should likely be excluded.

Conclusions

- Bladder training remains to be a difficult issue in rehabilitation units.
- Although these interventions did not lead to significant change in patients' bladder scores, it was a good starting point for further studies.
- Future implications
  - Better control for confounding variables
  - Separate data by type of injury or insult
  - Further data should be collected to increase the power of the study

References:

1. Barrett, J. A. "Bladder and bowel problems after stroke." *Reviews in Clinical Gerontology* 12.03 (2002): 253-267.
2. Baztán, Juan J., et al. "New-onset urinary incontinence and rehabilitation outcomes in frail older patients." *Age and ageing* 34.2 (2005): 172-175.
3. Booth, Jo, et al. "Rehabilitation nurses practices in relation to urinary incontinence following stroke: a cross-cultural comparison." *Journal of clinical nursing* 18.7 (2009): 1049-1058.
4. Bräutigam, Katrin, et al. "How reliable is the Functional Independence Measure (FIM)?" Pflege, vol. 15, no. 3, 2002, pp. 131–136. doi:10.1024/1012-5302.15.3.131.
5. Coffey, Alice, et al. "Incontinence: assessment, diagnosis, and management in two rehabilitation units for older people." *Worldviews on Evidence-Based Nursing* 4.4 (2007): 179-186.
6. Comarr, A. Estin. "Neurogenic bladder." Paraplegia 2.2 (1964): 125-31.
7. Fantl J, Wyman JF, McClish DK, et al. Efficacy of Bladder Training in Older Women With Urinary Incontinence. *JAMA*.1991;265(5):609-613. doi:10.1001/jama.1991.03460050063021.
8. Feigenson, J. S., F. H. Mcdowell, P. Meese, M. L. Mccarthy, and S. D. Greenberg. "Factors influencing outcome and length of stay in a stroke rehabilitation unit. Part 1. Analysis of 248 unscreened patients-- medical and functional prognostic indicators." *Stroke* 8.6 (1977): 651.
9. Hulscher, M. E J L. "Process evaluation on quality improvement interventions." Quality and Safety in Health Care 12.1 (2003): 40-46.
10. Irwin, D. E., Kopp, Z. S., Agatep, B., Milsom, I. and Abrams, P. (2011), Worldwide prevalence estimates of lower urinary tract symptoms, overactive bladder, urinary incontinence and bladder outlet obstruction. BJU International, 108: 1132–1138. doi:10.1111/j.1464-410X.2010.09993.x
11. Leary, S. M., et al. "Incontinence after brain injury: prevalence, outcome and multidisciplinary management on a neurological rehabilitation unit." *Clinical rehabilitation* 20.12 (2006): 1094-1099.
12. Lincoln, N. B., J. M. Jackson, J. A. Edmans, M. F. Walker, V. M. Farrow, A. Latham, and K. Coombes. "The accuracy of predictions about progress of patients on a stroke unit." *Journal of Neurology, Neurosurgery & Psychiatry* 53.11 (1990): 972-75.
13. Phillips, L. R. "Age: A Truly Confounding Variable." *Western Journal of Nursing Research* 11.2 (1989): 181-95.
14. Schlesselman, James. "Assessing Effects Of Confounding Variables." *American Journal of Epidemiology* 108.1 (1978): 3-5.
15. Ween, Jon Erik, et al. "Incontinence after stroke in a rehabilitation setting Outcome associations and predictive factors." *Neurology* 47.3 (1996): 659-663.