"Like fighting a fire with a water pistol"
A theoretically informed study of the impact on critical care nurses working through the pandemic.

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𝕏 @CandidIcu

Who are we?

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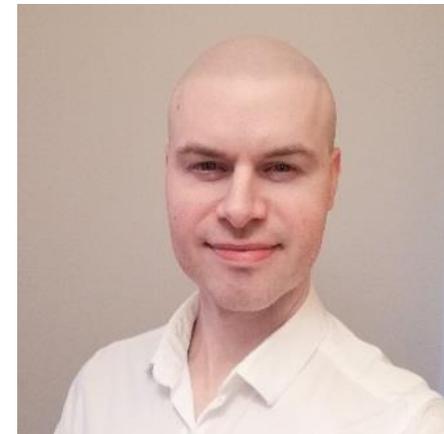Dr Pam Ramsay
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Aims of the CANDID Study

1. To establish and compare levels of work-related stress outcomes in Critical Care Nurses (CCNs) before *versus* during pandemic.

2. To identify and understand the predictors of:
   - Work-related stress.
   - Work engagement.
   - Organisational outcomes.

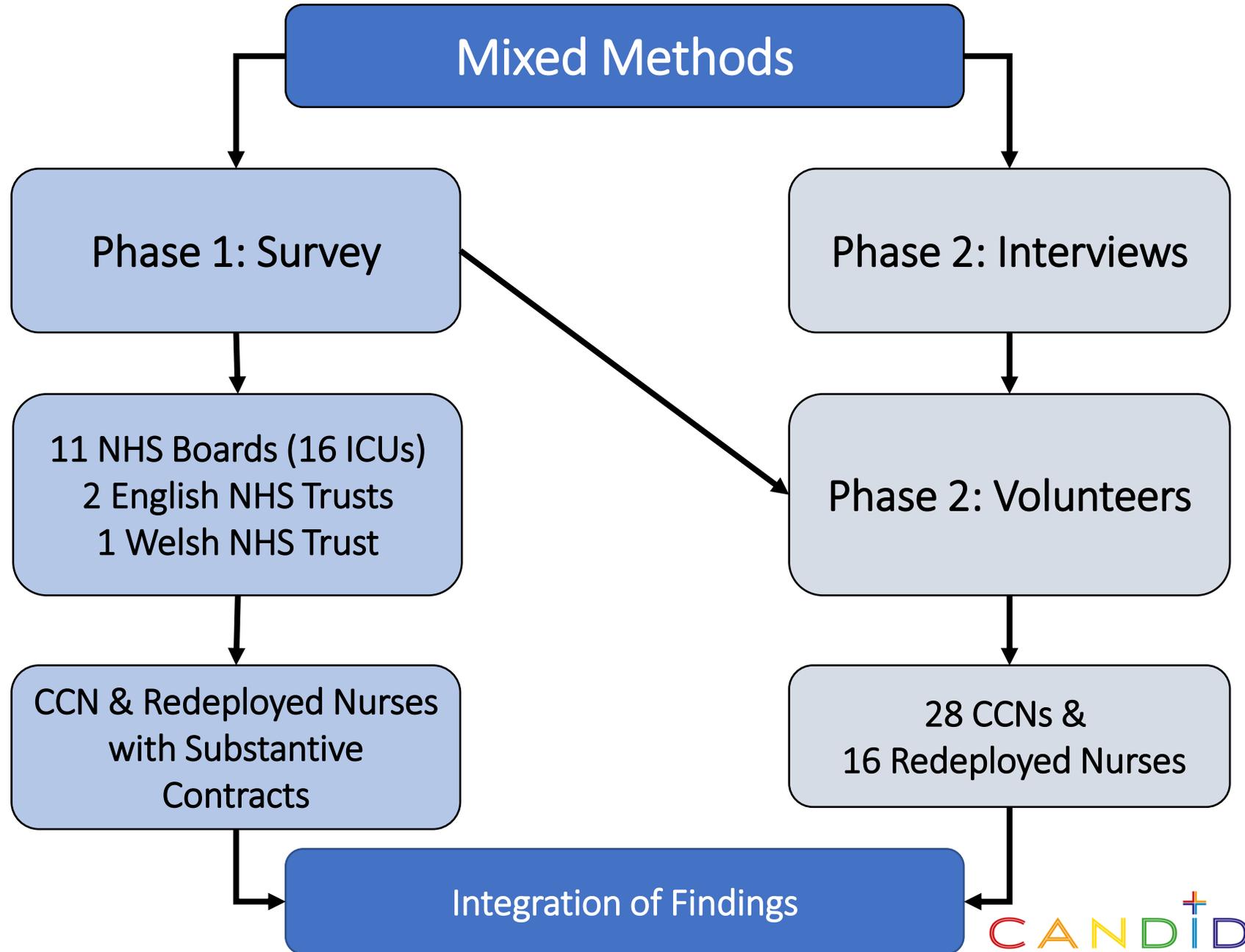3. To gain an in-depth understanding of the experiences of CCNs and Redeployed nurses during pandemic.

