Résultats rapport KCE sur la dotation infirmière à l'USI

› Arnaud Bruyneel

› Infirmier au CHU Tivoli et doctorant en santé publique à l'ULB

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KCE REPORT VOLBs

KCE
Federaal Kenniscentrum voor de Gezondheidszorg
Centre Fédéral d'Expertise des Soins de Santé
Belgian Health Care Knowledge Centre

SYNTHÈSE

DOTATION INFIRMIÈRE DANS LES SOINS INTENSIFS BELGES: IMPACT DE DEUX ANS DE PANDÉMIE DE COVID-19

SIZ Nursing

Conflits d'intérêts

- Aucun
- Mais mon CR a reçu un financement du KCE

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I. **Introduction**

II. Méthodologie

III. Résultats/Discussion

IV. Conclusions

I. Introduction

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Study conducted in 2019 including data from ± 5000 nurses of 436 general hospital units (84 hospitals)

KCE
CENTRE FÉDÉRAL D'EXPERTISE DES SOINS DE SANTÉ

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Etude 2021-11 (HSR) Organisation et financement des soins intensifs – Introduction des soins intensifs intermédiaires

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Partie 1
Fin mai 2022

- Tirer des leçons de la pandémie de COVID-19
- → Méthode qualitative via des groupes de discussion
- Evaluer l'environnement de travail et le bien-être
- → Méthode quantitative via un questionnaire

Partie 2
2023

- Revue de littérature sur l'impact de la charge de travail infirmière à l'USI
- Evaluer la charge de travail via le NAS et comparer au DI-RHM

Intensive & Critical Care Nursing 67 (2021) 103110

Contents lists available at ScienceDirect

Intensive & Critical Care Nursing

journal homepage: www.elsevier.com/iccn

Review Article

Outcomes sensitive to critical care nurse staffing levels: A systematic review

Pamela J.L. Rae [a,*], Susie Pearce [a], P. Jane Greaves [b], Chiara Dall'Ora [c], Peter Griffiths [c], Ruth Endacott [a,d,e]

Lower levels of critical care nurse staffing and increased odds of both **patient mortality** (1.24–3.50 times greater) and **nosocomial infection** (3.28–3.60 times greater), increased hospital costs, lower nurse-perceived quality of care and lower family satisfaction.

I. Introduction

More nurses results in better healthcare and costs less

A study in Queensland, Australia, has shown that healthcare outcomes improve when nurses are required to care for fewer patients, and that investing in more nurses pays for itself twice over.

Benefits of decreasing workload by one patient per nurse

Deaths
30-day mortality rates decreased by 7%

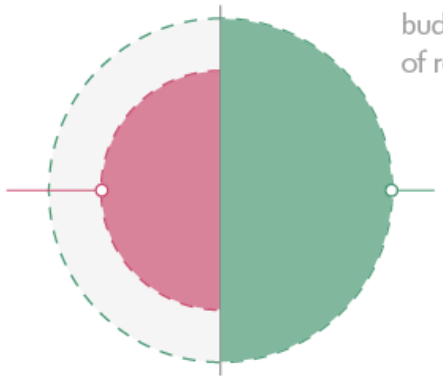
Readmissions
7% fewer patients returned to hospital within a week

Length of stay
Patients left hospital 3% faster

Financial impact of decreasing workload by one patient per nurse

Costs
Hiring 167 nurses to reduce workload by one patient per nurse would cost

AU$33,000,000 over two years



Savings
Costs to the overall health budget avoided because of reduced readmissions and shorter hospital stays would save

AU$69,000,000 over two years

More than twice the cost of new hirings

Read the full paper: McHugh MD, Aiken LH, Sloane DM, Windsor C, Douglas C, Yates P. Effects of nurse-to-patient ratio legislation on nurse staffing and patient mortality, readmissions, and length of stay: a prospective study in a panel of hospitals. *The Lancet* 2021; published online 11 May

THE LANCET — The best science for better lives

I. Introduction

Sermeus *et al. BMC Nursing* 2011, **10**:6
http://www.biomedcentral.com/1472-6955/10/6

