

The importance of occupational health for patient safety: Learnings from a development project

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1. Introduction

Patient safety and work environment are highly related to each other. Workplaces with good work environment conditions and a positive culture also have good patient safety outcomes [1, 2].

Intervention studies aimed at promoting positive work environment are needed to increase the knowledge on how improvements in work environment can affect outcomes for the patients [2].

Adaption to change (resilience) in healthcare is dependent on collaborative learning processes with a systems perspective [3].

1. Vaismoradi, et al, 2020
2. Braithwaite, et al, 2017
3. Haraldseid-Driftland, et al, 2022

A quality improvement (QI) project was started at the Department of Internal Medicine and Geriatrics (DIMG) in a local hospital in Sweden, to support work environment.

- The Structured Multidisciplinary Work Evaluation Tool (SMET)-method was used. SMET is an Occupational Health Service (OHS) method for support in Systematic Work Environment Management (SWEM)[4-6].
- The project started with pilot testing 2015-2019 and was used in a larger setting during the Covid-19 pandemic 2020-2021 [7].

4. Haraldsson, et al, 2016

5. Haraldsson, et al, 2019

6. Haraldsson, et al, 2021

7. Haraldsson, et al, 2022.

Objectives

- The aim was to evaluate OHS support in SWEM and its effect on work environment and patient safety during the pilot study (2015-2019) and the Covid-19 pandemic (2020-2021).

2. Methods

2.1. Study design

- Action research with a mixed methods approach was used to study the QI project.
- Work environment mapping was conducted quarterly between June-2020 and December-2021 using:
 - The SMET-questionnaire
 - Discussions with a reference group at the department (to increase the understanding of the result in the SMET-questionnaire)
- The results from the SMET-questionnaire and reference group was presented to the management team, which then were able to put in tailored measures to improve work conditions.

2.2. Work environment

- The work environment was measured as employee's degree of problem with the SMET-questionnaire and presented as circle diagrams (red=high degree of problems; yellow=moderate degree of problems; green=low degree of problems).
- Changes during the pilot project 2015-2019 and the Covid-19 pandemic 2020-2021 was evaluated with ordinal effect size (r)(0.1=small, 0.3=moderate, 0.5=large).
- The α -value was set to 0.05.

2.3. Patient safety

Patient safety 2016-2021 was presented with descriptive statistics and evaluated as:

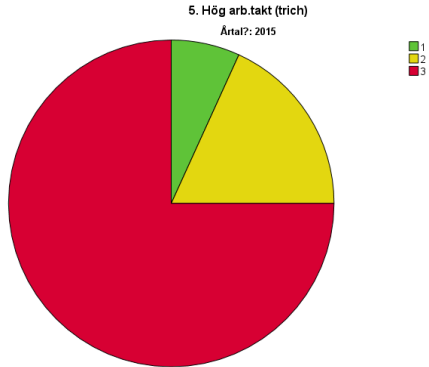
- Number of patient safety risk assessments
 - Identified risks in risk assessments (%)
 - Measures taken in the case of risk (%)
-
- Nursing wards in DIMG (n=4) was compared it to all nursing wards in Region Jönköping County (RJC)(n=44).
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- Public data from the Senior alert register were used. Senior alert is a Swedish national quality register and a tool to support care prevention, prevention for older people who are at risk of falling, getting pressure ulcers, losing weight, developing oral health problems and/or having problems with bladder dysfunction (www.senioralert.se).

3. Results

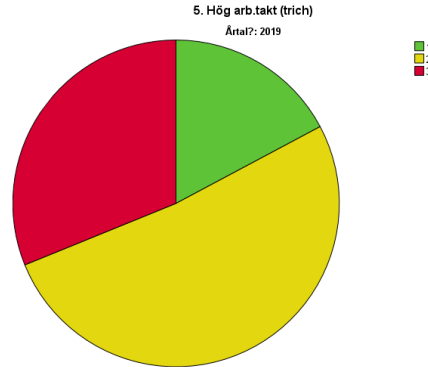
3.1. Work environment

Item 5. Do you experience any problems associated with a high work-pace in your work?

