

“Factors Influencing Healthcare Workers' Opinions about Protective Clothing and Drapes in the Operating Room”

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with research contributions from:

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Materials Use: Science, Engineering, and Society

- Multidisciplinary project

- Physical sciences
- Social sciences
- Engineering

- Multidisciplinary team of faculty researchers

Gang Sun (Textile Chemistry), Margaret Rucker (Marketing & Economics), Susan Kaiser (Social Psychology and Culture), Mark Nicas (Environmental Health), Michael Overcash (Life-cycle Assessment), and Lu Wang (Textile Engineering)

Project Methodology

- Nationwide surveys

- » Quantitative data
- » Qualitative data

- In-depth interviews

- » Operations Managers
- » Environmental Services
- » Corporate Ecologists
- » O.R. Directors

Quantitative data pertaining to:

- Percentage used of disposable/reusable
- If switch occurred, when did it happen
- Likert scales measuring
 - ❖ Attitudes towards protective clothing
 - ❖ Attitudes towards nosocomial infections
 - ❖ Perceptions of vectors of transmission
 - ❖ Environmental concern

Qualitative data pertaining to:

- Gown/Drape Preference
- Critical Incidents
- Change in hospital purchases
 - Who instigated change
 - How notice of change circulated
 - Reason for change



Previous Presentations Using Survey Data

- Comparison of nurse perceptions toward vectors of transmission in 1999 (Alfrey, 2000) with data on nurse perceptions that we collected in 2008
- Comparison of nurse and doctor perceptions of various vectors of transmission
- Gown preference and reasons
- Hospital switch in types of gowns and perceived reasons for the switch
- Environmental concern scale adapted from Weigel and Weigel (1978).

Today's Presentation

Factors Affecting Opinions about Protective Gowns and Drapes

- Description of the sample
- Description of the scale
- Results
- Future directions

Data Collection for This Study

Nationwide Samples:

- 550 doctors were contacted by mail: 110 returned a completed questionnaire.
- Over 35,000 nurses were invited to participate through an A.O.R.N. newsletter; 218 responded electronically

Surveys asked healthcare workers various questions regarding the practices and opinions of both reusable and disposable medical textiles (i.e., surgical gowns and drapes)

Demographic Tables

M.D.'s

Sex	N	%
Male	97	89.81
Female	11	10.19
Level of Education		
Associate or technical degree	1	.91
Bachelor's degree	1	.91
Master's degree	2	1.82
Doctorate degree	106	96.36
Marital Status		
Married	96	89.72
Divorced	7	6.54
Never Married	4	3.74
# of Children		
0	52	50
1	8	7.69
2	28	26.92
3+	16	15.38
		Mean = 1.20
State/Region		
Northwest	17	15.59
Midwest	27	24.78
South	38	34.87
West	27	24.7

R.N.'s


Sex	N	%
Male	15	7.21
Female	193	92.79
Level of Education		
Some College	2	.96
Associate or technical degree	70	33.65
Bachelor's degree	89	42.79
Graduate Work, no degree	13	6.25
Master's degree	33	15.87
Doctorate degree	1	.48
Marital Status		
Married	139	68.14
Widowed	9	4.41
Separated	2	.98
Divorced	31	15.20
Never Married	23	11.27
# of Children		
0	118	62.11
1	39	20.53
2	26	13.68
3+	7	3.69
		Mean = .612
State/Region		
Northwest	33	16.02
Midwest	44	21.38
South	70	34
West	59	28.67

Factors Affecting Opinions about Protective Gowns and Drapes

Survey participants were asked to indicate the answer that best described their feelings about the level of influence each of 13 variables has on their opinion about what type of protective textile products should be used in the operating room

Scale:

1 (no influence at all) to 4 (strong influence)



