

Nurse-Nurse Collaboration: A Reliable Scale to Describe Collaboration Among Clinical Nurses

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Disclosure/Conflict of Interest Statement

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Learner Outcomes

- ▶ 1) The learner will be able to analyze theoretical and conceptual underpinnings of the development of the Nurse-Nurse Collaboration Scale (NNCS Scale), and adaptation of the NNCS for hospital wide use among clinical nurses.
- ▶ 2) The learner will be able to identify the outcomes of the adapted NNCS for this project.
- ▶ 3) The learner will be able to develop a process for application of the NNCS or NNCS-Hospital Wide in their practice environment.

Background: *The evidence*

▶ Errors and Events

- ▶ 1 year study of adverse events identified 20% (n=79) of 391 medical ICU patients; most serious errors were medication and treatment (Rothschild, Landrigan, Cronin, et. al, 2005)
- ▶ Multinational study identified prevalence of parenteral drug errors in 113 ICUs in 27 countries- 74.5 per 100 days (Valentin, Capuzzo, Guidert, et. al, 2006)
- ▶ American Association of Critical Care Nurses: 53% withholding of support from another nurse (AACCN, 2005, McCauley, Irwin, 2006)
- ▶ Multidisciplinary healthcare workers, 1,565/2,000 nurses, 49% reported on impact of intimidation on medication error (Page, 2004)

Background: *The evidence*

- ▶ Collaboration- a marker of nursing ability (Meretoja, Erikson, Leino-Kilp, 2002)
- ▶ Collaboration- a professional obligation (Apker, Propp, Ford, Hofmeister, 2006)
- ▶ Collaboration- necessitates the capacity to initiate and preserve positive interpersonal interactions (Gardner, 2005)
- ▶ Limited research on nurse-nurse collaboration (NNC) (Dougherty & Larson, 2010)
- ▶ Improved NNC associated with positive patient outcomes (Ritter-Teitel, 2001)

Background: *The evidence*

- ▶ No instrument available to explore nurse-nurse collaboration
- ▶ Development of the Nurse-Nurse Collaboration Scale (Dougherty & Larson, 2010)
- ▶ Development of the Nurse-Nurse Collaboration Scale-Hospital Wide

Purpose

- ▶ The primary aim of this project is to describe the level of collaboration among registered clinical nurses in a semi-rural, Mid-Atlantic hospital.

Defining Collaboration-Conceptual

- ▶ Conceptual:
 - ▶ For the purpose of this study collaboration was defined as an underpinning for the development of the Nurse-Nurse Collaboration Scale (Dougherty & Larson, 2010)
 - ▶ "Collaboration is an interpersonal relations between and among colleagues, defined by the commonality of a goal recognized by each party, based on knowledge and expertise" supported by literature review (Dougherty & Larson, 2010).

Defining Collaboration-Operational

- ▶ Operational:
 - ▶ Nurse to Nurse Collaboration Scale (Dougherty & Larson, 2010)
 - ▶ Convergent correlation validity indicated minimal inter-scale correlation between the 5 domains that contribute to concept of collaboration. NNCS does not measure global concept of collaboration, rather the 5 domains.
 - ▶ Conflict management; Communication; Coordination; Shared Process; Professionalism
 - ▶ Overall Cronbach α for scale = .89
 - ▶ 33 items; Likert Scale - ranging 1-4
 - ▶ Strongly Disagree, Disagree, Agree, Strongly Agree

Defining Collaboration-Operational

- ▶ Operational:
 - ▶ Nurse to Nurse Collaboration Scale-Hospital Wide
 - ▶ Revision and Pilot [revision and method]
 - ▶ Reviewed by Nursing Research Council
 - ▶ Items were modified for sentence structure and precision of wording for use hospital wide. I.e. "on your unit" vs. "in this ICU"
 - ▶ Conflict management (7); Communication (8); Coordination (5); Shared Process (8); Professionalism (7)
 - ▶ Med-Surgical Unit, n=30
 - ▶ Overall Cronbach α for scale = .88
 - ▶ 33 items; Likert Scale - ranging 1-4
 - ▶ Strongly Disagree, Disagree, Agree, Strongly Agree

Design

- ▶ **Design:** This descriptive-correlational study implemented the electronic survey method (Survey Monkey) to apply the *NNC-House Wide Scale* [adapted from NNCS]. Data was collected from 136 clinical registered nurses working in acute care settings at a semi-rural, Mid-Atlantic region hospital.