Job Demand-Resources Model[1]
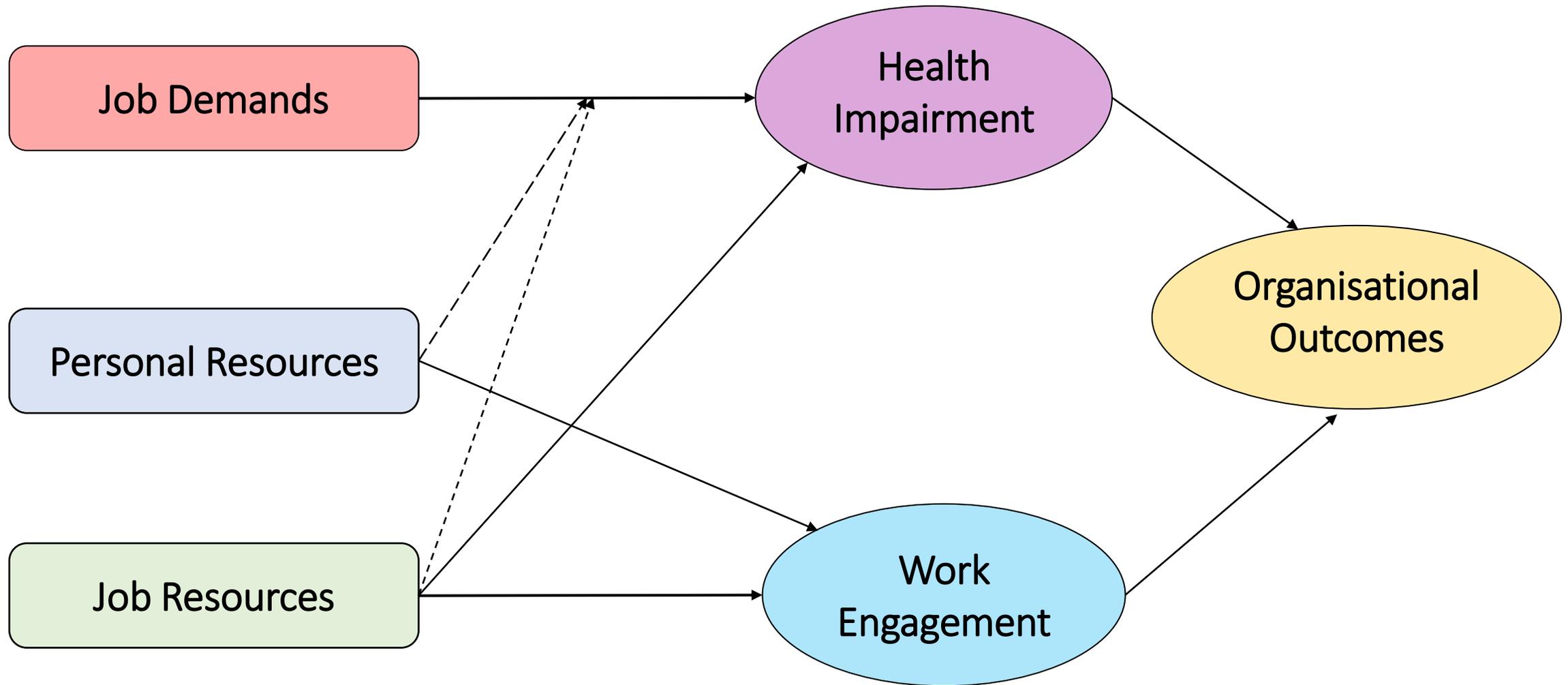
Methods
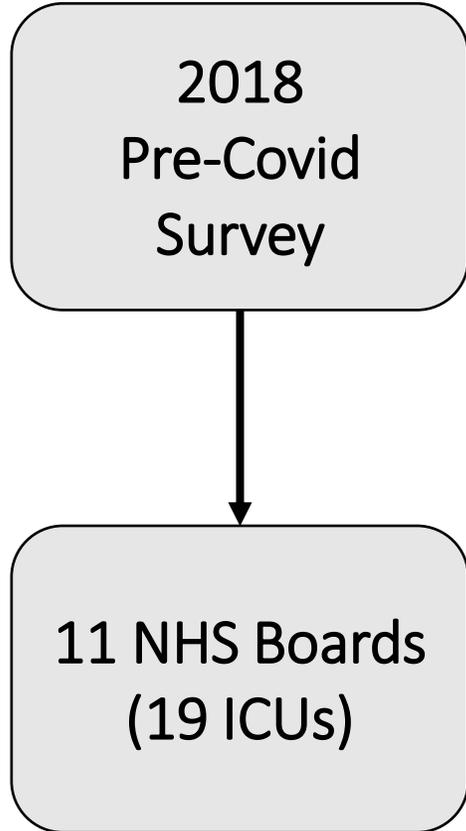
Results – Critical Care Nurse Descriptive Data

Demographics		2018[2] (Survey)	Pandemic (Survey)	Pandemic (Interviews)
Number of participants		557	461	28
Age (Mean (SD))		40·4 (10·2)	39·4 (10·9)	39.1 (10.6)
Gender: % Women		90·1	89·8	82.1
Nursing Experience (years) (Mean (SD))		15·9 (10·1)	15·1 (10·4)	15.1 (10.0)
Critical Care Experience (years) (Mean (SD))		11·7 (9·0)	11·5 (9·3)	12.4 (9.3)
Staff Grade (%)	Band 5	72·1	65·2	46.4
	Band 6	21·3	26·5	32.1
	Band 7+	6·6	8·3	21.5

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Health Impairment: Outcomes & Predictors

Outcome Measures		Predictors
Health Impairment	Other Indicators of **Health Impairment**	Job Demands - Sources of Health Impairment
1. Mental Health: GHQ-12[3]	1. Detachment from Work[6]	1. Pace & Amount of Work[6]
2. Burnout: MBI-HSS[4]	2. Recovery from Work[6]	2. Emotional Load[6]
(i) Emotional Exhaustion		3. Mental Load[6]
(ii) Accomplishment		4. Physical Effort[6]
(iii) Depersonalisation		5. Complexity of Work[6]
3. Symptoms of Post Traumatic Stress: PCL-5[5] *(Pandemic Only)*		6. Role Conflict[6]
		7. Work Organisation[6]
		8. Verbal Aggression Relatives/Visitors[7]
		9. Disproportionate Relatives/Visitors Expectations[7]
		10. Communication with Relatives