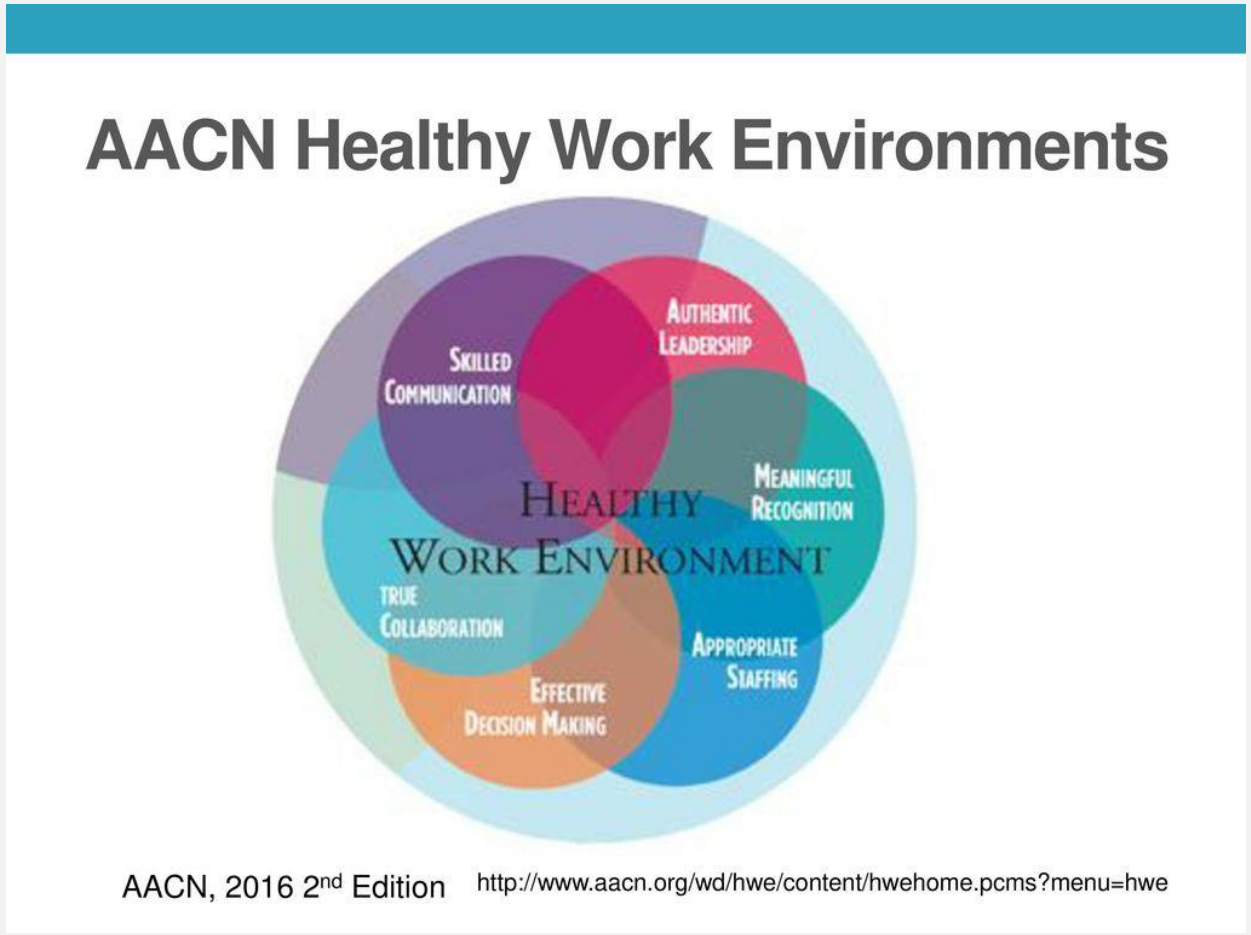
BMC Nursing

STUDY PROTOCOL Open Access

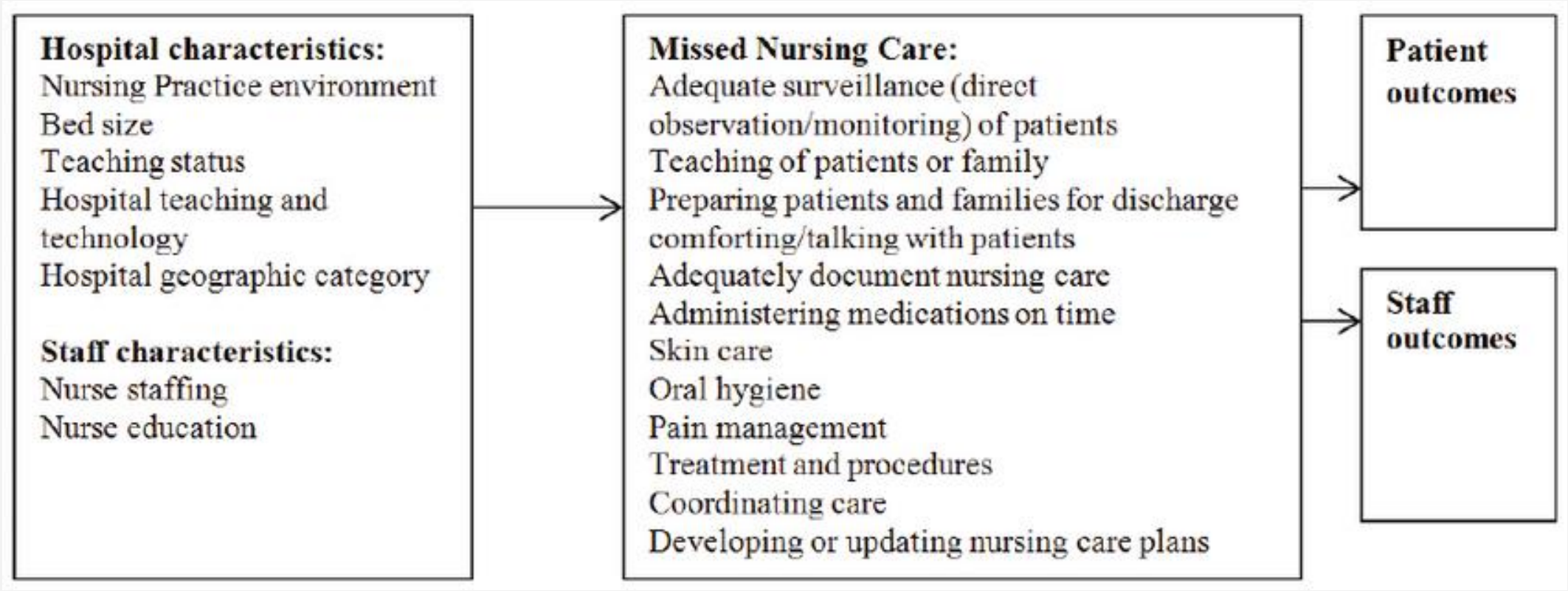
Nurse forecasting in Europe (RN4CAST): Rationale, design and methodology

Walter Sermeus[1], Linda H Aiken[2], Koen Van den Heede[1*], Anne Marie Rafferty[3], Peter Griffiths[4], Maria Teresa Moreno-Casbas[5], Reinhard Busse[6], Rikard Lindqvist[7], Anne P Scott[8], Luk Bruyneel[1], Tomasz Brzostek[9], Juha Kinnunen[10], Maria Schubert[11], Lisette Schoonhoven[12], Dimitrios Zikos[13] and RN4CAST consortium[13]

Introduction



I. Introduction



•Clinical Nursing Studies 2015
•DOI: 10.5430/cns.v3n4p60

I. Introduction

TABLE 4 Association between work environment, patient-to-nurse staffing ratios and missed care. Unadjusted and adjusted models (n = 1632)

	Nurse work environment[a]			Nurse staffing			Skillmix		
Model	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Unadjusted	0.78	0.67–0.91	0.002**	1.04	0.97–1.12	0.279	1.02	0.98–1.07	0.297
Fully adjusted	0.76	0.65–0.90	0.001**	1.07	1.01–1.13	0.026*	1.00	0.96–1.06	0.824

Notes: *$p < 0.05$, **$p < 0{,}01$. The unadjusted and adjusted models account for the clustering of nurses working in the same hospital. Adjustment variables include hospital ownership, nurses' age and patient level of dependency.

Abbreviations: CI, confidence interval; OR, Odds ratio.

[a]The work environment variable was standardised; thus, effect sizes should be interpreted as variations in the outcome variable produced by one standard deviation increase in the work environment score.

I. Introduction

International Journal of Nursing Studies 119 (2021) 103933

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International Journal of Nursing Studies

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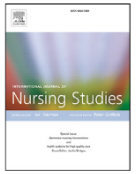
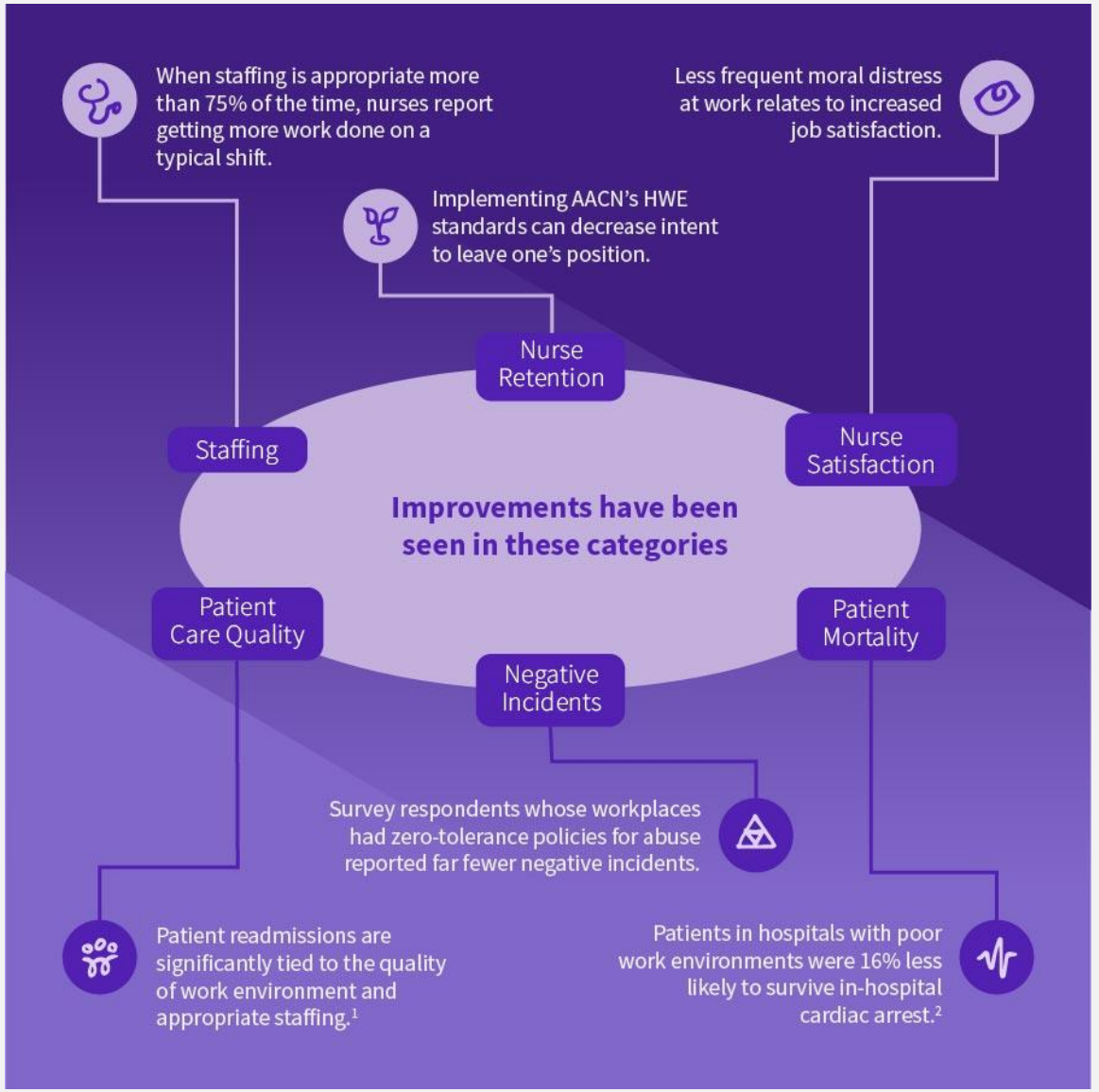


