




The Impact of Shift Length on Mood and Fatigue in Registered Nurses: *Are Nurses the Next Grumpy Cat?*


Wendy Ungard, DNP, RN, NEA-BC
Cincinnati Children's Hospital, Cincinnati, OH



Program Outcomes:



 Review of Current Literature on Nurse Fatigue

 Identify Mitigation Strategies to Minimize Nurse Fatigue



Background

- Fatigue contributes to an increase in work-related injuries, car crashes during commutes, and diminished health for the nurse
- Fatigue has an impact on patient care errors
- Nurses who work > 12 hours are 3x more likely make errors

Background (continued)



INSTITUTE OF MEDICINE



The Joint Commission

IOM published findings that stated extended work hours and insufficient sleep can lead to patient errors

TJC issued Sentinel Event Alert regarding nurse fatigue and patient safety



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Background (continued)

- Nurse fatigue can occur due to demands of physical work, long hours and persistent thoughts of work
- This study supports current literature related to nurse fatigue and provides additional data demonstrating the impact of shift length on mood and fatigue



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Problem Statement

- The goal of this study was to determine baseline sleep, physical activity, and work hours, and relate these to the fatigue and mood states of registered nurses working 8-hour and 12-hour shifts



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Methods

- Sample
- Recruitment
- Inclusion/Exclusion
- Surveys
- Analysis of data



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Measures and Analysis: Research Questions

- How do nurses working 8-hour shifts compare to 12-hour shifts on physical activity (steps per day), sleep quality, body mass index, work immersion and social support?
- How well do the factors of physical demands, work immersion, social support and sleep quality predict chronic fatigue, acute fatigue, inter-shift recovery and mood in RN's working 8 or 12 hour shifts?
- Is there a difference among shifts for fatigue, inter-shift recovery and mood state?

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Measures and Analysis (continued)

- SPSS 22.0
- Descriptive statistics
- Independent Sample t-test
- Multiple Regression
- Analysis of Variance (ANOVA) and Multiple Analysis of Variance (MANOVA)
- Significance level was $p < 0.05$

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Results

- 97% of RNs reported their workload to be heavy or extremely heavy
- No difference in steps, work immersion, social support, or BMI for nurses working either an 8 or 12-hour shift
- There was a difference in sleep quality and age



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Results (continued)

- 4 Multiple regression analyses conducted to predict chronic fatigue, acute fatigue, inter-shift recovery and mood
- Independent Variable = work immersion, sleep quality, social support and average daily steps
- Higher work immersion and lower sleep quality, but not average daily steps predicted chronic fatigue



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Results (continued)

- Higher work immersion was a significant predictor for acute fatigue. Physical activity, sleep quality and social support were not
- None of the IV predicted inter-shift recovery
- MANOVA was conducted to determine effect of shift length on chronic and acute fatigue, inter-shift recovery and mood state
- Less inter-shift recovery for the 12-hour shift RNs. No difference for mood, chronic, or acute fatigue.



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Table 1

Demographic Characteristics for Registered Nurses Working 12-hour Day and Night Shifts and 8-hour Day and Evening Shifts

	Shift Type	Mean	SD	N
Age	12-hr AM	31.26	3.856	19
	12-hr PM	29.41	6.672	20
	8-hr Day	43.11	11.448	18
	8-hr Evening	30.33	7.129	18
BMI	12-hr AM	36.25	6.79	19
	12-hr PM	26.85	6.35	20
	8-hr Day	28.55	7.27	18
	8-hr Evening	27.31	4.91	18

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**Pearson Correlations (r) for Independent Variables**

	OFER-C	OFER-A	OFER-R	POMS
Avg. Steps	.017 (.442)	.156 (.088)	.031 (.393)	.096 (.203)
Sleep Quality	.262** (.011)	.116 (.158)	.188** (.051)	.228** (.023)
Work Immersion	.444** (.000)	.338** (.001)	.295** (.005)	.158 (.084)
Social Support	.251** (.014)	.120 (.150)	.136 (.120)	.001 (.498)

* $p < 0.05$ ** $p < 0.01$

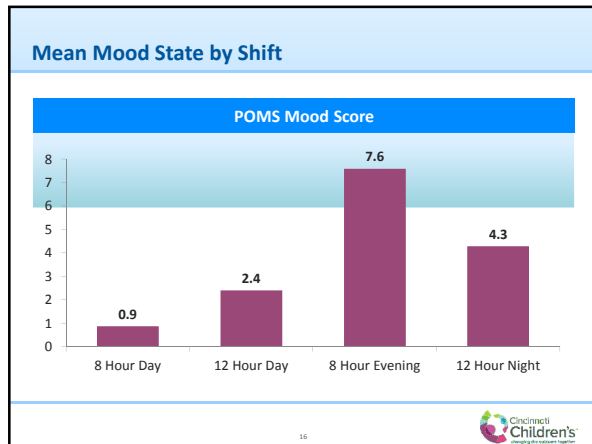
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**Table 2. Mean and SD of Fatigue and Mood Scores for RN's Working 12-hour Day (A) and Night Shifts (P) and 8-hour Day and Evening Shifts**

	Shift Type	Mean	SD	N
OFER Chronic	12-hr, AM	41.83	22.97	20
	8-hr, Days	49.12	19.27	19
	8-hr, Evenings	35.83	26.55	20
	12-hr, PM	43.83	23.47	20
OFER Acute	12-hr, AM	54.83	12.90	20
	8-hr, Days	49.82	17.44	19
	8-hr, Evenings	48.33	17.08	20
	12-hr, PM	51.33	9.13	20
OFER Recover	12-hr, AM	44.00	15.16	20
	8-hr, Days	36.84	15.92	19
	8-hr, Evenings	33.83	18.23	20
	12-hr, PM	48.66	8.67	20
Total POMS Avg.	12-hr, AM	0.08	9.32	20
	8-hr, Days	2.41	8.17	19
	8-hr, Evenings	7.58	10.71	20
	12-hr, PM	4.27	8.86	20

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Discussion

- Difference in age and sleep quality. Why?
- Social support, higher work immersion, and lower sleep quality predict chronic fatigue. Why?
- Higher work immersion predicted acute fatigue. Why?
- Less inter-shift recovery for 8-hour vs 12-hour. Why?

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Other Considerations


- The research is mixed regarding whether shift lengths and physical fatigue do seem to influence care
- While this study speaks to physical fatigue, another type of fatigue, compassion fatigue may also be a factor in metrics such as safety, quality of care and patient and employee satisfaction

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Questions

A large graphic featuring a blue 'Q', a yellow '&', and a blue 'A'.

The Cincinnati Children's logo, which includes a colorful circular icon and the text "Cincinnati Children's" with "A Division of Cincinnati Children's Hospital Medical Center" below it.

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