Percentage Reaching Probable Score for Caseness on Measures of Health impairment in 2018 v's during Pandemic. (All OR p<0.001)

Higher risk

Lower risk

OR 6.03
OR 4.02
OR 1.53
OR 3.18

For context, prevalence PTSD:
- Ambulance workers: 11%
- Rescue workers: 10%
- General public: Europe =1.9%; NI =8.8%

No measure of PTSD symptoms in 2018

Mental Health
Burnout: Emotional Exhaustion
Burnout: Accomplishment
Burnout: Depersonalisation
PTSD symptoms

Measures of Health Impairment
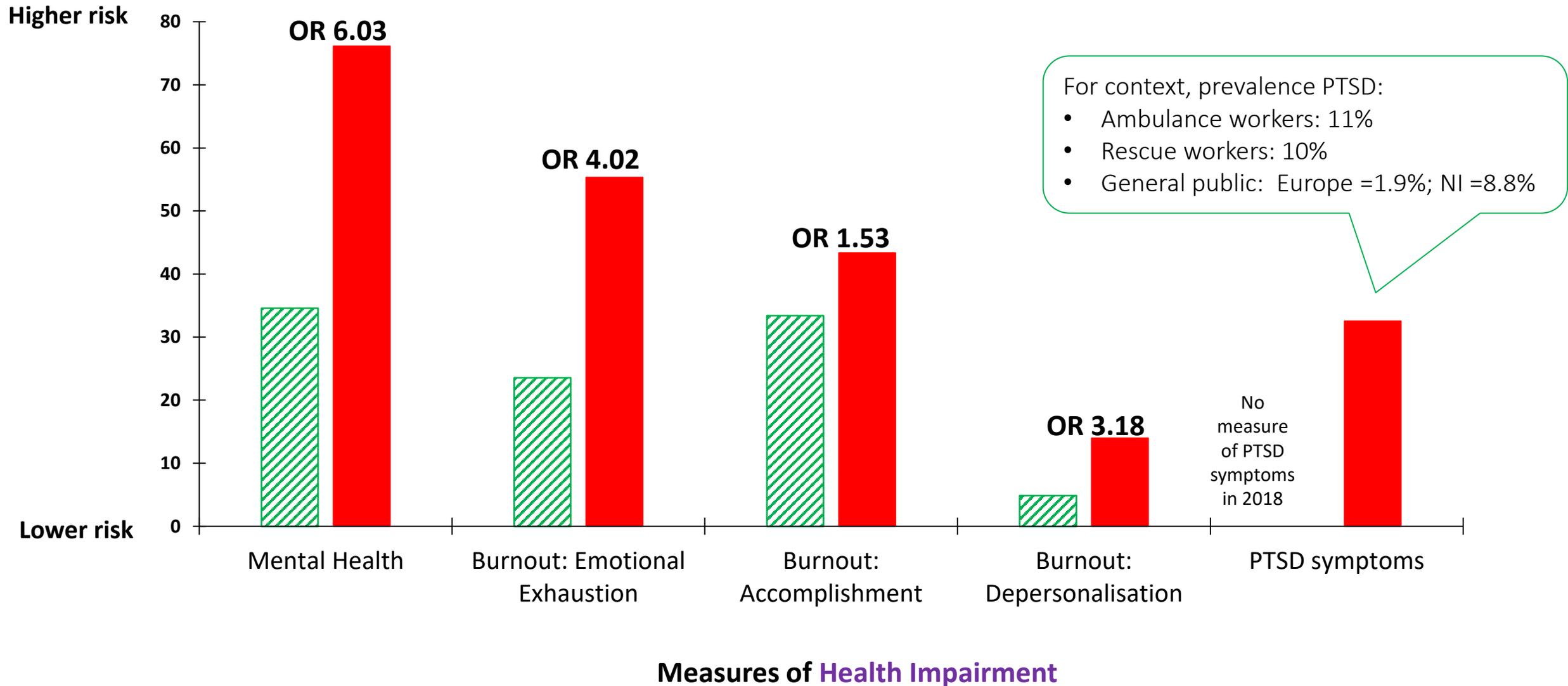
Levels of Health Impairment were Significantly Worse during the Pandemic compared to 2018. (p<0.001)

Worse impairment

Score

Omega² effect sizes, ω²
Small 0.01
Medium 0.06
Large 0.14

ω² 0.20
ω² 0.12
ω² 0.02
ω² 0.03
No measure of PTSD symptoms in 2018
ω² 0.04
ω² 0.06

Mental Health
Burnout: Emotional Exhaustion
Burnout: Accomplishment
Burnout: Depersonalisation
PTSD symptoms
Detachment after work
Recovery after work

