

## **45th Biennial Convention (16-20 November 2019)**

### **A Multi-Center Collaborative Intervention Study to Reduce Missed Nursing Care**

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#### **Background**

Delivery of nursing care occurs in a highly complex environment that requires working together to accomplish the goals of nursing care. In the absence of teamwork, breaches in nursing care impact the quality of care delivered and compromises patient outcomes (Hessels, Flynn, Cimiotti, Cadmus, Gershon, 2015). As a global issue within the nurse practice environment, missed nursing care (MNC) is defined as care that is omitted (partially or totally) or delayed (Kalisch, Xie, & Ronis, 2013). Factors associated with MNC are related to teamwork (Kalisch, 2013), which entails team trust and communication (McComb et al, 2017). While nurses do not plan for MNC, one nurse alone or inadequate staffing cannot provide all the nursing care and demands that arise; thus, projecting a disjointed approach to care delivery (Winset et al, 2015). Therefore, an approach to nursing care delivery must reflect teamwork amongst nursing staff to meet the day-to-day challenges. It has been shown that higher teamwork leads to greater productivity, fewer errors, and more satisfied staff (Kaiser & Wester, 2018). Prior to initiating this study, few methods of improving nursing teamwork in hospital patient care units had been tested. This concern was discussed amongst academia and practice members of the local nursing research consortium. After much deliberation, the decision to develop a collaborative nursing research study was undertaken to test an intervention, known as Team Tactics, to improve unit teamwork and reduce missed nursing care.

#### **Design/Methods**

The non-randomized intervention research received approval from the respective internal review structure of each Mid-west hospital (n=8) and the local university Institutional Review Board. Seven acute care medical centers and one critical access hospital in two adjacent Mid-west states participated. Medical, surgical, combined medical-surgical units, and critical care units, as defined by the National Database of Nursing Quality Indicators (Press Ganey, Kansas City), were eligible. Staffed beds in acute care centers ranged from 136 to 350; the critical access hospital staffed 25 beds. A total of 957 nurses and nursing assistants were eligible to participate in the study. Individual subject inclusion criteria were 1) registered nurse (RN) or nursing assistant (NA) that worked on an eligible unit; 2) worked at least 50% at the bedside; 3) worked a full-time equivalent status of 0.5 or greater; and 4) received information on study requirements and signed the study consent.

The teamwork intervention program, Team Tactics (Kalisch, Xie, & Ronis 2013), began with a 2-day train-the-trainer methodology session for key nurses and principal hospital leads. Participants were trained to identify and practice positive feedback and to disseminate the training on their study units. Once consented, participants completed the baseline questionnaire and attended the training sessions. Questionnaires were repeated at post intervention and follow-up time points. Trainers mentored all staff in using teamwork feedback during the normal work day. Principal leads performed three fidelity checks to ensure the intervention was consistently applied in their respective hospitals.

Three data points were collected: pre-intervention, one month following the intervention (post-intervention) and five months (follow-up) after the intervention period. Fifteen demographic and six-unit characteristics were collected at baseline. Two surveys were completed at all time points. The Nursing Teamwork Survey had 33 items in 5 subscales that asked for frequency of behaviors observed. Scores ranged from 0-4 with higher scores reflecting a more positive perception that the behaviors were present. Internal reliability by Cronbach alphas ranged from .77 to .82. MNC was assessed by the MISSCARE survey that asked respondents to rate the frequency of 24 elements of nursing care that were perceived to be missed by themselves or unit staff. Scores ranged from 0-4 with higher scores reflecting perception of more missed care. Internal reliability by Cronbach alpha was .93. Statistical analyses were performed with SPSS Statistics v22 (IBM Corp. Armonk, NY). Probability was set at 0.05 and effect size calculated with partial eta squared. Demographic and unit characteristics were described with percent, means, medians, and percentiles as determined by the data type with the general linear model univariate analyses. Survey items were analyzed with Friedman's Two-Way Analysis of Variance by Ranks with Wilcoxon signed-rank tests used for post-hoc analysis with Bonferroni adjustment and reported by median and percentiles. Rho and Pearson's correlation matrices were used to identify associated variables. Variables that were conceptually and statistically significant were placed in models. Standard multivariate regression models were developed to identify factors that contributed to the dependent variable Team Trust for critical care units and for medical-surgical units. After normality, linearity, homoscedasticity, and multicollinearity assessment, several iterations were explored.

### **Findings**

Of eligible units, 26 participated (84.6%): four critical cares, eight medical, five surgical, and nine combined medical/surgical units. Of eligible participants, 650/957 (68%) consented of which 59 withdrew; leaving a remainder of 591 participants. Of these, 515 entered the online survey site and completed the first survey with 473 having usable data for sample description. Matched participants that completed all three surveys (n=185) were analyzed in the repeated measures analyses.