Relationship between nurse burnout, patient and organizational outcomes: Systematic review

Jin Jun[a,*], Melissa M. Ojemeni[b], Richa Kalamani[c], Jonathan Tong[d], Matthew L. Crecelius[e]

[a] Ohio State University, College of Nursing, 1585 Neil Ave Columbus, OH 43210, United States
[b] Partners In Health, United States
[c] University of Michigan, United States
[d] University of Michigan, United States
[e] SSM Health Saint Louis University Hospital, United States

Nurse burnout is associated with worsening **safety and quality of care, decreased patient satisfaction**, and nurses' organizational commitment and productivity.


When staffing is appropriate more than 75% of the time, nurses report getting more work done on a typical shift.
Less frequent moral distress at work relates to increased job satisfaction.
Implementing AACN's HWE standards can decrease intent to leave one's position.
Nurse Retention
Staffing
Nurse Satisfaction
Improvements have been seen in these categories
Patient Care Quality
Patient Mortality
Negative Incidents
Survey respondents whose workplaces had zero-tolerance policies for abuse reported far fewer negative incidents.
Patient readmissions are significantly tied to the quality of work environment and appropriate staffing.[1]
Patients in hospitals with poor work environments were 16% less likely to survive in-hospital cardiac arrest.[2]

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Research objective current study

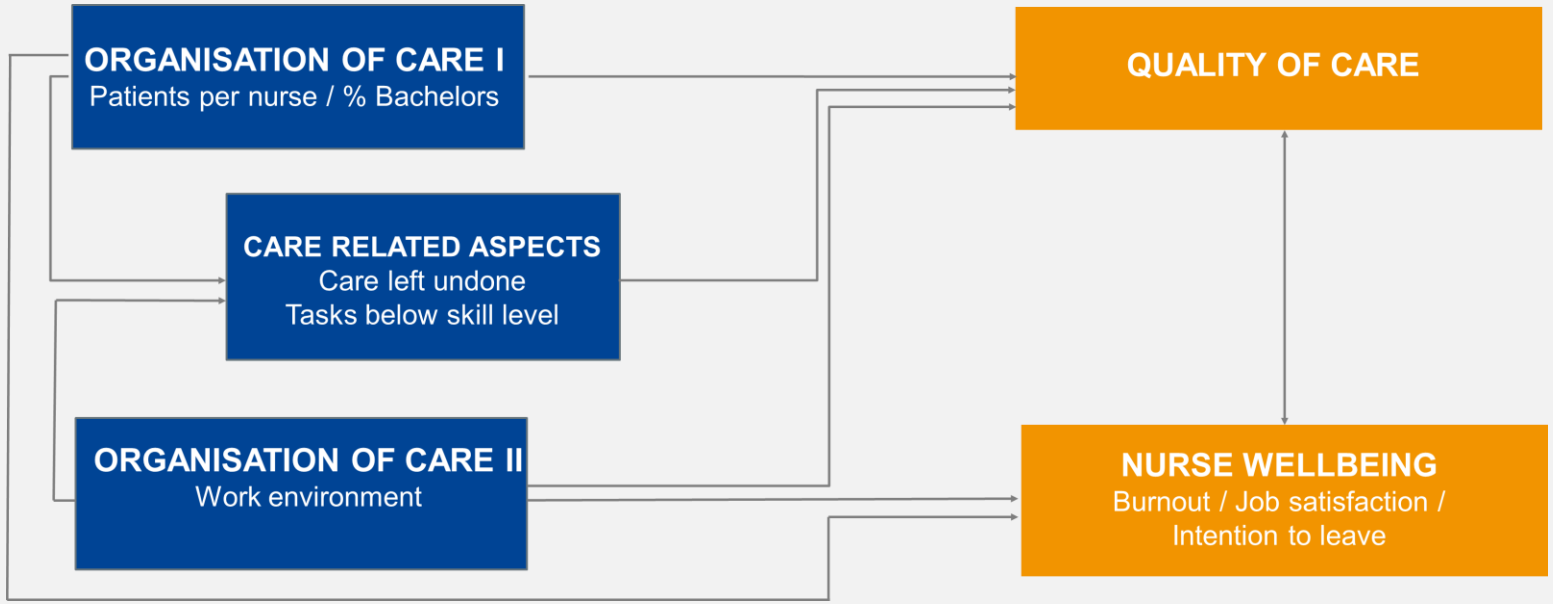
Describe the state of play on ICU's after two years of COVID-19 pandemic focusing on:

Nurse staffing and work environment

Nurse wellbeing

Nurse-perceived quality of care

II. Méthodologie

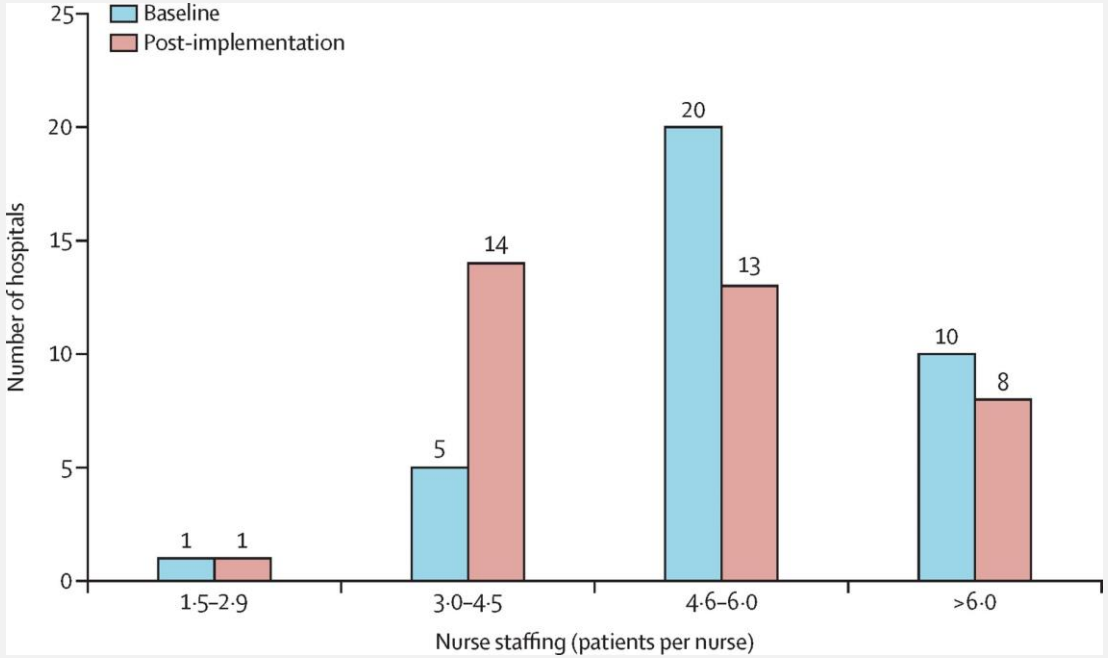


Environnement travail

The Practice Environment Scale of the Nursing Work Index (PES-NWI)