INDICATOR OF HEALTH IMPAIRMENT
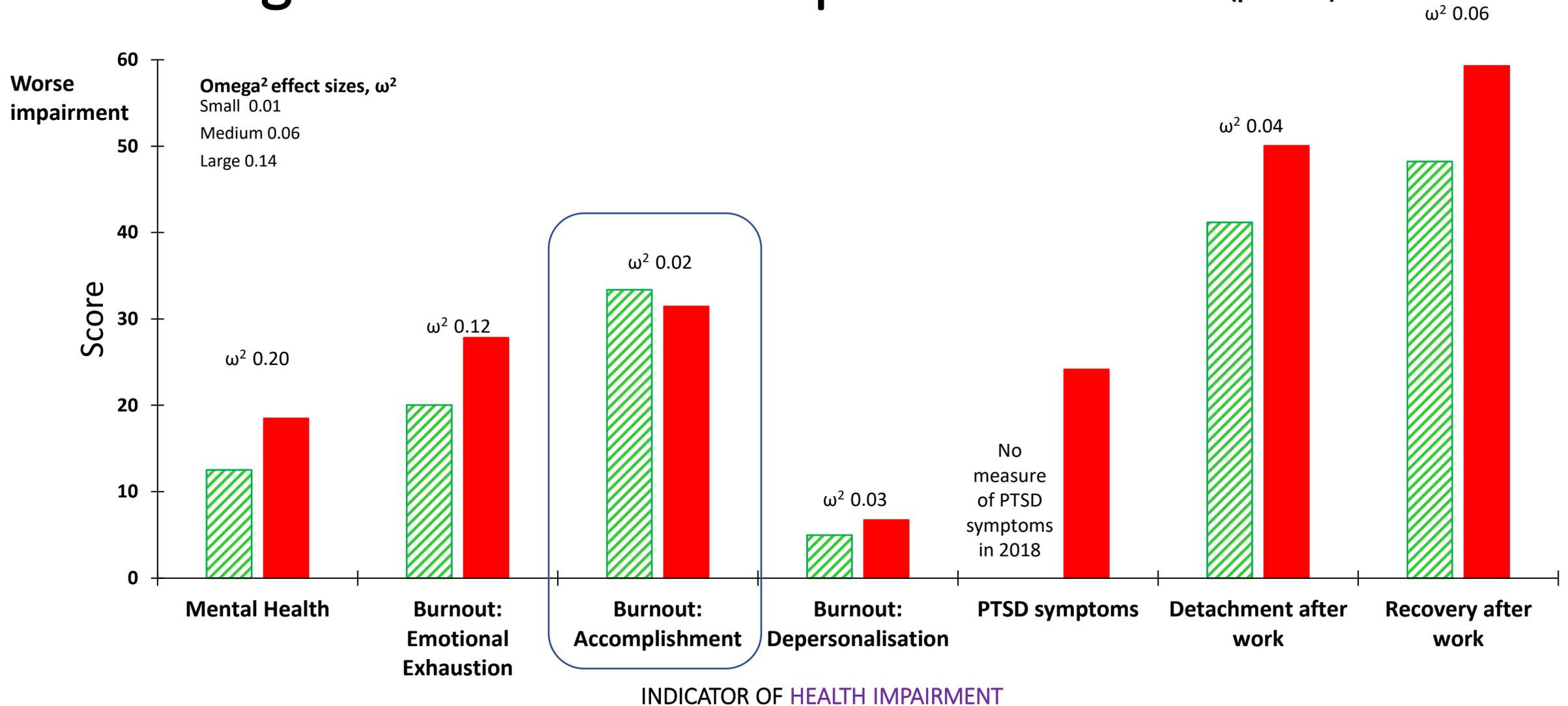
Job demands in 2018 v's during Pandemic.

Omega² effect sizes, ω²
Small 0.01
Medium 0.06
Large 0.14
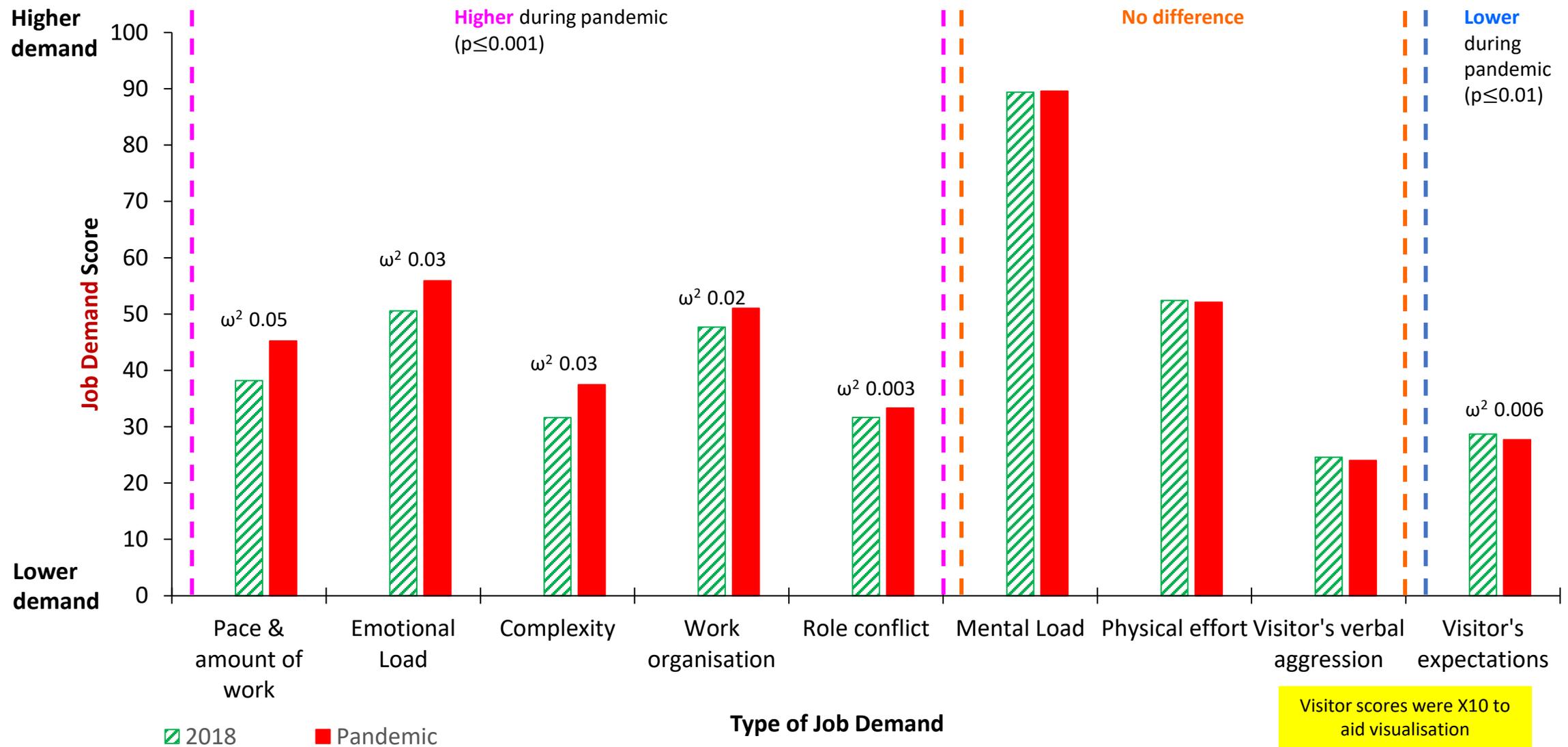
Job Demand (Qual) - Pace & Amount of Work.