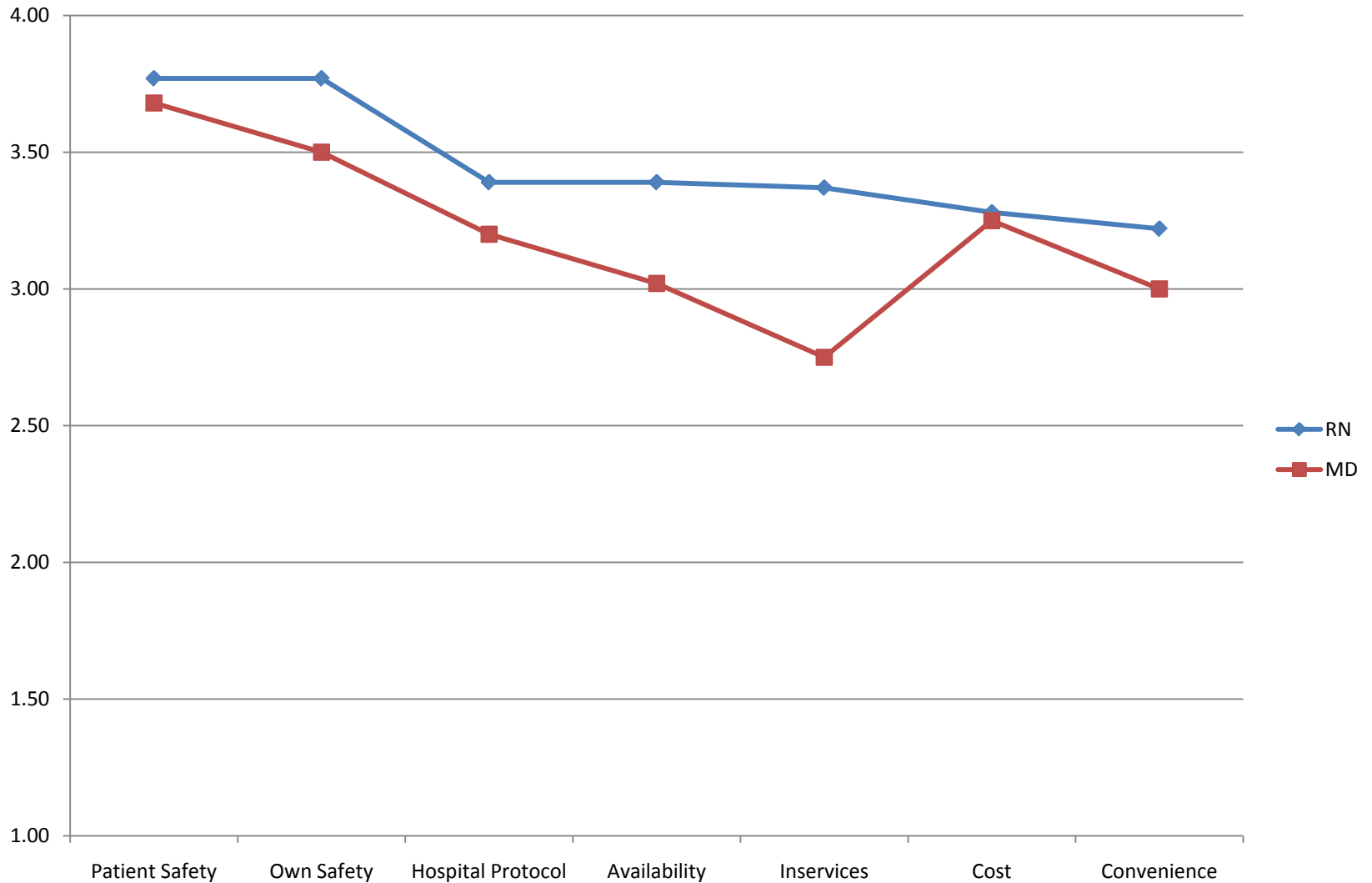
Variables that could potentially affect healthcare workers' attitudes

- ✓ Inservices/Health education
- ✓ Advertising in nursing magazines
 - ✓ Personal safety
 - ✓ Sales reps
 - ✓ Hospital protocol
 - ✓ Co-workers
- ✓ Cost of the products
- ✓ Availability of the products
 - ✓ Patient safety
- ✓ Environmental impact
 - ✓ Odor
 - ✓ Convenience
- ✓ Public image/appearance