Subscale	Components
Nurse Participation in Hospital Affairs	5, 6, 11, 15, 17, 21, 23, 27, 28
Nursing foundations for quality of care	4, 14, 18, 19, 22, 25, 26, 29, 30, 31
Nurse Manager Ability, Leadership, and Support of Nurses	3, 7, 10, 13, 20
Staffing and resource adequacy	1, 8, 9, 12
Collegial Nurse-Physician Relations	2, 16, 24

Ratio N/P (nurse to patient)



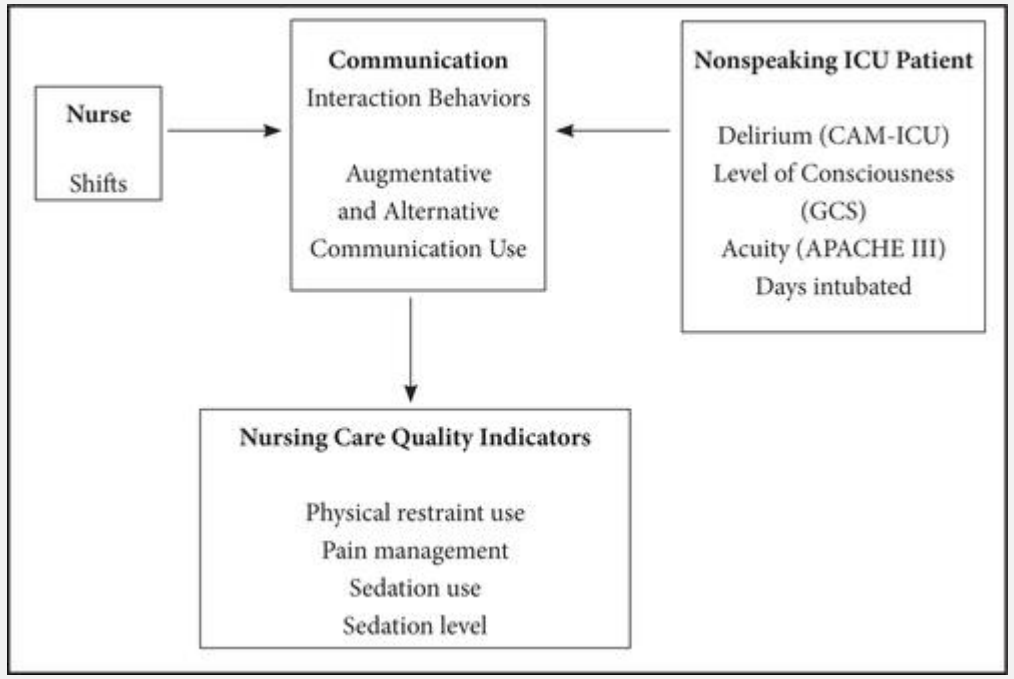
DOI:https://doi.org/10.1016/S0140-6736(21)00768-6

TABLE 2. Characteristics of Shifts Without Any Death or With At Least One Death

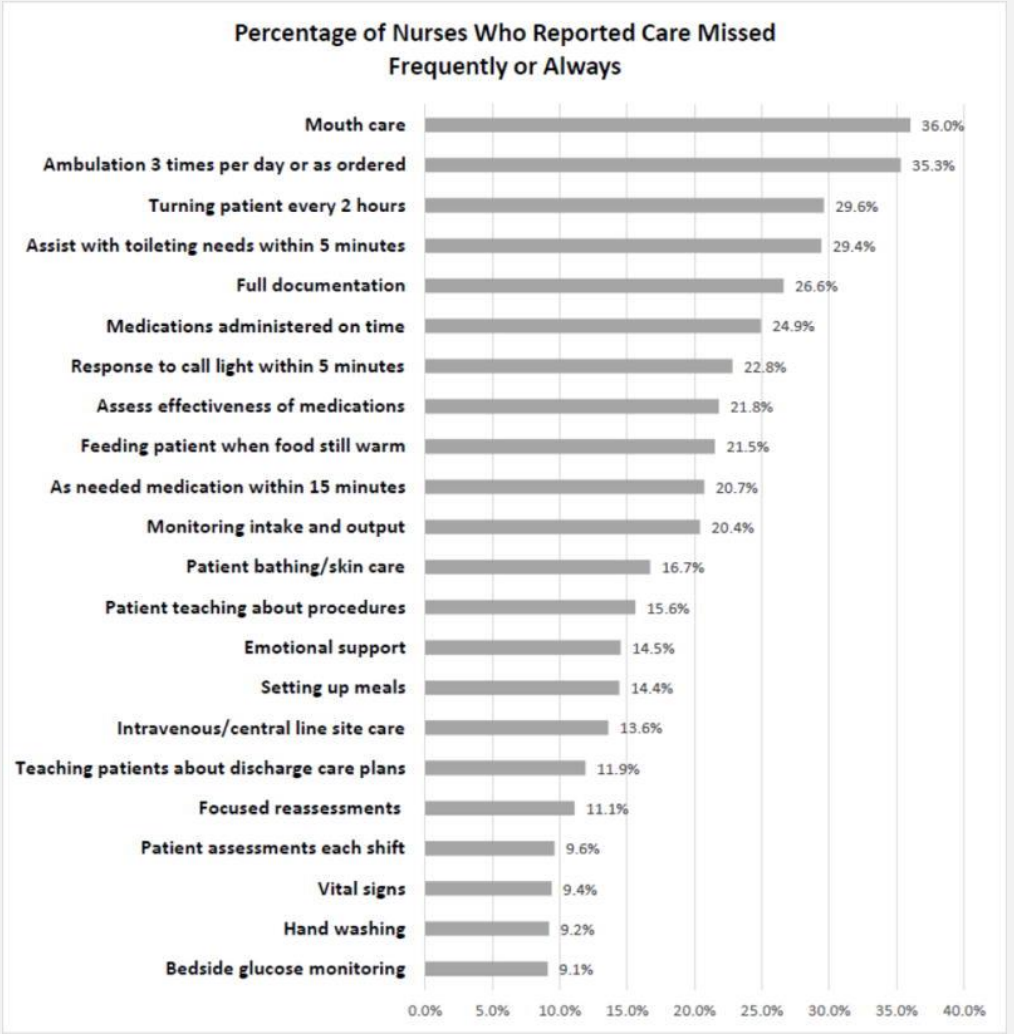
	Shifts Without Death (n = 11,251)	Shifts With ≥ 1 Death (n = 415)	Unadjusted RR (95% CI)	Adjusted RR (95% CI)
Patients-to-nurse ratios (%)				
< 1:1	290 (2.6)	5 (1.2)	1	1
1:1–1.5:1	2,748 (24.4)	91 (21.9)	1.6 (0.8–2.9)	1.9 (0.7–4.6)
1.5:1–2:1	5,143 (45.7)	181 (43.7)	1.7 (0.9–3.1)	2.0 (0.8–5.0)
2:1–2.5:1	2,461 (21.9)	103 (24.8)	1.8 (0.9–3.2)	2.3 (0.9–5.8)
> 2.5:1	609 (5.4)	35 (8.4%)	2.2 (1.2–4.3)	3.5 (1.3–9.1)[a]