Method

- ▶ Instrument: Nurse-Nurse Collaboration Scale - Hospital Wide
- ▶ Nurses in Clinical - Acute care, ED, PACU, Card-Cath
- ▶ Analysis:
 - ▶ Cronbach α for reliability
 - ▶ ANOVA was calculated to test differences among means of 5 subscales.
 - ▶ Pearson Correlation coefficient was used to explore for relationship between the 5 subscales.
 - ▶ Spearman Correlation coefficient was used to explore for relationship between the 5 subscales.

Findings

- ▶ Fall 20016
- ▶ n=136 completed survey
- ▶ Reliability was identified as excellent for subscales *communication*, *shared process*, *coordination*, and *professionalism* ($\alpha = .94-.98$). reliability was identified as good for subscale *conflict management* ($\alpha = .88$).
- ▶ Pearson Correlation (r) - the highest levels of collaboration existed between the subscales *shared process* and *communication* ($r=.80$), and *coordination* and *professionalism* ($r=.81$). However, nurses descried the lowest levels of collaboration among all subscale correlation with *conflict management* ($r=.41-.47$).
- ▶ Spearman Correlation (r)- significant positive correlations identified

Demographic Frequencies and Percentages

93% Female; 94% Caucasian

Item	n	%
Degree		
Associates Degree	39	32
Bachelors Degree	68	56
Diploma	4	3
Masters Degree	11	9
Ethnicity		
Caucasian	115	94
Black	5	4
Other	2	2
Age		
30-39 years old	27	22
50-59 years old	27	22
60-69 years old	16	13
40-49 years old	32	26
20-29 years old	20	16

Year of experience as nurse		
> 10 years	25	21
1-3 years	19	16
4-6 years	20	17
> 20 years	19	16
> 30 years	27	22
7-10 years	10	8
< 1 year	1	1
Years at Medical Center		
> 10 years	20	17
1-3 years	23	19
7-10 years	24	20
4-6 years	18	15
< 1 year	8	7
> 20 years	17	14
> 30 years	11	9
Years on current unit		
> 10 years	20	17
1-3 years	36	30
4-6 years	19	16
7-10 years	15	12
< 1 year	19	16
> 20 years	9	8
> 30 years	2	2

Means and Standard Deviations for Scale Variables

Variable	n	min	max	M	SD
CM	136	1.14	4.00	2.74	0.55
COM	136	0.00	4.00	2.77	0.76
SP	136	0.00	4.00	2.91	0.76
COR	136	0.00	4.00	2.92	0.92
PROF	136	0.00	4.00	2.97	1.05