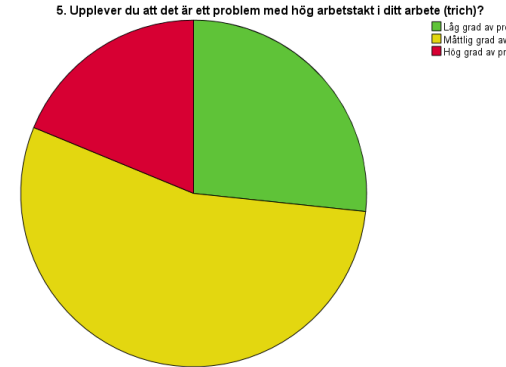
April 2015



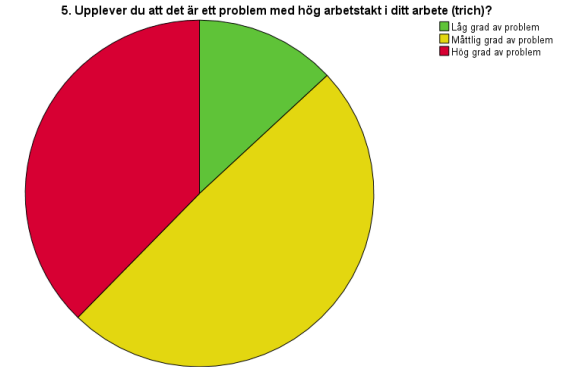
May 2019



Juni 2020



December 2021



Pilot project April 2015 – May 2019

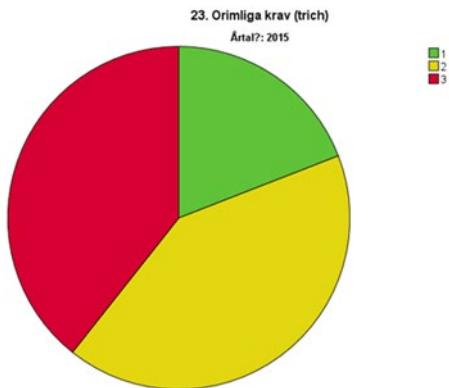
Decreased with a moderate effect size ($r=-0.36$, $p<0.001$)

Covid-19 pandemic June 2020 – December 2021

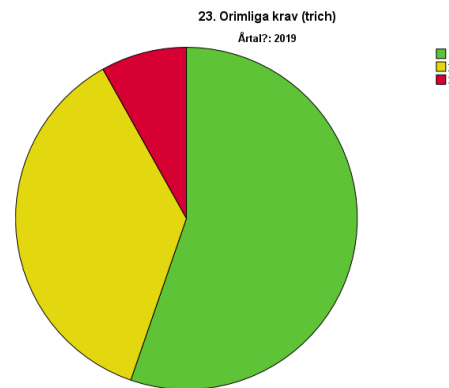
Increased with small to moderate effect size ($r=0.23$, $p<0.001$)

Item 23. Do you experience any problems associated with unreasonable demands in your work?

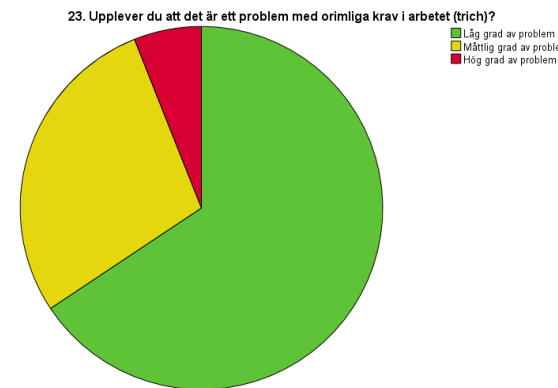
April 2015



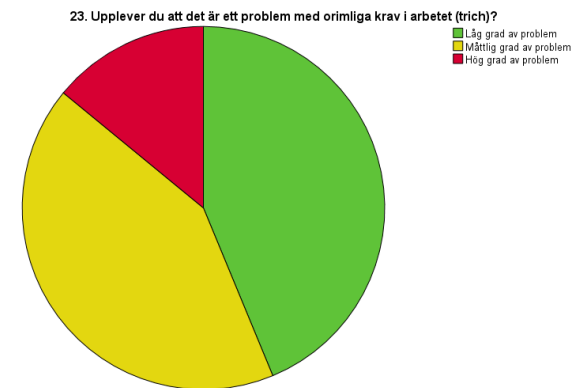
May 2019



Juni 2020



December 2021



Pilot project April 2015 – May 2019
Decreased with a moderate to large
effect size ($r=-0.43$, $p<0.001$)

Covid-19 pandemic June 2020 – December 2021
Increased with small to moderate effect size
($r=0.23$, $p<0.001$)

- Only these two (work pace and work demands) of 22 items in the SMET-questionnaire showed impairments during the Covid-19 pandemic (2020-2021), indicating protective effects on the work environment.