DOI: 10.1097/CCM.0000000000001015

Soins manquants



https://doi.org/10.3928/19404921-20140127-02



DOI: 10.1177/0193945917734159

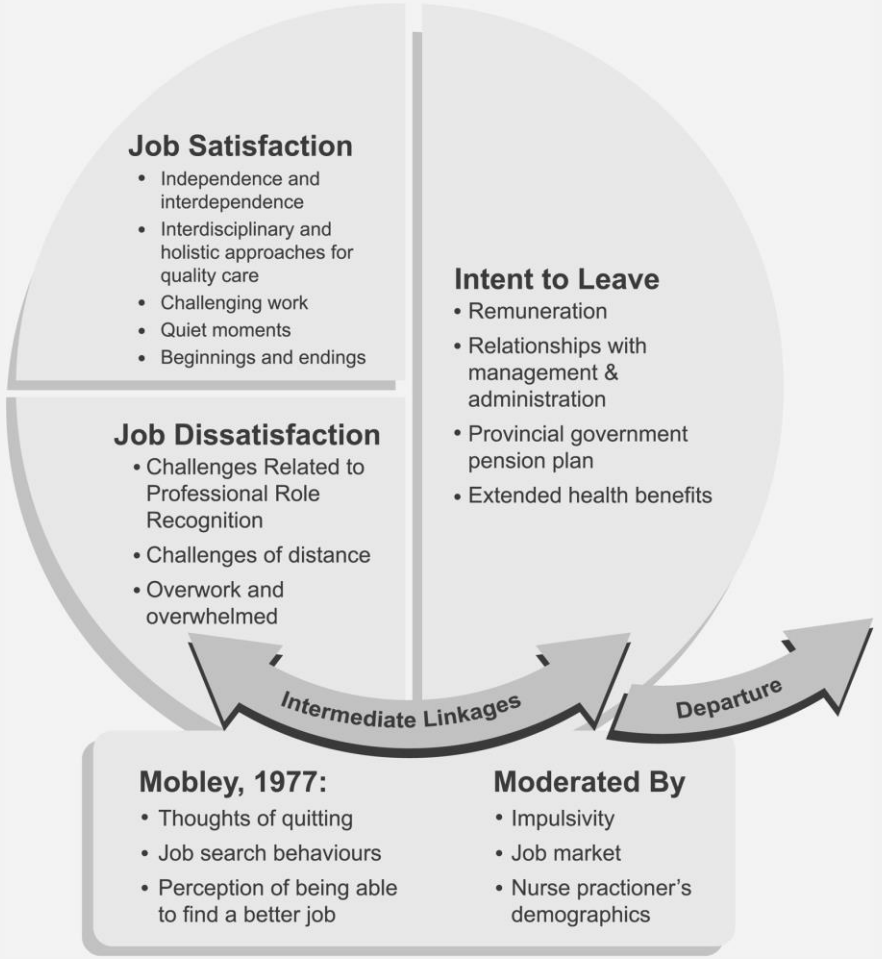
Burnout → Maslach Burnout Inventory

Profile	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Engaged	Low	Low	High
Ineffective			Low
Overextended	High		
Disengaged		High	
Burnout	High	High	

Burnout subscales	Intensity of burnout		
	High	Moderate	Low
Emotional exhaustion	> 27	17–26	0–16
Depersonalization	> 13	7–12	0–6
Personal accomplishment	0–31	32–38	> 39

[A message from the Maslach Burnout Inventory Authors (mindgarden.com)]

A Theory of Nurse Practitioner Job Satisfaction and Intent to Leave



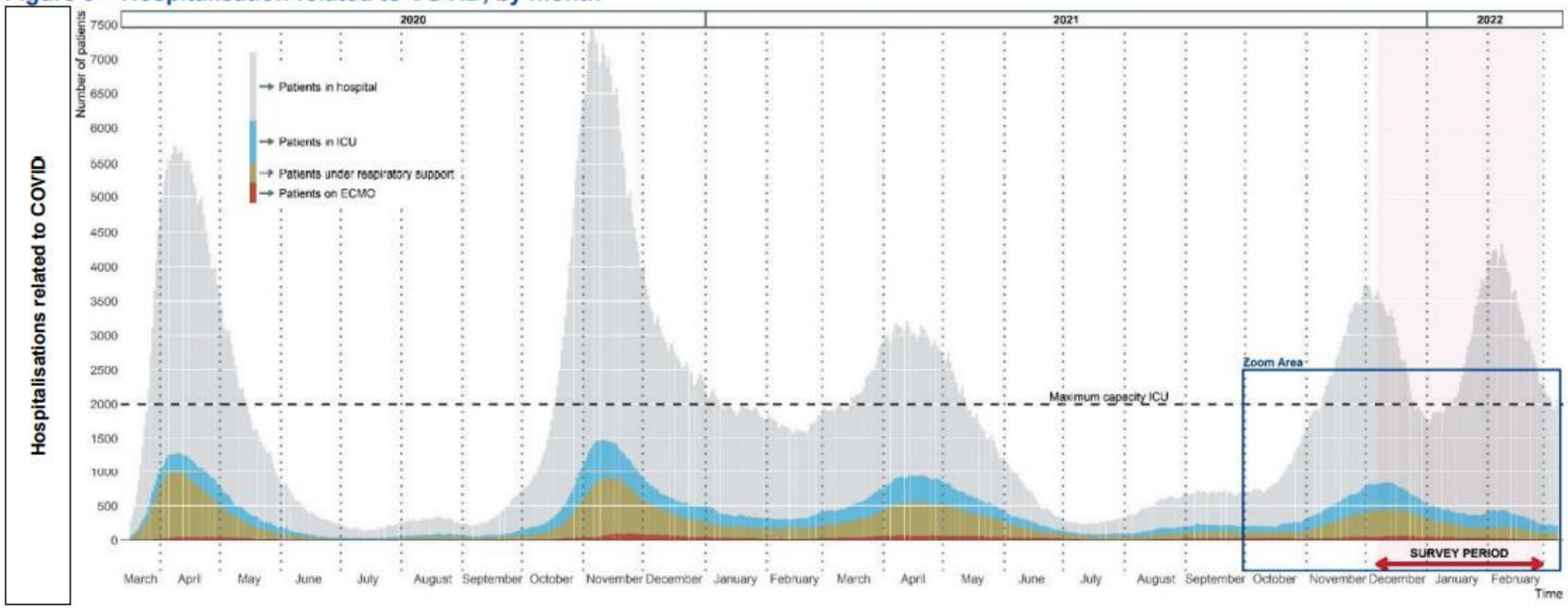
DOI: https://doi.org/10.1016/j.nurpra.2018.10.011

II. Méthodologie

- A national cross-sectional study was conducted between **December 2021 and January 2022** during the 4th and 5th wave of the COVID-19 pandemic in Belgium
- For the recruitment of nurses, all staff nurses providing direct care to patients on the nursing units were included in the survey. It should be noted that we received, per participating **unit**, the number of eligible nurses according to the situation of **September 21st**
- This invitation included an **individualized** but anonymized link (QR-code) towards an online survey (online platform, Check Market).

