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What do we do about tired nurses?

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Introduction of the Project: Nurse Fatigue and Shift Length

- The purpose of this project was to evaluate a scheduling change and measure the impact on nurse fatigue
- The PICO Question: in nurses working in acute care hospitals [P] how does working 8-hour shifts [I] compared to 12-hour shifts [C] affect fatigue [O]?
- The project setting was in a 501-bed hospital in the Phoenix metropolitan area
- The population was full time Registered Nurses changing their shift length from 12-hours to 8-hours



Data

Data collected was self reported via *Checkbox*

The electronic survey was in four parts:

- 1) demographics
- 2) job satisfaction
- 3) questions about work and non-work related factors that may influence fatigue levels
- 4) fatigue levels as measured by The Occupational Fatigue/Exhaustion Recovery (OFER) Scale.

Less than 10 minutes to complete the electronic survey



Winwood, Winefield, Dawson, & Lushington, 2005



The OFER

- 15 item self-report questionnaire that measures acute and chronic fatigue and recovery between shifts
- Likert Scale 0 - 6
- Reported face validity
- 3 subscales (domains) with reported reliability
 - Acute Fatigue (0.82 Cronbach's alpha)
 - Chronic Fatigue (0.93 Cronbach's alpha)
 - Intershift Recovery (0.75 Cronbach's alpha)

Winwood, Winefield, Dawson, & Lushington, 2005



The OFER Questions to Measure Acute Fatigue

1. I often feel I'm '*at the end of my rope*' with my work
2. I often dread waking up to another day of my work
3. I often wonder how long I can keep going at my work
4. I feel that most of the time I'm just "Living to Work"
5. Too much is expected of me in my work



The OFER Questions to Measure Chronic Fatigue

6. After a typical work period I have little energy left
7. I usually feel exhausted when I get home from work
8. My work drains my energy completely every day
9. I usually have lots of energy to give to my family or friends
10. I usually have plenty of energy left for my hobbies and other activities after I finish work

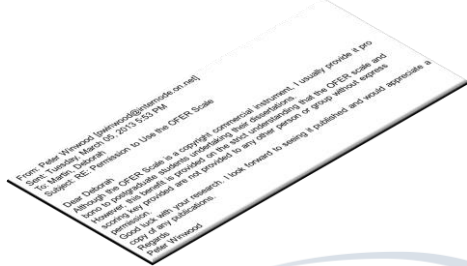


The OFER Questions to Measure Intershift Recovery

- 11. I never have enough time between work shift to recover my energy completely
- 12. Even if I'm tired from one shift, I'm usually refreshed by the start of the next shift
- 13. I rarely recover my strength fully between work shifts
- 14. Recovering from work fatigue between work shifts isn't a problem for me
- 15. I'm often still feeling fatigued from one shift by the time I start the next one

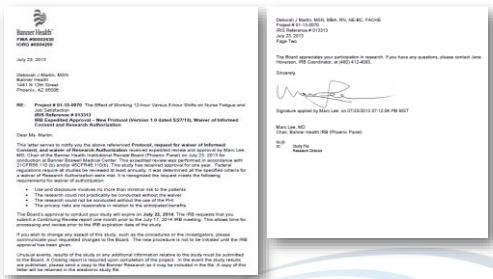


Permission to Use the OFER



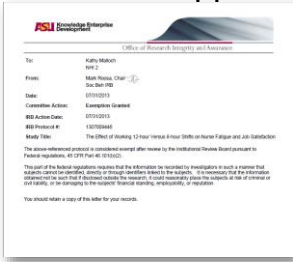


IRB Approval - Organization





IRB Approval - ASU



The Project

- Challenges
 - Changes in leaders
 - Nurses perception of 8-hour shifts
- Celebrations
 - Teamwork
 - Volunteers



Methods

- The nurses who changed their schedule from 12-hour to 8-hour shifts were sent an email with a link to the electronic (Checkbox) survey.



- The Project Director accessed the completed survey via a user name and password at the Checkbox Internet site.



