

The Impact of Leadership

The relationship between nurse manager transformational leadership practices and nurse-sensitive patient outcomes

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Important Questions ...

- What type of leadership is correlated with the best clinical outcomes on an inpatient unit?
- Are nurse-sensitive clinical outcomes associated with the leadership practices of the nurse manager?
- Is there a difference in the leadership practices of nurse managers in Magnet vs. non-Magnet hospitals and is this associated with any differences in the clinical outcomes achieved on their units?

Three Truisms in Health Care

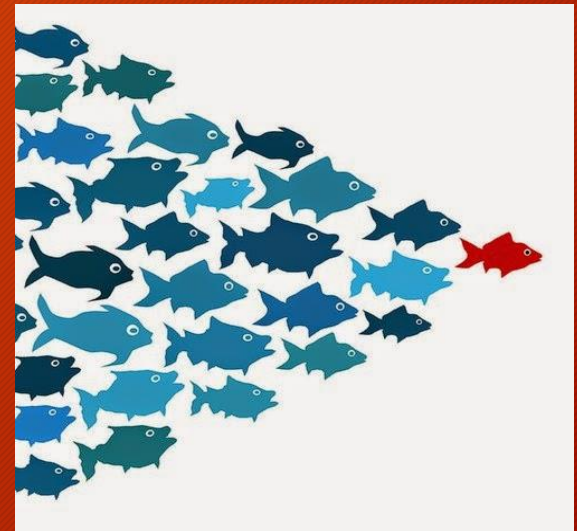
1. Leadership matters
2. Transformational leadership is the most effective type of leadership
3. High quality care happens at the unit level

This project tested these three beliefs at the nursing unit level.

Literature Review: Bass and Riggio

Transformational Leadership - 4 I Model

- Idealized influence
- Inspirational motivation
- Intellectual stimulation
- Individual consideration