"I had four patients and they were really sick, and I just felt like the whole shift I was chasing my tail and fighting fires, just making sure that everybody's infusions didn't run out."

CCN 8, Band 5, 2 years of ICU experience.

Predictors of Health Impairment.

Predictor	Mental Health (GHQ-12)	Emotional Exhaustion (MBI)	PTSD Symptoms (PCL-5)
Demographic variables			
Years of nursing experience			-0.12**
Band			-0.11*
Childcare responsibilities		-0.10**	-0.08*
Job Demands			
Increased **pace and amount of work**		0.15**	.13*
Increased **emotional load**	.26***	0.16***	.24***
Poorer **work organisation**		0.15**	.14**
Increased **relatives' expectations**		0.15**	
Communication with relatives more challenging	.13**		.09*
Job Resources			
Poorer **relationship with colleagues**	.16***		.14**
Reduced **focus on well being by organisation**		0.16***	.15**
Lack of **clarity around goals** and **organisational support to achieve them**			-.10*
Personal Resources			
Depleted **Resilience**	-0.36***	-0.27***	-.24***
R² Total	41.1%	55.9%	44.4%

Data are standardised beta coefficients (* significance value). R^2 indicates the percentage variance in each outcome accounted for.
*$p<0.05$, **$p<0.01$ *** $p<0.001$

Health Impairment [Qual] - Distress Anxiety and Depression.

"I think to summarise, the fact that I have had three months absence from work with anxiety, is probably a representation of how bad that has been. It was just so stressful.... I think at one point I was unable to leave the house, I felt so anxious that I couldn't even leave the house, as I briefly mentioned about the staff support mental health nurse who...literally talking me through going to the hairdressers".

*CCN 7, Band 6, 16 years of ICU experience.*

Work Engagement: Outcomes & Predictors.

Outcome Measures	Predictors	
Work Engagement	Personal Resources – Sources of Work Engagement	Job Resources - Sources of Work Engagement
Work Engagement: UWES-9[8] (i) Vigour (High Energy) (ii) Dedication (Commitment) (iii) Absorption (Immersion)	1. Resilience: CD-RISC-25[9]	1. Task Clarity[6] 2. Autonomy[6] 3. Feedback[6] 4. Learning Opportunities[6] 5. Relationship with Supervisor[6] 6. Relationship with Colleagues[6] 7. Staffing[6] 8. Effectiveness in Achieving Goals[6] 9. Quality[10] 10. Wellbeing[10]