II. Méthodologie

Figure 3 – Hospitalisation related to COVID, by month



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III. Résultats/Discussion

Figure 5 – Participating hospital sites

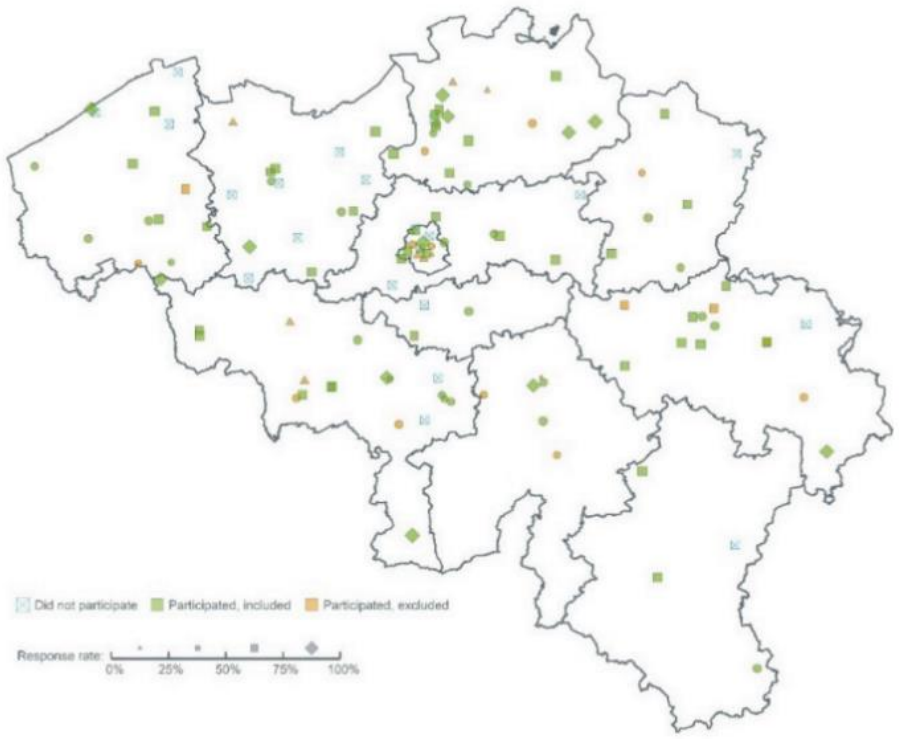
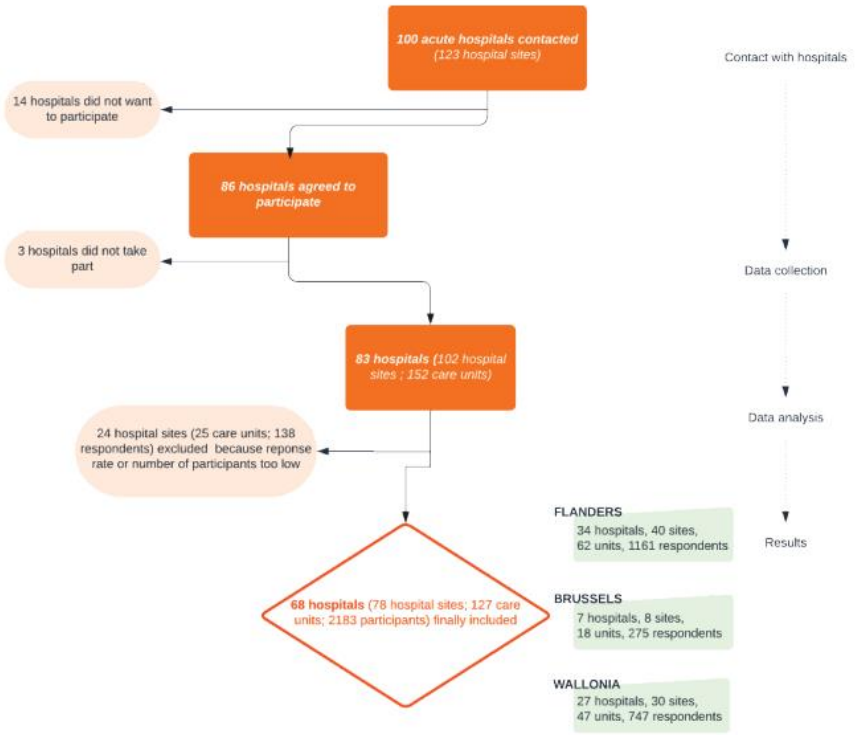


Figure 6 – Hospital, hospital sites, and respondents selection process



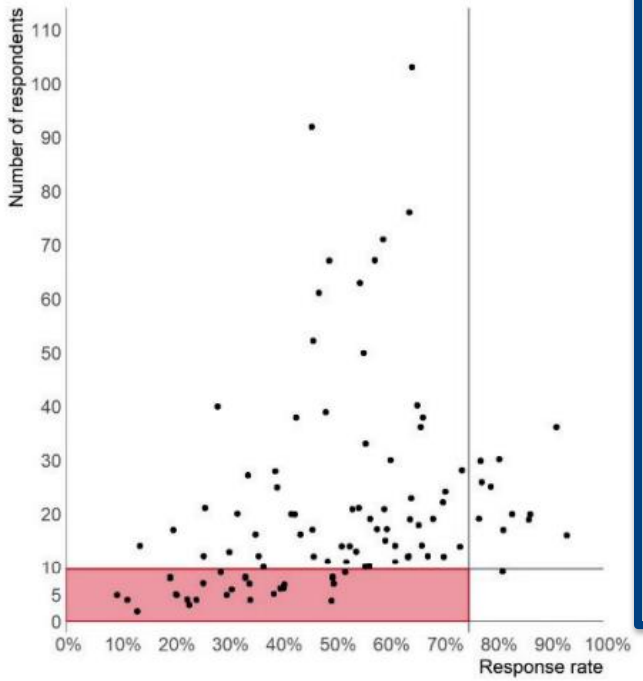
III. Résultats/Discussion

Table 1 – Main characteristics of participating hospitals

	ICU*		Medium		Total	
	Beds	Units	Beds	Units	Beds	Units
University	278	25	6	1	284	26
Non University	1431	125	6	1	1437	126
Total	1709	150	12	2	1721	152

**18 units were both ICU and medium care*

Figure 4 – Number of respondents and response rates per hospital site



Excluded hospitals are those included in the red cell

Table 2 – Description of the participating hospitals and nurses

	Average over participating hospital sites				Distribution score hospital sites				
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max
Number of hospitals	68	34	27	7					
Number of hospital sites	78	40	30	8					
Number of nurses	2 183	1 161	747	275	9	14	20	30	140
Mean age (years)	37.9	38.1	37.4	38.6	30.2	36.4	37.6	40.3	45.8
Mean experience in nursing (years)	15.2	15.5	14.6	15.3	8.2	13.3	15.2	17.2	23.4
Mean experience in ICU (years)	13.7	13.8	13.3	14.1	6.3	11.9	13.6	15.9	21.3
Mean years employed in the hospital (years)	13.6	13.9	13.1	13.8	7.1	11.8	13.6	15.9	21.0
Full-time employed (%)	59.8%	59.9%	61.4%	54.9%	21.4%	52.2%	60.0%	66.7%	94.7%
Female (%)	74.5%	74.2%	74.4%	75.6%	47.6%	69.0%	75.0%	81.6%	100.0%