Confidentiality of Data

- Survey responses were de-identified and the project did not involve greater than minimal risk to the subject.
- The results were accessed by the Project Director with a password via the Internet. Responses were downloaded and are stored on a password-protected computer.
- Data will be stored for three years after completion of the project and used only for research purposes. At the end of three years the files will be deleted.
- Results will be presented in aggregate.



What was the analyses of the data?

- Descriptive data, including frequency reports of demographics are presented for the entire sample.
- In addition to frequency analysis, the Wilcoxon matched-pairs test was used to examine the effect of working 8-hour shifts versus working 12-hour shifts on nurse fatigue (acute, chronic, intershift recovery) and job satisfaction post-test.



Evaluation – Demographics

Demographics

Characteristic			
Gender	Female: 57%	Male: 43%	
Marital Status	Married: 57%	Divorced: 14%	Never Married: 29%
Children at home	29%		
Elders at home	0		
Age	20 to 39: 57%	40 to 59: 43%	
Years of experience	1 or less: 57%	3 to 8: 43%	
Educational degree	Bachelor: 57%	Associate: 43%	



Evaluation – Hours of Sleep

Average Hours of Sleep per Night

	n	Minimum	Maximum	Mean (SD)	Median	P*
12-hour shift average sleep per night	7	6.0	8.5	6.9 (.85)	7.0	
8-hour shift average sleep per night	7	6.0	9.0	7.2 (.99)	7.0	
The median of differences between average sleep time in hours while working 12-hour shifts and average sleep time in hours while working 8-hour shifts equals 0						.059

*Related Samples Wilcoxon Signed Rank Test p < .10



Evaluation – Hours Worked

Average Hours Worked per Week

	n	Minimum	Maximum	Mean (SD)	Median	P*
12-hour shift average hours worked per week	7	36.0	40.0	36.71 (1.5)	36.0	
8-hour shift average hours worked per week	7	36.0	42.0	37.57 (2.4)	36.0	
The median of differences between average hours worked per while working 12-hour shifts and average hours worked while working 8-hour shifts equals 0						.180

*Related Samples Wilcoxon Signed Rank Test p < .10



Evaluation – Acute Fatigue

Acute Fatigue

	12-hour shifts	8-hour shifts	p*
Mean acute fatigue scores	55.28	51	
Median acute fatigue scores	60.0	50.0	
The median differences between working 12-hour shifts and 8-hour shifts for acute fatigue would be zero.			.157

*Related Samples Wilcoxon Signed Rank Test p < .10



Evaluation – Chronic Fatigue

Chronic Fatigue

	12-hour shifts	8-hour shifts	p*
Mean chronic fatigue scores	37.71	33.28	
Median chronic fatigue scores	33.0	26.0	
The median differences between working 12-hour shifts and 8-hour shifts for chronic fatigue would be zero.			.157

*Related Samples Wilcoxon Signed Rank Test p < .10



Evaluation – Inter-shift Recovery

Inter-shift Recovery

	12-hour shifts	8-hour shifts	P*
Mean Inter-shift recovery scores	52.42	45.71	
Median inter-shift recovery scores	53.0	43.0	
The median differences between working 12-hour shifts and 8-hour shifts for inter-shift recovery would be zero.			.027

*Related Samples Wilcoxon Signed Rank Test p < .10



Evaluation – Shift Accomplishments

- Satisfaction with the grade they would have given their last shift worked and the satisfaction with what they were able to accomplish during the shift did not differ significantly between 12-hour shifts and 8-hour shifts



Concluding Remarks and Potential Impact



- Shift length and nurse fatigue has been identified as a concern in the literature.
- The impact to individuals may be a change in his or her fatigue levels.

American Nurses Association, 2013



Concluding Remarks and Potential Impact

- A goal of the Chief Nursing Officer at the hospital was to have her hospital be known for offering a variety of scheduling options. This pilot gave her data related to hiring nurses into 8-hour positions instead of only offering 12-hour positions.
- Follow up qualitative study to understand the lived experience of nurses who have worked both 12-hour shifts and 8-hour shifts.



References

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