3.2. Patient safety

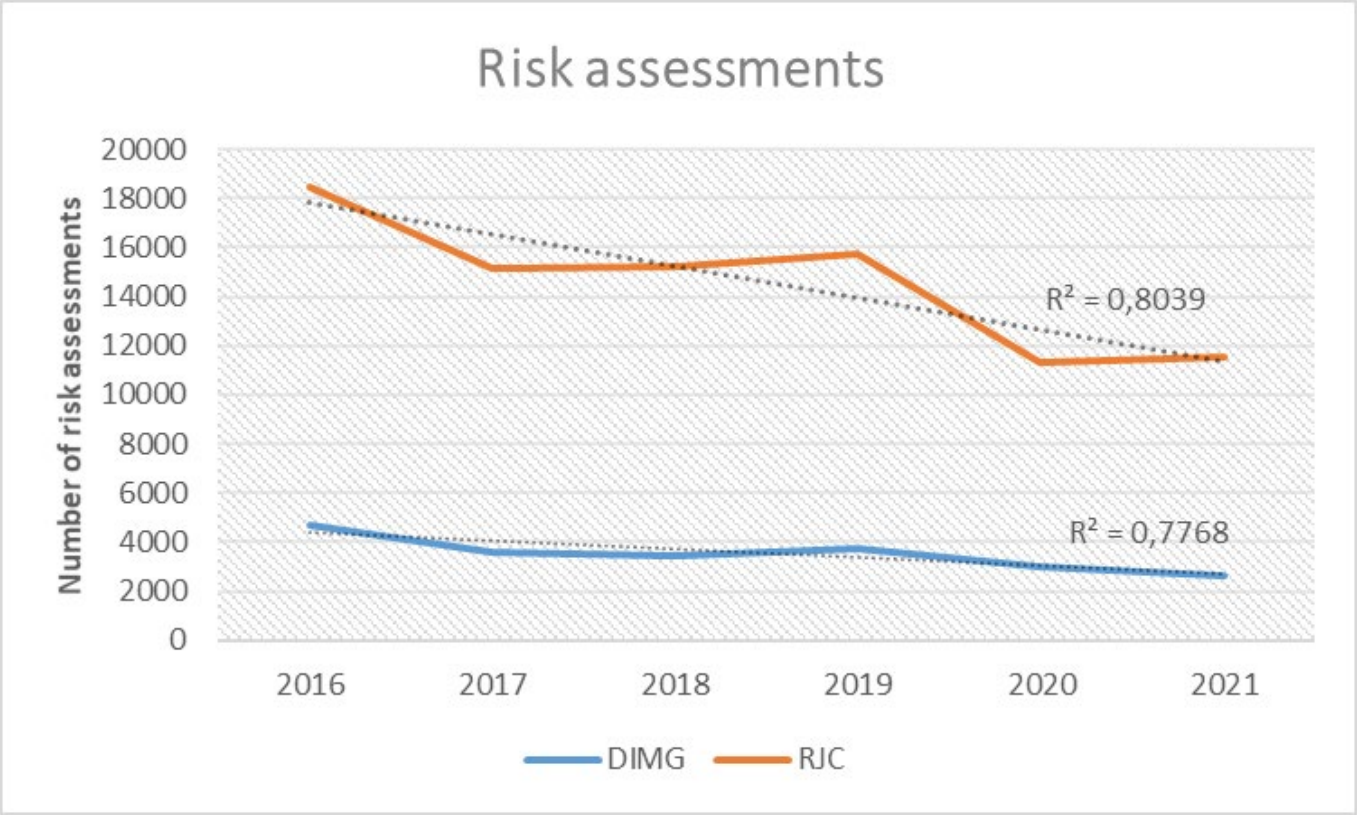


Table 1. Number of patient safety risk assessments divided into Pilot-study mean and Covid-19 study mean.

