

Does a Nurse Practitioner in a Long Term Care Facility Decrease 30 Day Hospital Readmission Rates?

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Learning Objectives

- Be able to describe the impact a nurse practitioner (NP) in a long-term care facility (LTCF) has on hospital readmission rates
- Be able to identify and predict the variables that contribute to hospital admission/readmissions from LTC facilities

Background

- Aging Population is increasing
- Health care system is not prepared
- Evolving managed care where new service models are needed
- Strain on physicians that need alleviated
- Nurse Practitioners can be the solution

Research Objectives

- Evaluated the impact of adding a NP in the LTCF eight hours a day Monday through Friday on 30 day readmission rates
- Identified the variables that contribute to hospital readmissions

Methods and Synthesis of Findings

A systematic review of the literature was performed using databases PubMed, CINAHL, and EBSCOhost, and Medline. Phrases used to search included *Long-term care, benefits of NP in long-term care facility, AND decrease hospital readmission rates*. The literature indicates that NP's have a useful and cost-effective role to play in long-term care.

Results

A test of two independent proportions was conducted to compare the difference in 30-day readmission rates pre- and post-NP. Although the test did not reach significance ($Z = 1.01, p = 0.156$, two tailed), the results indicate that the readmission rate was lower with the NP (28.8%) than prior to the NP intervention (36.6%). Thus, readmission decreased by approximately 8 percent.

Comparison of Pre and Post Implementation of NP

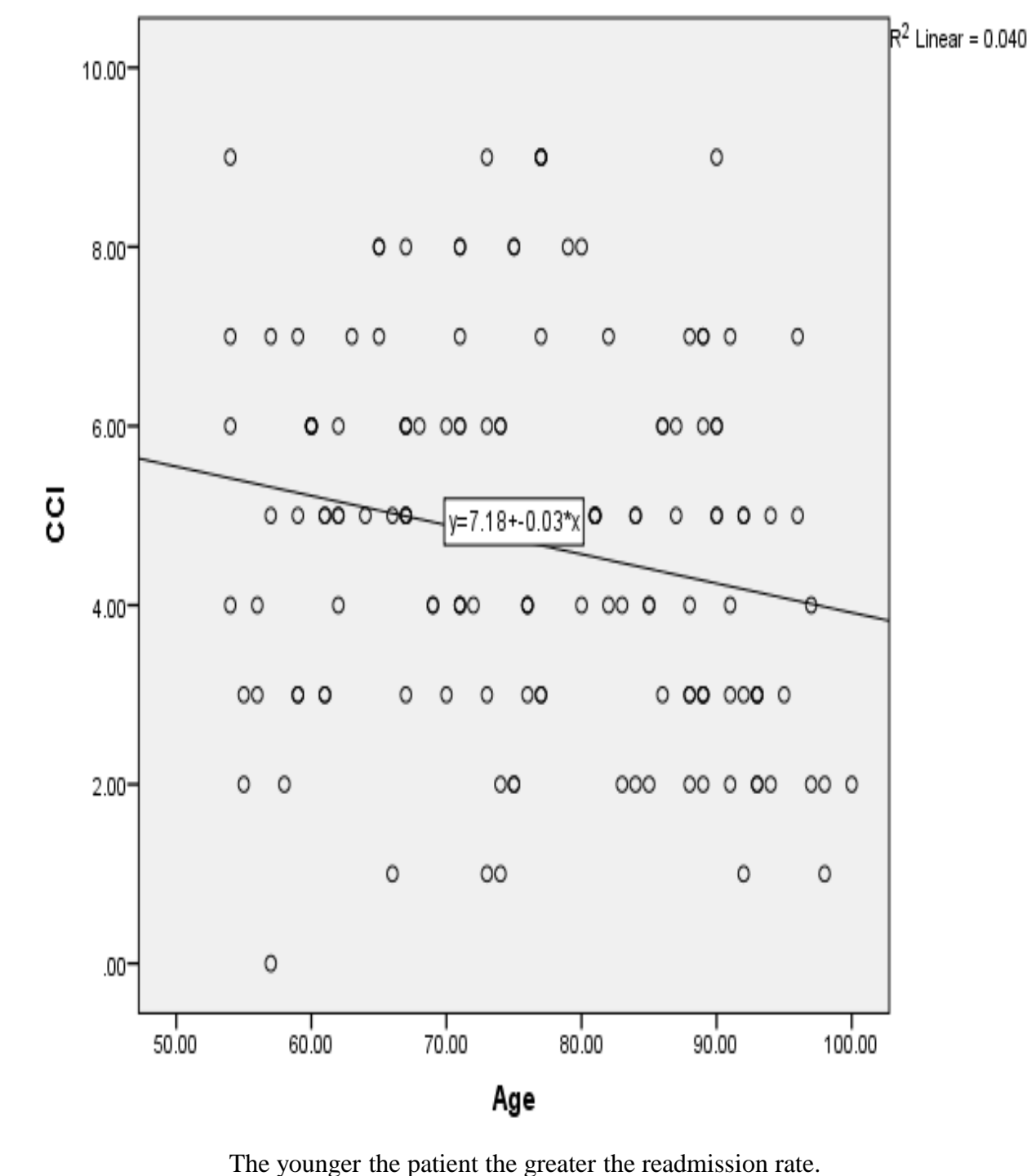
Test of two Independent Proportions	
pre-NP proportion	36.6%
post-NP proportion	28.8%
n1	71
n2	73
standard error	0.078
z score	1.007
p-value (one side)	0.156871
p-value (two tails)	0.313742

The model indicates that length of stay (LOS) in the LTCF is significantly related to 30-day readmission, $p < 0.001$ value. Specifically, for every one day increase in LOS in the LTCF, the odds of 30-day readmission decrease by a factor of about 0.997, i.e., but by about 0.003 value. Stated conversely, for every one day decrease in LOS in the LTCF, the odds of 30-day readmission increases by a factor of 1.003 (1/0.997), or about 0.3 percent.

Variables in the Equation						
	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a LOSLTCF	-.003	.001	13.663	1	.000	.997
Constant	.154	.241	.411	1	.522	1.167

a. Variable(s) entered on step 1: LOSLTCF.

A simple, binary logistic regression was conducted with age as the continuous predictor and 30-day readmission (1 = yes, 0 = no) as the outcome variable. A significant relationship between age and readmission within 30 days emerged, $X^2(1, n = 144) = 4.43, p = 0.035$. The omnibus tests of model coefficients supports the hypothesis that adding age to an intercept-only model helps predict 30 day readmission.



Discussion

The results showed that the addition of a nurse practitioner in the facility on a daily basis, patient age, and length of stay in the long term care facility impacted readmission rates. This was a small facility with only one provider, would a study conducted in a larger facility, or multiple facilities with more than one provider elicit the same results? The study also exhibited that the younger patients were more ill and more likely to be readmitted, would other facilities have similar findings?

References

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- Mor, V., Intrator, O., Feng, Z., & Grabowski, D. C. (2010). The revolving door of rehospitalization from skilled nursing facilities. *Health Affairs*, 29 (1), 57-64. <http://dx.doi.org/doi:10.1377/hlthaff.2009.0629>

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