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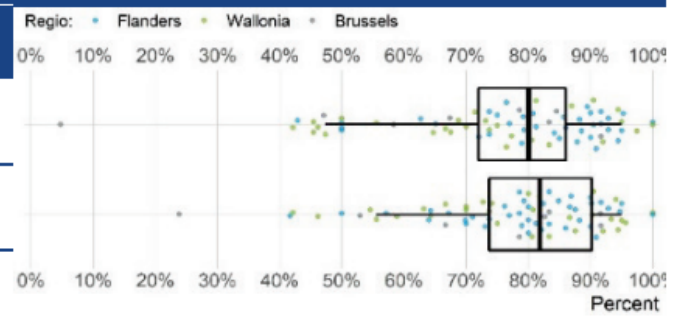
Environnement → Ratio N/P → Soins manquants → Burnout → Intention quitter → Satisfaction travail

III. Résultats/Discussion

Table 5 – Percentage of nurses with further ICU education, at hospital site and regional level

Nurse education (Percent) higher share is better	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
Further education in intensive / emergency care	77.2%	80.1%	75.6%	69.1%	4.8%	72.0%	80.0%	86.0%	100.0%	
Professional title in intensive / emergency care	80.0%	80.0%	80.7%	78.2%	23.8%	73.7%	81.8%	90.2%	100.0%	



Note: *significant differences at p=0.05 (Tukey's pairwise comparison) between regional averages are indicated by superscripts*
^{B} = differs from Brussels, ^{F} = differs from Flanders, ^{W} = differs from Wallonia

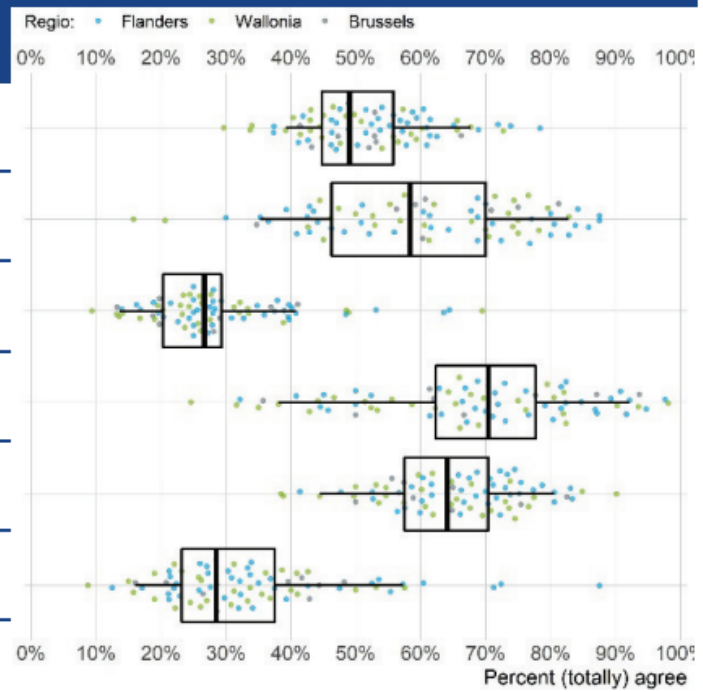
III. Résultats/Discussion

Table 3 – General overview of percentage of nurses (totally) agreeing with presence of positive work environment aspects

Nurse work environment (Percent (totally) agree) the higher the better	Average over participating hospital sites				Distribution score hospital sites				
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max
Overall score	50.7%	52.3%	48.3%	50.7%	29.7%	44.8%	49.0%	55.8%	78.4%
Manager ability, leadership and support	58.5%	58.2%	59.1%	57.8%	15.8%	46.3%	58.3%	70.0%	87.5%
Participation in hospital affairs	26.8%	28.8%	24.3%	24.9%	9.4%	20.3%	26.7%	29.3%	69.4%
Nurse-physician collegial relations	68.3%	70.4%	64.0%	71.6%	24.6%	62.3%	70.4%	77.6%	98.1%
Nursing quality care	63.4%	65.3%	60.8%	62.5%	38.5%	57.5%	64.0%	70.4%	90.1%
Staffing and resource adequacy	31.6%	32.7%	29.8%	32.1%	8.8%	23.2%	28.5%	37.5%	87.5%

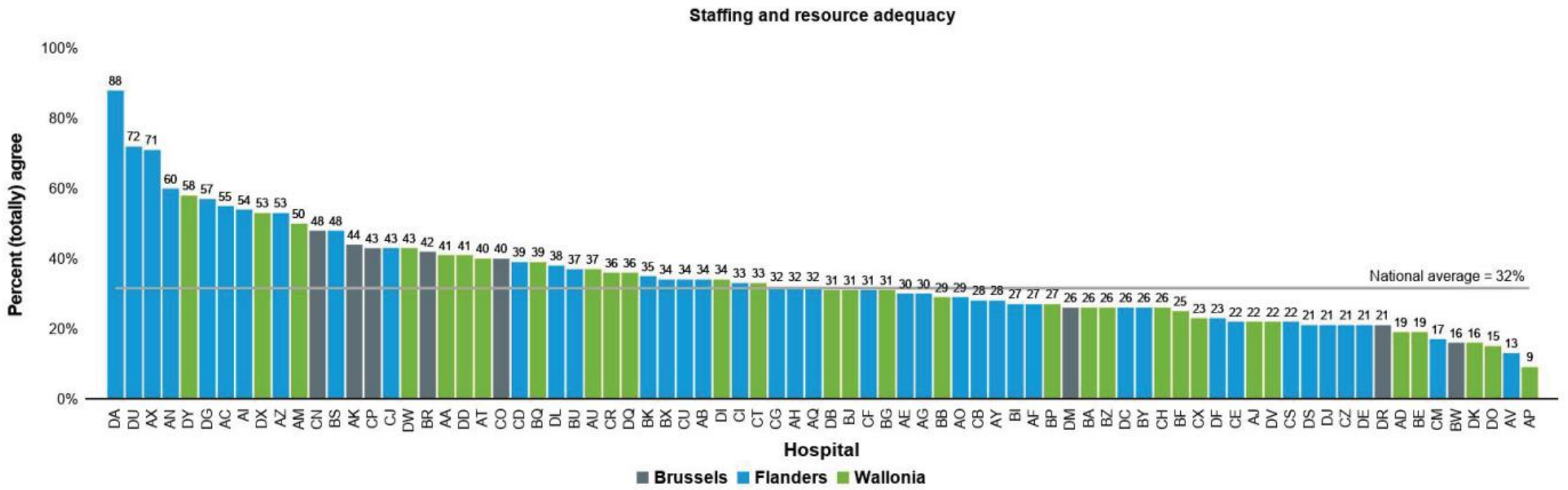
Note: *significant differences at p=0.05 (Tukey's pairwise comparison) between regional averages are indicated by superscripts*
^{B} = differs from Brussels, ^{F} = differs from Flanders, ^{W} = differs from Wallonia

Boxplot (hospital sites)



III. Résultats/Discussion

Figure 13 – Percentage of nurses agreeing or totally agreeing with presence of positive work environment aspects related to staffing and resource adequacy, at hospital site and regional level