		DIMG	RJC
Pilot (2016-2019) mean		3865	16139
Covid (2020-2021)mean		2825	11457
	Ratio	0,73	0,71

Diagram 1. Number of patient safety risk assessments from 2016 to 2021 in nursing wards in **Region Jönköping County (RJC)(n=44)** and the **Department of Internal Medicine and Geriatrics (DIMG)(n=4)**.

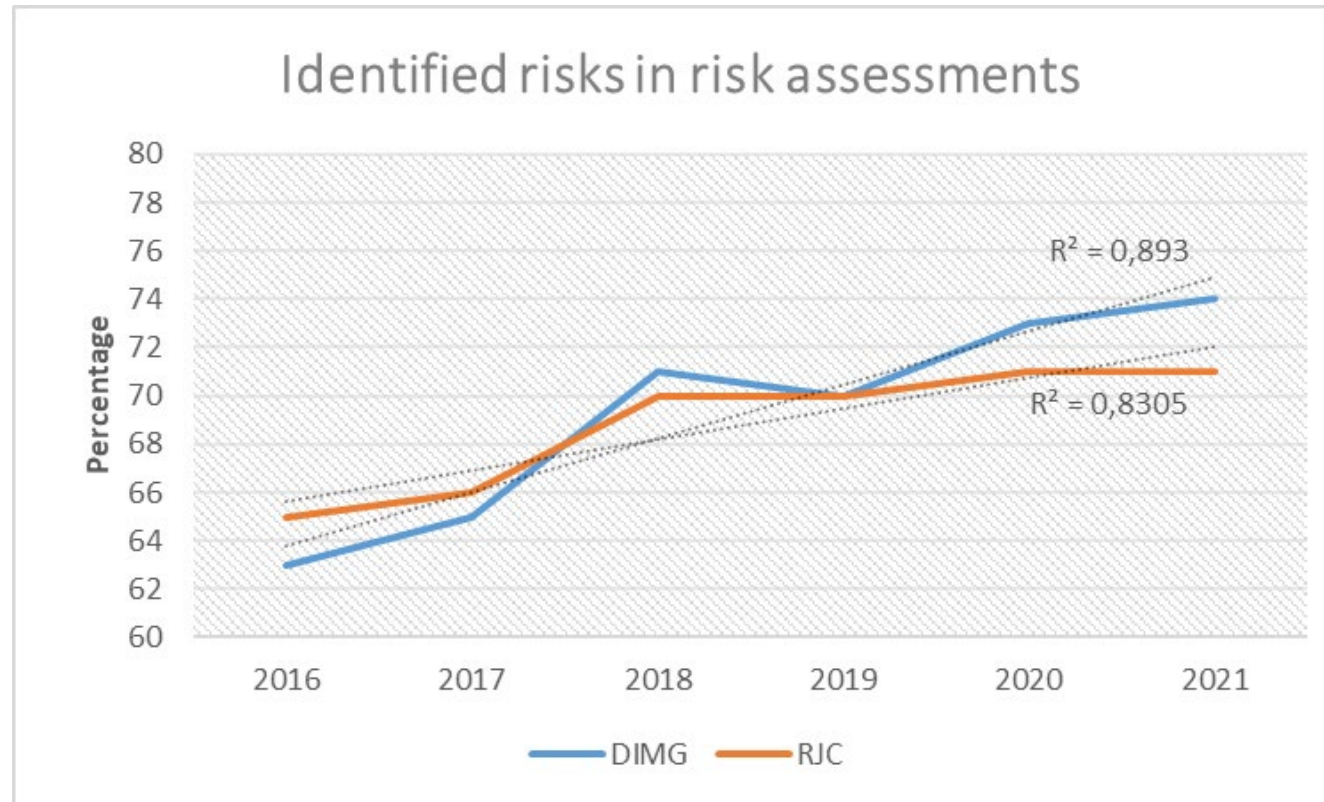


Diagram 2. Identified risks in risk assessments (%) from 2016 to 2021 in nursing wards in **Region Jönköping County (RJC)(n=44)** and the **Department of Internal Medicine and Geriatrics (DIMG)(n=4)**.