Results

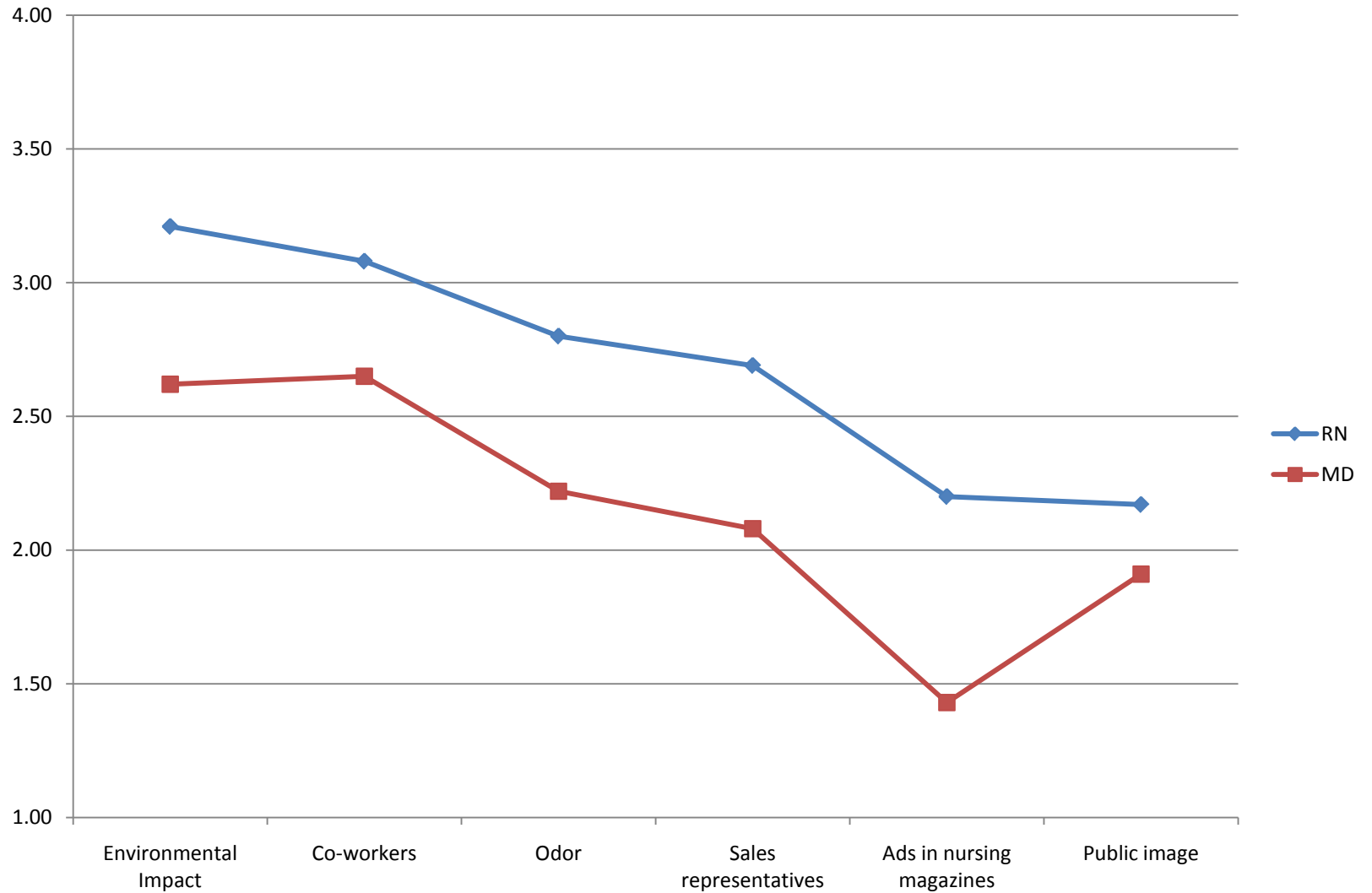


Level of Influence



Results

Level of Influence



Statistical Analysis

On average, nurses, compared to doctors, rated the variables as having more influence on their opinions.

Even though nurses' ratings were higher, the responses of the two group were highly correlated

- Pearson Correlation = .92
- Spearman Correlation = .88

Future directions for health protective textile research

Our study looked at operating room staff and their perceptions/attitudes

Future studies should consider the various roles of medical textiles in other departments of a hospital (neonatal, geriatrics, etc.)

Another research question could be how do the attitudes compare across other occupations that utilize PPE (e.g., firefighters, police, chefs)

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References

Alfrey, R. S. (2000). Dressed to kill: Preventive health models, perceptions of risk, and the acceptance of biocidal applications to clothing in the health care setting. Unpublished master's thesis, UC Davis.

Weigel, R., & Weigel, J. (1978). Environmental Concern: The development of a measure. Environment and Behavior, 10, 3-15.

Thank you!