

An explorative study on the impact of Daylight and View among Operating Room Nurses

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Introduction

Hospital environment should support the needs of **patients** and **care professionals**.

- Staff shortage
- Job satisfaction
- Work stress



- ❖ *Djukic et al. Exploring Direct and Indirect Influences of Physical Work Environment on Job Satisfaction for Early-Career Registered Nurses Employed in Hospitals (2014).*
 - ❖ *Mahmood et al. Nurses' perceptions of how physical environment affects medication errors in acute care settings. (2011).*
 - ❖ *Applebaum et al. The impact of environmental factors on nursing stress, job satisfaction, and turnover intention (2010).*
- 2 An explorative study on the impact of Daylight and View among Operating Room Nurses

Introduction

Studies reporting the benefits of **daylight** and **view**.

- Erros
- Sleep
- Restoration
- Mood



- ❖ *Aries et al. Daylight and health: A review of the evidence and consequences for the built environment (2015)*
- ❖ *Chaudhury et al. The Effect of Environmental Design on Reducing Nursing Errors and Increasing Efficiency in Acute Care Settings (2009).*
- ❖ *Beute, F. & Kort, Y. A. W. De. Salutogenic Effects of the Environment : Review of Health Protective Effects of Nature and Daylight (2014).*
- ❖ *Boubekri et al. Impact of windows and daylight exposure on overall health and sleep quality of office workers: A case-control pilot study (2014).*
- ❖ *Marqueze, E. C. et al. Natural light exposure, sleep and depression among day workers and shiftworkers at Arctic and Equatorial Latitudes (2015).*

Introduction

Current situation in the Netherlands*

- 35% of all 108 hospitals only had **no windows** OR's
- 55.5% of all 978 Operating Rooms had **no windows**

* April 2018



Aim

Identify the benefits of windows in an operating room related to stress, job satisfaction, vitality, seasonal effect, and well-being of OR-nurses.

- Only limited number of studies performed in hospitals



- ❖ Zadeh et al *Workplace From Healthcare Workers' Perspective: Behavioral and Environmental Strategies to Improve Vigilance and Alertness in Healthcare Settings* (2018)
- ❖ Alimoglu & Donmez. *Daylight exposure and the other predictors of burnout among nurses in a University Hospital* (2005)
- ❖ Dianat et al. *Objective and subjective assessments of lighting in a hospital setting: implications for health, safety and performance* (2013)

Method

Online Survey 4 hospitals, 119 responses,

- Female 82%
- OR (68%) Anaesthetics (32%)
- Age 42.2 (± 12.4) Yrs old
- Work week 29 (± 6) hrs

Questions

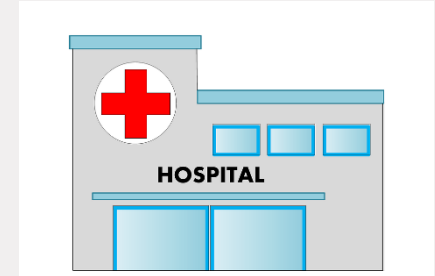
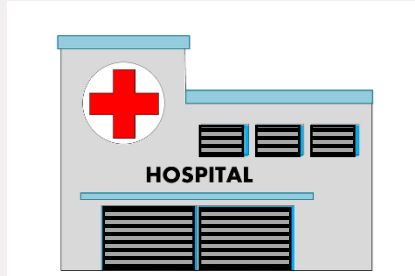
- Experience and Evaluation of Work (Dutch, VBBA)
- SPAQ (Seasonal Pattern Assessment Questionnaire)
- ADAC (Activation-Deactivation Checklist)