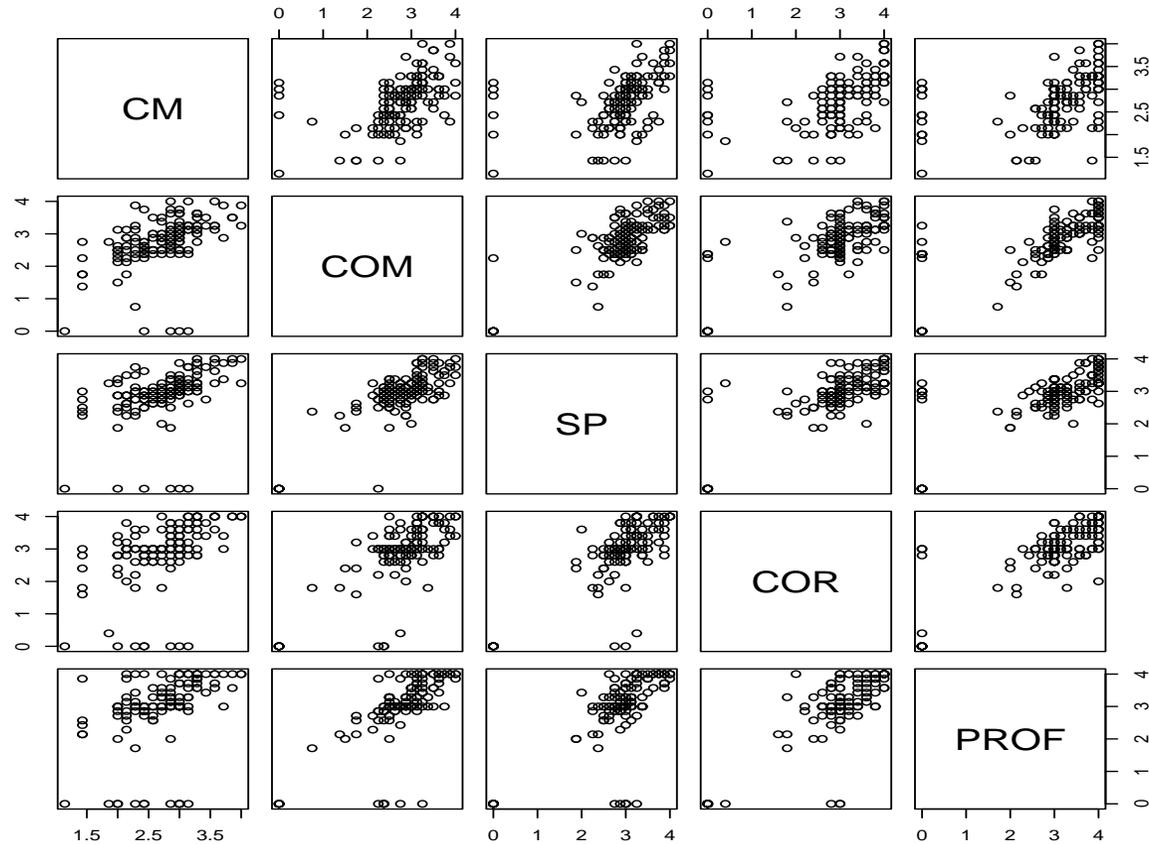
Pearson Correlation Matrix between CM, COM, SP, COR, and PROF

Variable	CM	COM	SP	COR	PROF
1. CM	-				
2. COM	0.47	-			
3. SP	0.41	0.80	-		
4. COR	0.47	0.72	0.76	-	
5. PROF	0.41	0.71	0.70	0.81	-

Spearman Correlation Matrix between CM, COM, SP, COR, and PROF

Variable	CM	COM	SP	COR	PROF
1. CM	-				
2. COM	0.58	-			
3. SP	0.57	0.63	-		
4. COR	0.56	0.61	0.65	-	
5. PROF	0.56	0.76	0.65	0.67	-

Scatterplot matrix between CM, COM, SP, COR, and PROF.



Conclusion

- ▶ **Conclusions:**
- ▶ The NNCS-HW was established as a reliable instrument for describing clinical nurse to nurse collaboration in the hospital setting. *Conflict management* was revealed as a subscale of collaboration that warrants further investigation and is an opportunity for intervention.

Clinical Relevance

- ▶ An intervention addressing conflict management may support collaboration, therefore decreasing errors, improving patient outcomes, and increasing clinical nursing satisfaction.
- ▶ Study results shared with nursing shared leadership councils.
- ▶ Need to address conflict management incorporated into Nursing Strategic Plan (2016)
- ▶ Nurse residents did an evidence-based practice project identifying strategies to improve conflict management skills
 - ▶ Crucial Conversations incorporated into Nurse Residency program and preceptor program; additional sessions scheduled for nursing department (2017)
- ▶ Annual RN Satisfaction Survey (RN to RN interaction domain) will be used to evaluate the impact of interventions on RN satisfaction. Survey planned for October 2017.

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