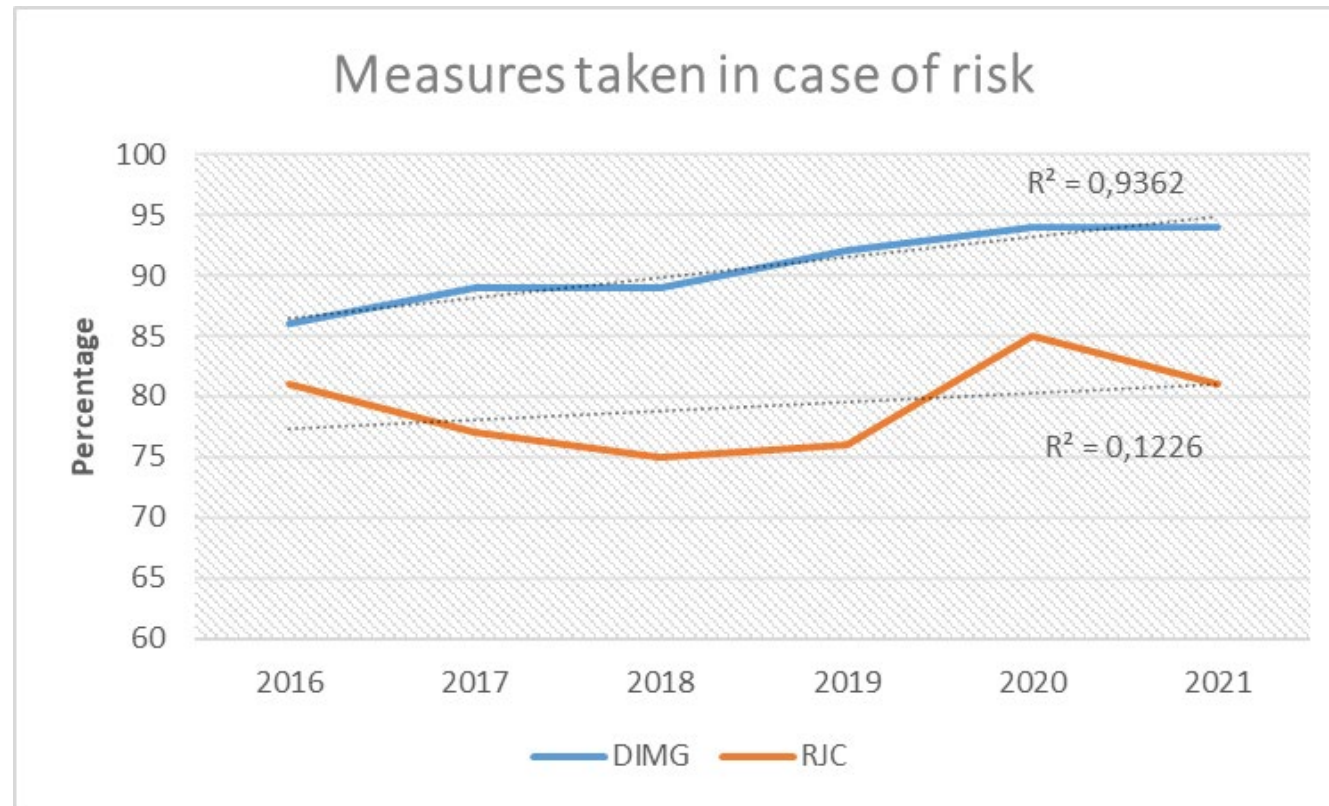


Diagram 3. Measures taken in the case of risk (%) from 2016 to 2021 in nursing wards in **Region Jönköping County (RJC)(n=44)** and the **Department of Internal Medicine and Geriatrics (DIMG)(n=4)**.