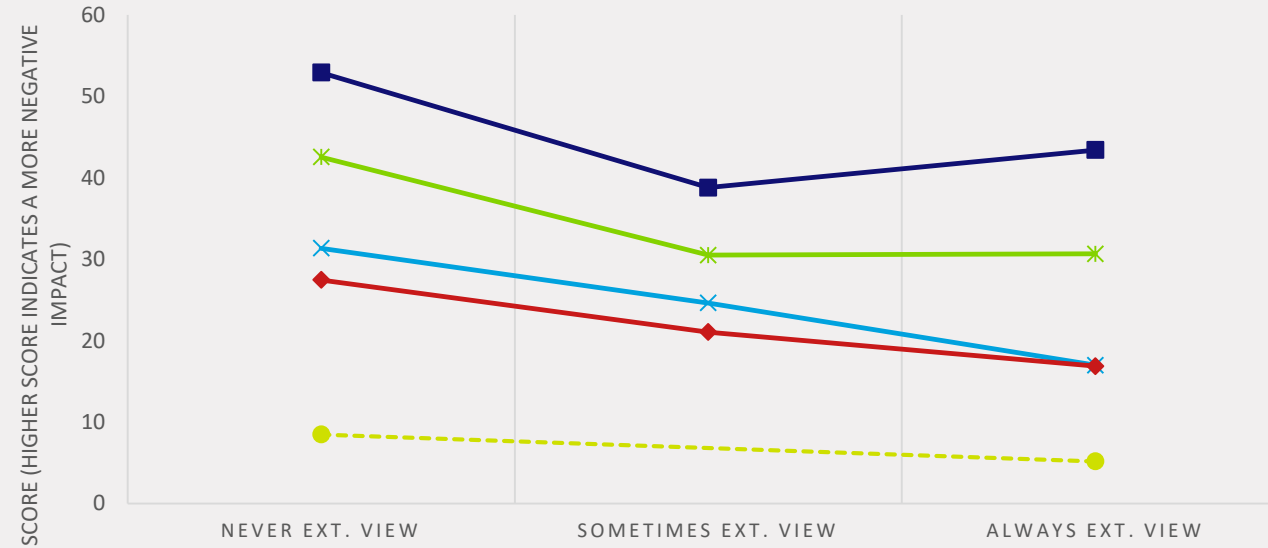
View

3 groups identified:

1. Never view
2. Always view
3. Sometimes view



Results



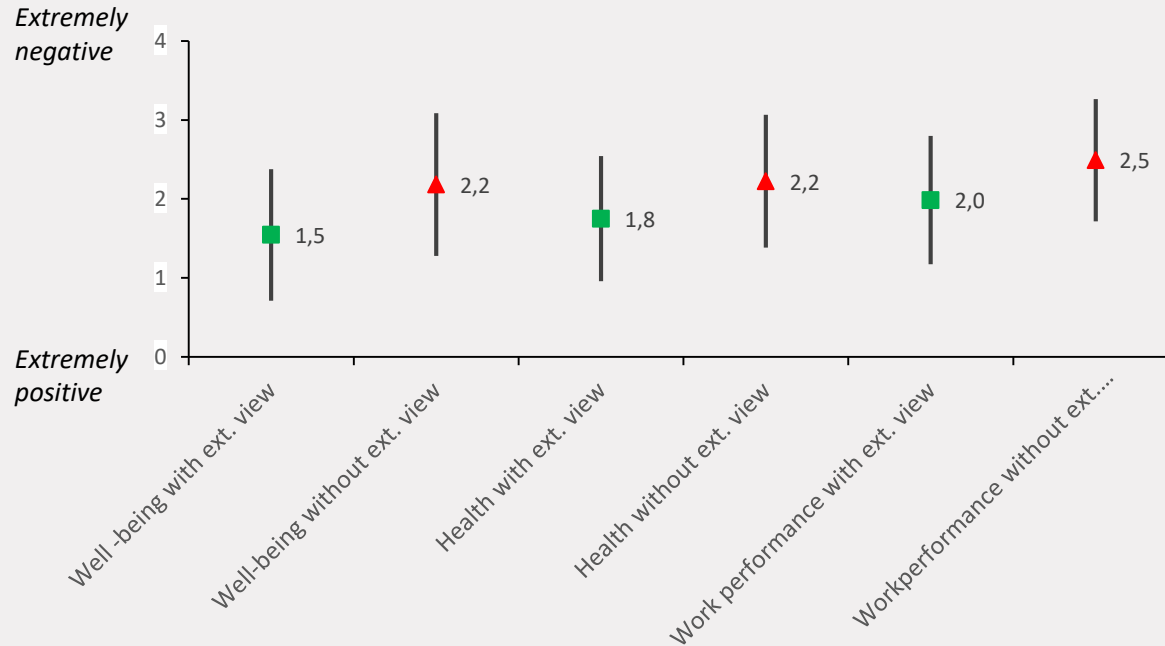
Energy during work	NoV-SometiV**
Recovery after work	NoV-SometiV* NoV-AlwaysV*
Work pleasure	NoV-AlwaysV**
Emotional reaction during work	NoV-AlwaysV*
Stress	NoV-AlwaysV**

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



Results

Perception on impact of windows



Results

Satisfaction with lighting conditions

- Nurses always working in OR's with windows significantly more satisfied with lighting conditions than nurses with never windows.
- 94% of all nurses would like to work in an OR with external windows, 2% without ext. windows

Conclusion

Working in an OR without window had a negative impact on

- Perceived stress
- Work pleasure
- Energy during work
- Emotional reaction during work
- Recovery after work
- No impact on SPAQ, nocturnal awakenings, fatigue during work, sleep

But, people might be biased



Follow-up study planned

Field study among OR-nurses.

Cross-over design with and without daylight openings in OR.

- Outcome measures
 - Self-reported Stress and Vitality (Experience Sampling Method)
 - Heart Rate Variability (as measure for stress)
 - Continuous light measurements



Thank you for your attention!

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