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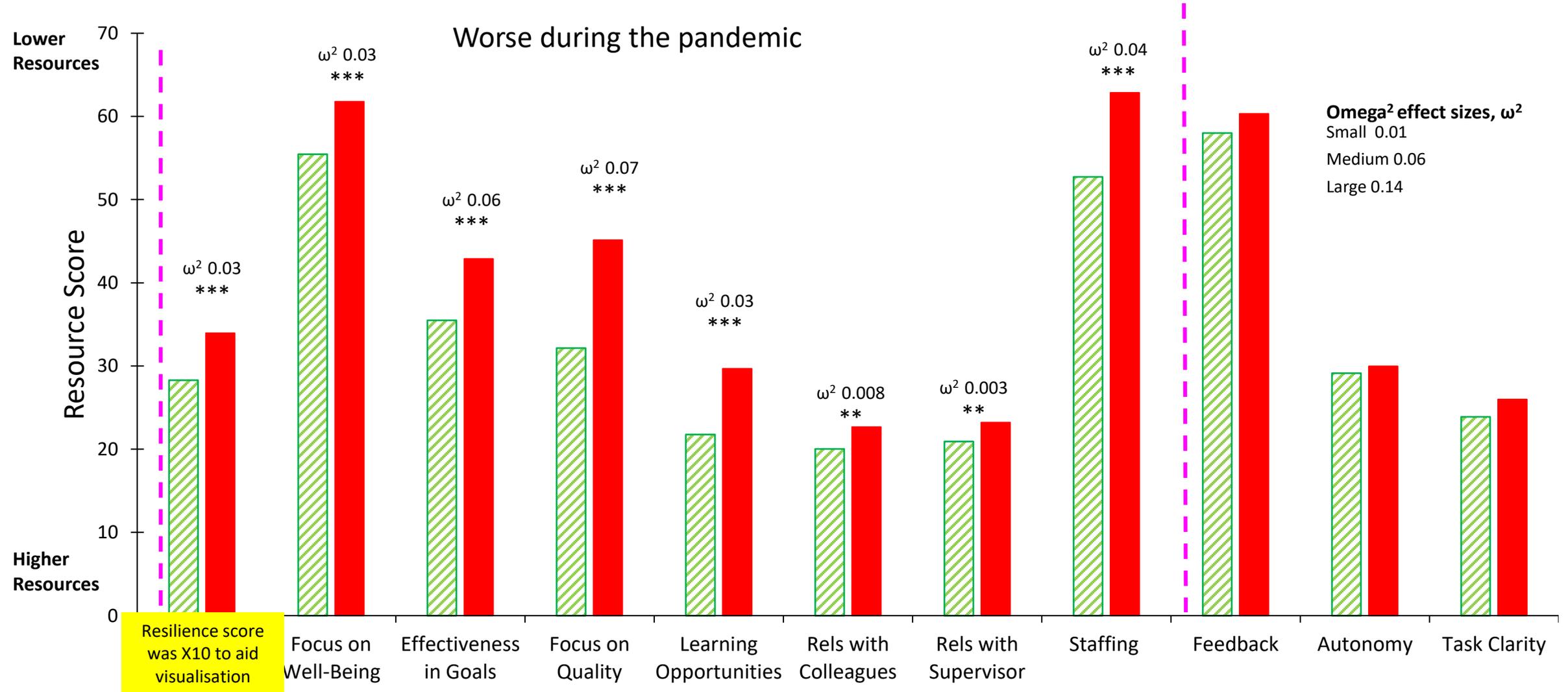# Levels of Work Engagement were lower during the pandemic than in 2018.
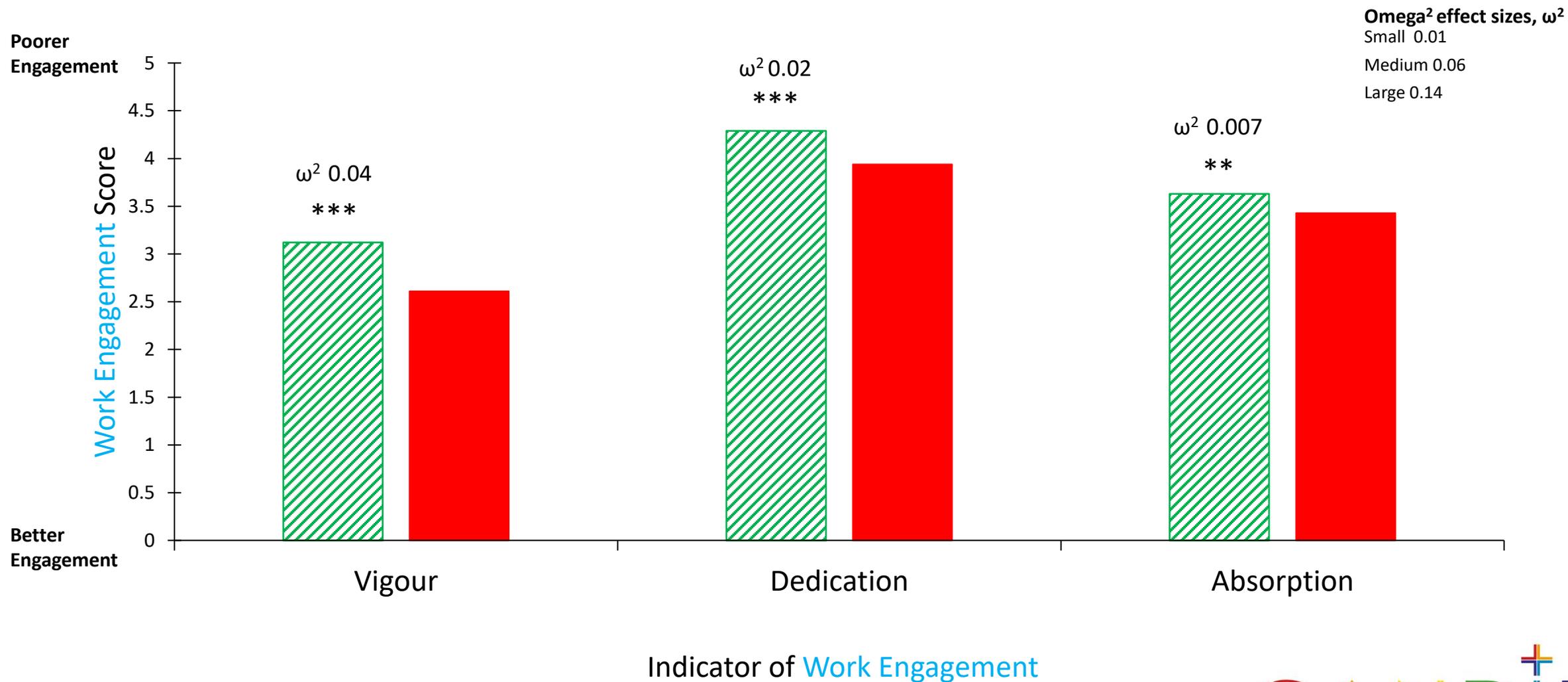
Personal & Job Resources were depleted during the Pandemic than in 2018.