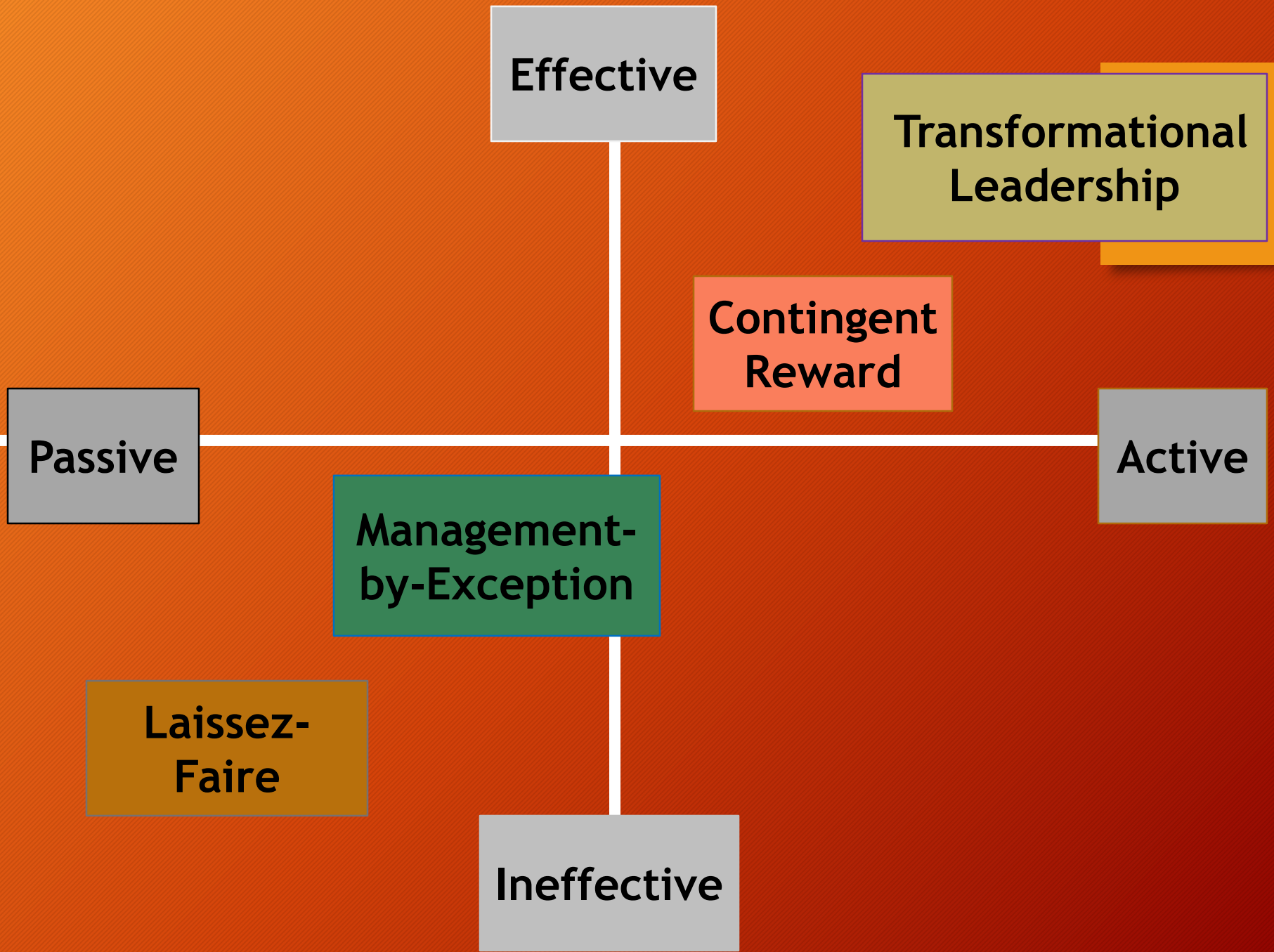


Bass, B. M. and Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Literature Review: Kouzes And Posner

- Transformational Leader Practices
 - Model the way
 - Inspire a shared vision
 - Challenge the process
 - Enable others to act
 - Encourage the heart

Kouzes, J. and Posner, B. (2012). *The leadership challenge: How to make extraordinary things happen in organizations* (5th ed.). San Francisco, CA: Jossey-Bass.



This Study ...

- An observational study that examined the relationship between nurse manager transformational leadership practices and nurse-sensitive patient outcomes on their units. It involved:
 - Measuring leadership practices of nurse managers
 - Capturing nurse-sensitive quality data

Hypothesis

There will be a significant inverse correlation between transformational leadership scores of nurse managers on the Leadership Practices Inventory (LPI) and:

- Patient falls with injury,
- Hospital-acquired pressure ulcers (stage 2 and higher),
- Catheter-associated urinary tract infections (CAUTI),
- Central line associated blood stream infections (CLABSI).



Independent Variables

- Primary independent variable
 - Total scores from the LPI
- Secondary independent variables
 - LPI subscales or domains
 - Inspiring a shared vision, challenging the process, enabling others to act, modeling the way, encouraging the heart
 - Demographic data
 - Years of experience as a manager and years of experience as a nurse

Dependent Variables

NDNQI nurse-sensitive patient outcomes

- Patient falls with injury
- Hospital acquired pressure ulcers (stage 2 and higher)
- Catheter associated urinary tract infection
- Central line associated blood stream infection

Tools and Data

Leadership Practices Inventory (LPI):

- 30 questions, 6 each for the categories from the Kouzes and Posner Model
- Answered on a Likert scale from 1-10

Nurse-Sensitive Quality Data

- NDNQI data
- Collected using a standard methodology



Sample LPI Questions

- I set a personal example of what I expect of others (MTW)
- I describe a compelling image of what our future could be like. (ISV)
- I challenge people to try out new and innovative ways to do their work. (CTP)
- I ensure that people grow in their jobs by learning new skills and developing themselves. (EOTA)
- I give the members of the team lots of appreciation and support for their contributions. (ETH)

Methodology

IRB Approvals

- University of Pittsburgh
- Three other hospital-based IRBs
- Approval received in two of the hospitals also applied to other hospitals



Project Participants

Inclusion

- Nurse managers in critical care, stepdown, med/surg, and rehabilitation units
- In the manager role for at least 6 months
- NDNQI data only used beyond the six month period of being a nurse manager

Exclusion

- Nurse managers in maternal-child units, emergency departments, psychiatric units, and ambulatory units.
- Nurse managers in roles less than six months

Settings - Six Hospitals in Michigan

- Four tertiary & two community hospitals
- All hospitals were > 300 licensed beds
- Four hospitals were Magnet organizations
- Two hospitals were non-Magnet organizations



Data Analysis

- All analyses were performed using Stata 14.1
- Had measures of central tendency
- Multiple regression analysis was used to examine the relationship between LPI scores and the nurse-sensitive quality outcomes from their units.
- Significance was established at 0.05
- Magnet and non-Magnet hospitals were compared and then evaluated independently.

Results

Nurse Manager Demographics

- N = 50
- Years as an RN
 - Average: 19.8, $\sigma = 10.2$, Range: 6 to 42
- Years as a manager
 - Average: 7.7, $\sigma = 7.5$, Range 1 to 33.8
- Highest level of educational preparation
 - BSN: 28 or 56%
 - MSN: 21 or 42%
 - Not stated: 1 or 2%

LPI Results

	Mean	Std. Dev.	Min	Max
Total LPI score	249.8	22.29	187	285
Total Possible			30	300
Model the way	51.4	4.88	42	59
Inspire a vision	46.9	8.44	25	57
Challenge the process	46.6	7.27	27	59
Enable others to act	52.8	4.76	41	59
Encourage the heart	51.7	7.03	33	60
Total Possible			6	60

NDNQI Nurse-Sensitive Quality Results

Measure	Mean	Std. Dev.	Min	Max
Falls with Injury Rate (per 1,000 patient days)	0.54	0.36	0.00	1.69
HAPUs stage 2 and higher (number observed)	0.013	0.03	0.00	0.12
CAUTI Rate (per 1,000 catheter days)	3.93	7.37	0.00	37.97
CLABSI Rate (per 1,000 device days)	2.75	5.43	0.00	24.79

Multiple Regression Analysis

- Done to test for the relationship between NDNQI nurse-sensitive patient data and the LPI scores.
- R^2 for the multiple regression was = 0.066. So, almost 7% of the variance could be explained by the variable, or no significance.
- General finding: There was no statistically significant relationship between the group of variables (NDNQI and demographics) and the LPI scores.