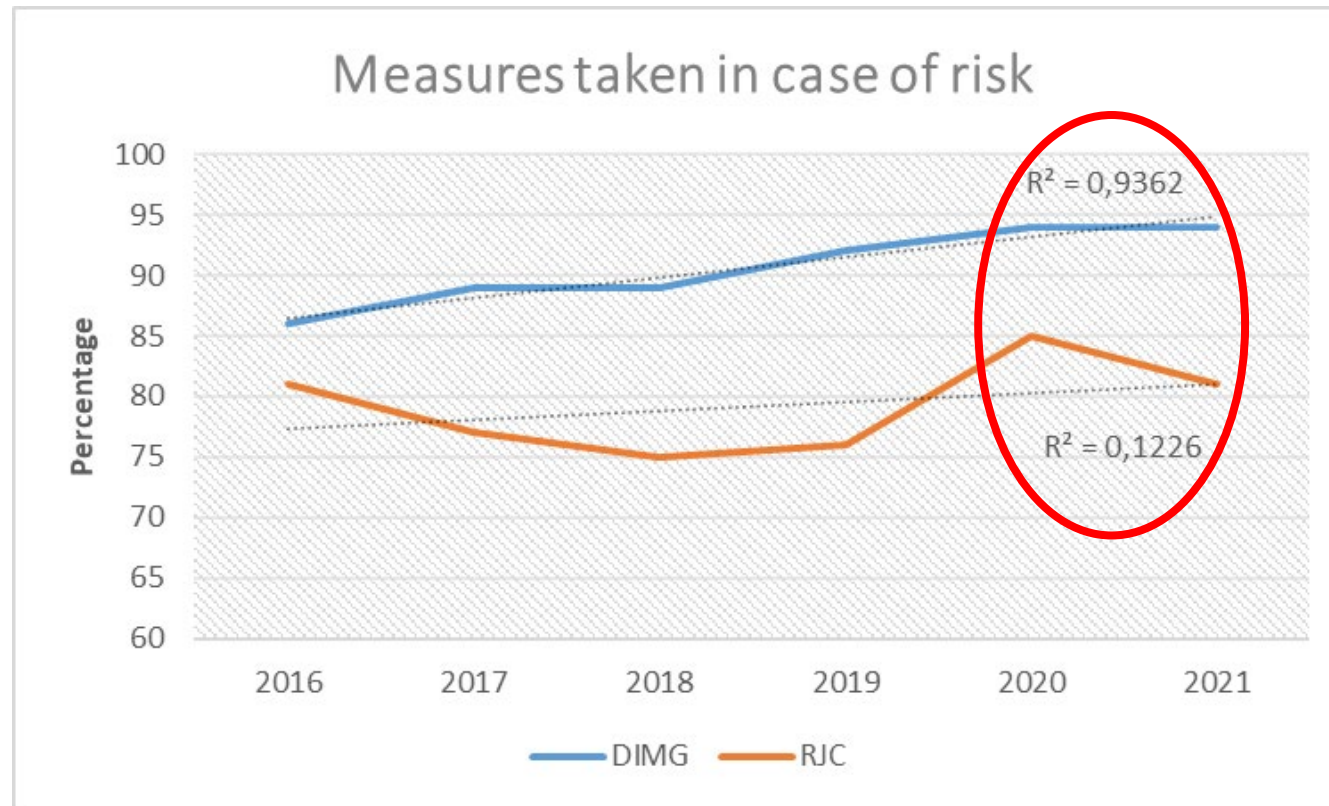


Diagram 3. Measures taken in the case of risk (%) from 2016 to 2021 in nursing wards in **Region Jönköping County (RJC)(n=44)** and the **Department of Internal Medicine and Geriatrics (DIMG)(n=4)**.

Conclusion

- Our results supports previous research showing associations between work environment and patient safety.
- Our work environment intervention shows positive work environment outcomes and parallell changes in patient safety outcome.
 - There was moderate to large improvements in several work environment aspects in the pilot project (2015-2019). During the pilot project parallell improvement in patient safety outcomes was achieved.
 - There was small to moderate impairments in work pace and work demands during the Covid-19 pandemic (2020-2021). During the Covid-19 pandemic maintenance of the good patient safety outcomes was achieved.
- Our quality improvement project shows positive effects on adaption to change (resilience) during the Covid-19 pandemic.
 - Small impairments in work environment during the Covid-19 pandemic.
 - Maintenance of good patient safety outcomes during the Covid-19 pandemic, despite decreases in RJC.
- Our study cannot establish cause and effect due to study design. The results stresses the need of increased knowledge and further research of this association.

Thank you for your attention!