Worse during the pandemic

Lower Resources

Higher Resources

Resource Score

ω² 0.03 ***

ω² 0.03 ***

ω² 0.06 ***

ω² 0.07 ***

ω² 0.03 ***

ω² 0.008 **

ω² 0.003 **

ω² 0.04 ***

Omega² effect sizes, ω²
Small 0.01
Medium 0.06
Large 0.14

Resilience score was X10 to aid visualisation

Focus on Well-Being | Effectiveness in Goals | Focus on Quality | Learning Opportunities | Rels with Colleagues | Rels with Supervisor | Staffing | Feedback | Autonomy | Task Clarity
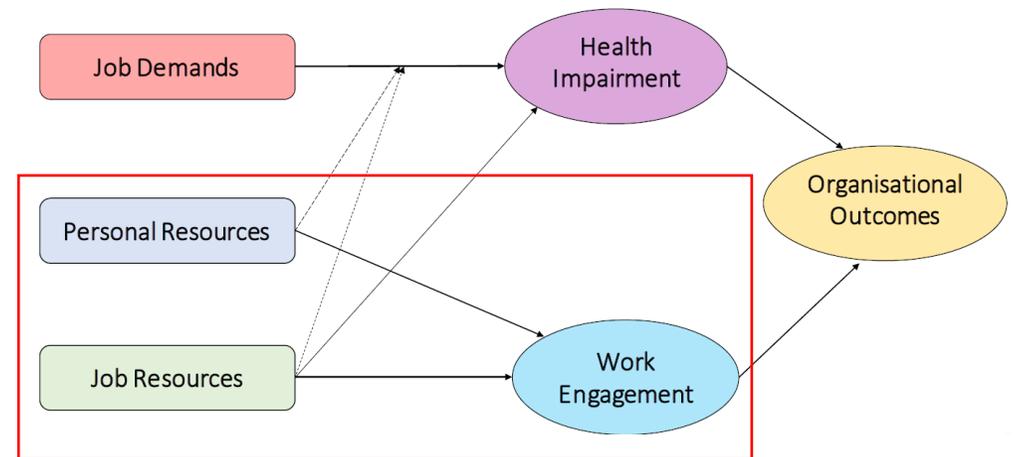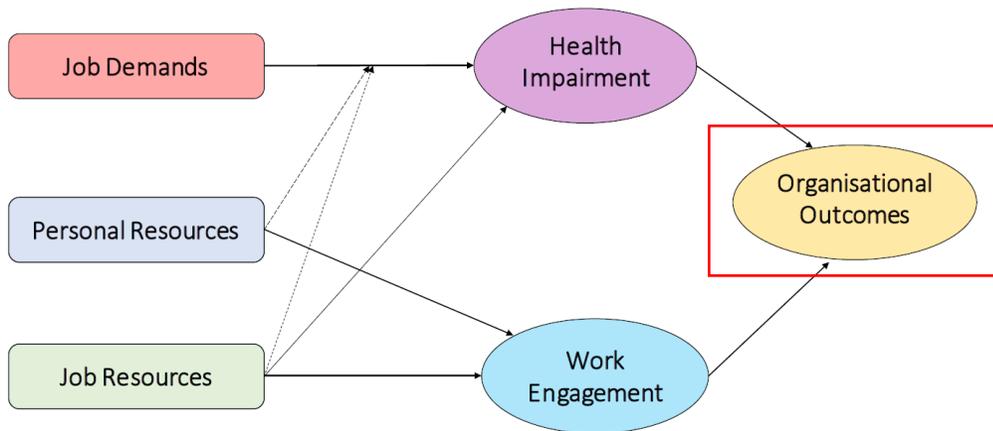
Sources of Work Engagement: Personal and Job Resources

Predictors of Work Engagement.

- Three resources accounted for ~28-35 % of the variability in engagement.

- CCNs were more engaged if:
  The **organisation valued quality.**

  There were **learning opportunities.**

  If **resilience** had **not** been **depleted.**

Levels & Predictors of Organisational Outcomes.
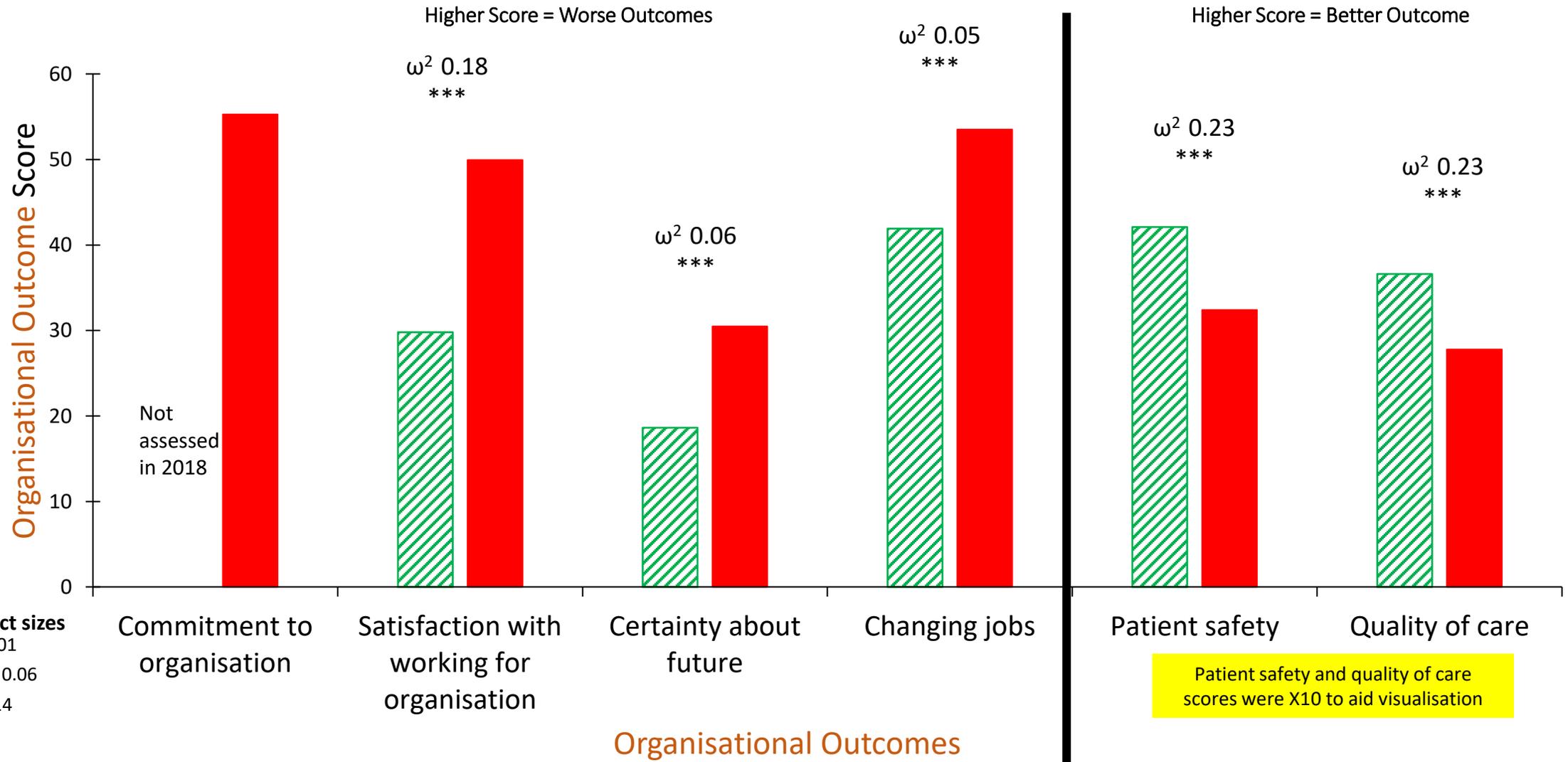