Magnet vs. Non-Magnet Hospitals

		Mean	Std. Dev.	95% CI		P-value
Years as a manager	Non-Magnet	7.10	7.45	2.101	12.114	0.597
	Magnet	8.49	7.64	5.980	11.007	
Total LPI score	Non-Magnet	241.66	27.41	224.26	259.07	<u>0.162</u>
	Magnet	252.19	20.63	245.41	258.97	
Model the Way	Non-Magnet	51.25	4.97	48.089	54.41	0.866
	Magnet	51.52	4.92	49.91	53.14	
Inspire a Shared Vision	Non-Magnet	42	9.39	36.043	47.976	<u>0.017</u>
	Magnet	48.56	7.58	46.088	51.058	

Magnet vs. Non-Magnet Hospitals

		Mean	Std. Dev.	95% CI		P-value
Challenge the Process	Non-Magnet	44.08	8.35	38.778	49.389	<u>0.1691</u>
	Magnet	47.41	6.82	45.17	49.651	
Enable Others to Act	Non-Magnet	54	4.53	51.120	56.880	0.359
	Magnet	52.54	4.84	50.946	54.128	
Encourage the Heart	Non-Magnet	50.33	8.17	45.141	55.526	0.4402
	Magnet	52.15	6.69	49.953	54.352	

Magnet vs. Non-Magnet Hospitals

		Mean	Std. Dev.	95% CI		P-value
Falls with Injury/1000 days	Non-Magnet	0.79	0.49	0.478	1.105	<u>0.006</u>
	Magnet	0.47	0.27	0.377	0.557	
HAPU \geq Stage 2 (number observed)	Non-Magnet	0.02	0.03	-0.003	0.039	0.466
	Magnet	0.01	0.02	0.003	0.019	
CAUTI/1000 device days	Non-Magnet	15.93	9.89	8.318	23.533	<u><0.0001</u>
	Magnet	1.014	1.16	0.627	1.399	
CLABSI/1000 device days	Non-Magnet	12.03	11.06	-15.457	39.516	<u>0.0013</u>
	Magnet	1.99	4.18	0.607	3.392	

Significance: Magnet vs. Non-Magnet

	Significant	Trending in the Expd Direction	Not-Significant
Total LPI score		✓	
Model the way			✓
Inspire a shared vision	✓		
Challenge the process		✓	
Enable others to act			✓
Encourage the heart			✓
Falls with injury	✓		
HAPUs			✓
CAUTI	✓		
CLABSI	✓		



Conclusions

- There are transformational leadership practices of nurse managers that may be associated with better patient outcomes.
- Nurse managers in Magnet hospitals may have leadership practices that are associated with better NDNQI clinical outcomes.
- It is prudent to employ leadership practices that facilitate a culture where Magnet Recognition is attained.
- Leadership is one of many variables affecting nurse-sensitive patient outcomes. Leadership does matter.

Strengths and Limitations

Strengths

- Standardized NDNQI nurse-sensitive patient data
- Valid and reliable LPI tool.

Limitations

- More units needed for stronger results.
- Bias in the self-reporting of the LPI practices by the nurse managers.
- The collection of additional variables may help to inform other factors impacting patient outcomes.

Implications for Practice

- The pursuit and achievement of Magnet Recognition is a worthy goal.
- Leadership training for nurse managers is needed.
- Educational preparation of nurse managers
- Greater attention to the selection processes for nurse managers may be warranted.

Implications for Future Projects

Collection of additional data:

- Size of unit
- Number of units a manager has responsibility for
- Nurse-to-patient ratios
- Support systems on the unit, i.e., MSWs, NAs, etc.
- Tenure of nursing staff
- Culture within the unit & Magnet status
- Geography of units
- Leadership training for nurse managers
- Interventions to improve the LPI scores



Questions?
& Discussion

References

- Bass, B. M. and Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Bass, B. M. and Bass, R. (2008). *The Bass handbook of leadership: Theory, research & managerial applications* (4th ed.). New York, NY: Simon & Schuster, Inc.
- Kouzes, J. and Posner, B. (2012). *The leadership challenge: How to make extraordinary things happen in organizations* (5th ed.). San Francisco, CA: Jossey-Bass.
- *Stata 14.1. College Station, Texas. Copyright 1985-2015.*