The mean age for the entire sample was 34.9 (11.3) years, with 387 (75%) nurses and 86 (16.6%) nursing assistants. Of the 77% degreed nurses, associate degree was the largest group (44.4%). Staffing was reported to be adequate 61.4% of the time. Twelve-hour day shift was the most frequent shift worked (55.1%). The majority of participants worked on the unit from 6 months to 5 years (50.4%) and in their role as RN or NA (46.5%).

There was no difference in the number of participating nurses among the unit types. Critical care had significantly less nursing assistants than all other units. No difference was detected for unit or RN full time equivalents among the units. Medical and surgical units had significantly less hours per patient day and RN hours per patient day, resulting in a significantly less skill mix.

The Nursing Teamwork Survey showed no differences across time periods (pre-intervention, post-intervention, and follow-up) for the teamwork subscale scores. MNC had a statistically significant decrease (less care elements missed) in the median total MNC scores across the three time periods  $\chi^2 (2, n=136) = 8.5, p = .014$  with no differences among unit types.

The final model for factors that impact Team Trust (dependent variable) for critical care units were three variables: Pre-intervention Team Backup ( $r = .579$ ), Leadership ( $r = .469$ ), and Shared Mental Model ( $r = .618$ ). These variables explained 38.6% of the variance in the model with pre-intervention shared mental model having the most unique contribution with a beta value of .427,  $p = .008$ . The final model for factors that impact Team Trust (dependent variable) for medical-surgical units were four variables: Post-intervention Backup ( $r = .718$ ) and Orientation (defined as team cohesiveness) ( $r = -.380$ ), and Pre-intervention Leadership ( $r = .367$ ) and Adequacy of Staffing ( $r = .285$ ). These variables explained 55.9% of the variance in the model with pre-intervention backup (beta = .639;  $p = .000$ ) and adequacy of staffing (beta value = .188;  $p = .007$ ) having the most unique contributions to the model.

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**Title:**

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**Keywords:**

missed nursing care, nurse environment and teamwork

**References:**

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### **Abstract Summary:**

This session describes the effectiveness of Team Tactics training as a catalyst to improve teamwork skills and behavioral strategies that develop mutual trust and a perception of decreased missed nursing care.

### **Content Outline:**

#### Introduction/Background

1. Delivery of nursing care requires working together to accomplish nursing goals
1. Breaches in nursing care produces missed nursing care compromises patient outcomes
2. Missed nursing care is care that is omitted or delayed
2. The approach to nursing care delivery must reflect teamwork
1. Teamwork entails team trust and communication
2. A lone nurse or inadequate staffing projects a disjointed approach to care
3. Team tactics intervention is tested to improve unit teamwork and reduce missed nursing care

#### Body

1. A non-randomized collaborative intervention to reduce perception of missed nursing care
1. The team consist of eight hospitals (7-acute care and 1-critical access)
2. Staffed beds of participating hospitals ranged from 136-350 with a total of 957 eligible nurses and nursing assistants
3. Intervention was Team Tactic training with a 2-day train-the-trainer methodology to key unit nurses and principal hospital leads
4. Trainers identified and practiced positive feedback and disseminate the training on their study units
2. Data collection and analysis
1. Data points: pre-intervention, one month following the intervention (post-intervention) and five months (follow-up) after the intervention period
2. Surveys were completed at all time points
3. Statistical analyses were performed with IBM SPSS Statistics v22
4. Demographic and unit characteristics were obtained
3. Findings
84. Of eligible units, 26 participated (84.6%); 650/957 (68%) consented
85. The mean age was 34.9 with 387 nurses (75%) and 86 nursing assistants (16.6%)
86. The most frequent shift worked was 12hr-day shift (55.1%).

87. Nursing Teamwork Survey showed no differences across time periods for the teamwork sub-scale scores
88. The main outcomes of Team Tactics methodology was the reduced perception of care missed on the units, although there was no differences in teamwork score
- Conclusion and Implications
1. Staff trained in teamwork skills and behavioral strategies develop mutual trust and perceive a significant decrease in missed nurse care
  2. Using Team Tactics methodology as a catalyst for behavior change improves teamwork within the patient care environment

First Primary Presenting Author

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**Author Summary:** Dr. Lois M. Stallings Welden, RN, CNS is from Deaconess Hospital of the Deaconess Health System in Evansville, Indiana. She has extensive leadership experience in nursing practice, mentors nurse-led evidence base projects, and leads clinical nursing research. She was a principal lead in this teamwork and missed nursing care study. She is an active member of the local Health Care Research Consortium from which this study originated.

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**Author Summary:** Dr. Wathen is the research and evidence based practice coordinator at Deaconess Hospital, Inc. She is an original member of the local nursing research consortium formed in 2014. Ellen was a Principal Investigator for her site within the collaborative teamwork intervention study.

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**Author Summary:** With over 25 years in designing and leading clinical research Dr. Winsett led this 8 hospital collaborative research. She has taught nursing research and evidence-based practice at the doctorate level and participates on several NIH grant review panels. She is currently the Editor -in-Chief of the science journal Progress in Transplantation.