Outcomes
Organisational Outcomes
1. Commitment to the Organisation[6].
2. Satisfaction with Working for the Organisation[6].
3. Certainty About the Future (at Work)[6].
4. Desire to Change Jobs[6].
5. Patient Safety[9].
6. Quality of Care[9].
7. Care Left Undone[10].

Organisational Outcomes were Much Worse During the Pandemic Compared to 2018.

Higher Score = Worse Outcomes

Higher Score = Better Outcome

ω^2 0.18
***

ω^2 0.05
***

ω^2 0.06
***

ω^2 0.23
***

ω^2 0.23
***

Organisational Outcome Score

60

50

40

30

20

10

0

Not assessed in 2018

Omega² effect sizes
- Small 0.01
- Medium 0.06
- Large 0.14

Commitment to organisation

Satisfaction with working for organisation

Certainty about future

Changing jobs

Patient safety

Quality of care

Organisational Outcomes

Patient safety and quality of care scores were X10 to aid visualisation

Organisational Outcome (Qual) - Certainty about future.

"I have actually agreed to cut my hours back. I was actually going to leave. I got an interview for a new job which I never thought I would do because I love my job. But I knew it was affecting me out of work. But I think what I have done so far so good. I cut my hours and work part time over winter and see if that gets me through."

CCN 14, Band 7, 9 years of ICU experience.

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A Higher Proportion of Nursing 'Care was Left Undone'[10] during the Pandemic Compared to 2018.

Nursing Task Items	2018 Data		Pandemic	
	% Undone	Rank	% Undone	Rank
1. Adequate patient surveillance.	12.8	9	44.7	8
2. Adequate documentation of nursing care.	16.7	4	57.1	5
3. Administration medication on time.	14.9	5	44.0	9
4. Comfort/talk with patients.	20.5	2	58.1	4
5. Develop or update nursing care plans/care pathways	22.1	1	65.8	1
6. Educating patients and/or family.	17.1	3	61.5	3
7. Frequent changing of patients' position.	14.7	6	61.8	2
8. Oral Hygiene.	13.3	7	57.0	6
9. Pain management.	8.8	13	16.1	13
10. Planning care.	10.6	10	37.7	11
11. Preparing patients and families for discharge.	13.2	8	37.9	10
12. Skin care.	10.5	11	50.1	7
13. Undertaking treatments/procedures.	9.2	12	29.4	12

Organisational Outcomes [Qual] – ↓Quality of Care.

"....personal care took a massive back seat. Sometimes people would go four to five days without being washed, 'cause we just physically couldn't, you didn't have the time to do it".

CCN 11, Band 5, 15 months of experience.

Predictors of Organisational Outcomes.

Organisational Outcome

	Commitment	Changing Jobs	Certainty about future	Satisfaction	Patient Safety	Quality of Care
Job Demands						
Increased **physical effort**					-.11*	
Poorer **work organisation**	.11*					
Increased **relatives' expectations**					.19**	.17*
Worse **verbal aggression from relatives**						-.21**
Communication with relatives more challenging					-.12**	
Job Resources						
Poorer **feedback**	.09*					
Poorer **relationship with supervisor**		.15**				
Worse **staffing**						-.12*
Fewer **learning opportunities**	.11*	.14**	.16***		-.19***	-.17***
Reduced **focus on well being by organisation**	.31***			.34***		
Less **organisational support to achieve goals**				.09*		
Reduced **organisational focus on quality**	.17***				-.13*	-.17***
Health Impairment						
GHQ-12		.17**	.19**		.21**	.15*
MBI EE		.16*		.22***		
MBI D					-.15**	-14*
PCL-5	-.18**					
Work Engagement						
Dedication		-.27***	-.19*	-.14*		
Absorption	-.17**					
R^2	47.9	36.9	32.8	54.2	26.6	31.1

Data are standardised beta coefficients (* significance value). R^2 indicates the percentage variance in each outcome accounted for. *$p<0.05$, **$p<0.01$ *** $p<0.001$

Implications….

1. Need to continue to monitor CCN well-being.

2. Need to support current staff.

3. Need to avoid negative consequences for future staff[12].

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