III. Résultats/Discussion

KCE 2019

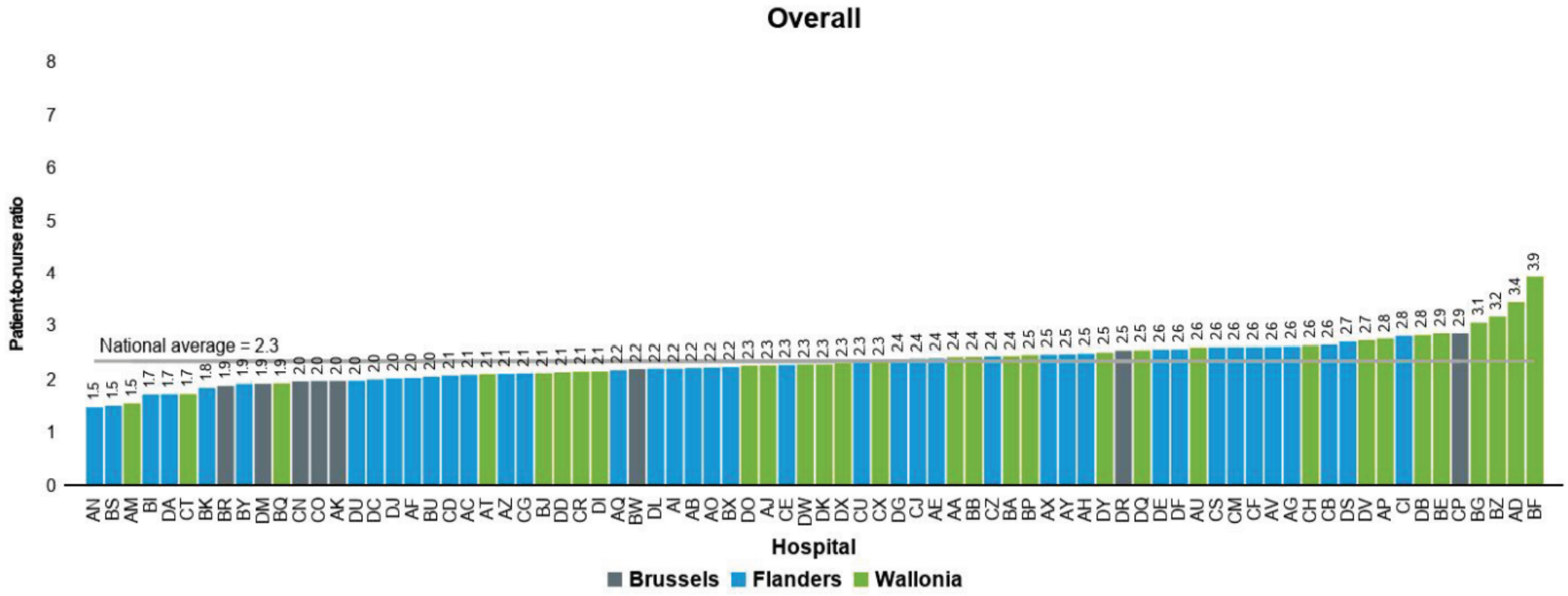
	National average	Regional average		
		Brussels	Flanders	Wallonia
Nurse work environment (percent (totally) agree) – the higher the better				
Manager ability, leadership and support	63%	67%	64%	59%
Participation in hospital affairs	40%	44%	39%	41%
Foundations for quality care	74%	75%	74%	76%
Nurse-physician relations	65%	73%	63%	67%
Staffing and resource adequacy	29%	37%	27%	30%

KCE 2022

Nurse work environment (Percent (totally) agree) the higher the better	Average over participating hospital sites			
	National	Flanders	Wallonia	Brussels
Overall score	50.7%	52.3%	48.3%	50.7%
Manager ability, leadership and support	58.5%	58.2%	59.1%	57.8%
Participation in hospital affairs	26.8%	28.8%	24.3%	24.9%
Nurse-physician collegial relations	68.3%	70.4%	64.0%	71.6%
Nursing quality care	63.4%	65.3%	60.8%	62.5%
Staffing and resource adequacy	31.6%	32.7%	29.8%	32.1%

III. Résultats/Discussion

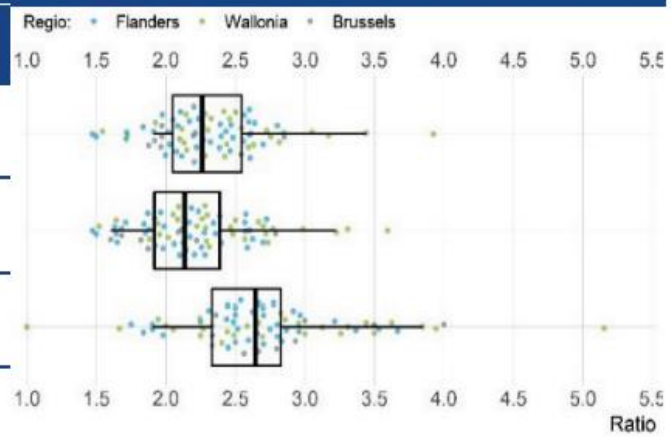
Figure 14 – Overall patient-to-nurse ratio, at hospital site and regional level



III. Résultats/Discussion

Table 4 – Patient-to-nurse ratio by shift, at hospital site and regional level

Patient to nurse ratio lower ratio equals lower workload	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
Overall ratio	2.3	2.2 ^{W}	2.6 ^{F,B}	2.1 ^{W}	1.5	2.0	2.3	2.5	3.9	
Day shifts (morning to evening)	2.2	2.1 ^{W}	2.5 ^{F,B}	1.9 ^{W}	1.5	1.9	2.1	2.4	3.6	
Night shift	2.7	2.5 ^{W}	2.9 ^{F}	2.7	1.0	2.3	2.6	2.8	5.2	



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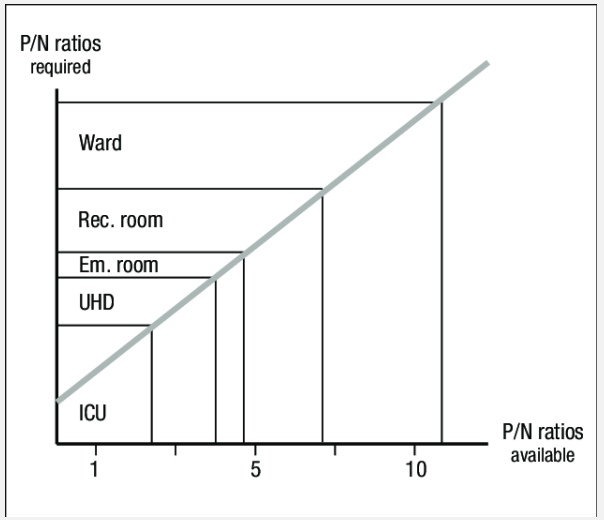
III. Résultats/Discussion



Proposed Federal RN-to-Patient Safe Staffing Ratios

Based on patient acuity, with the most critical receiving 1-to-1 care.

Intensive/Critical Care	1:2
Neonatal Intensive Care	1:2
Operating Room	1:1
Post-anesthesia	1:2
Labor and Delivery	1:2
Antepartum	1:3
Combined L&D and Postpartum	1:3
Well Baby Nursery	1:6
Postpartum Couplets	1:3
Intermediate Care Nursery	1:4
Pediatrics	1:3
Emergency Room	1:3
Trauma Patient in ER	1:1
ICU Patient in ER	1:2
Step Down	1:3
Telemetry	1:3
Medical/Surgical	1:4
Coronary Care	1:2
Acute Respiratory Care	1:2
Burn Unit	1:2
Other Specialty Care Units	1:4
Psychiatric	1:4
Rehabilitation	1:5
Skilled Nursing Facility	1:5

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III. Résultats/Discussion

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Journal of Critical Care
Volume 54, December 2019, Pages 205-211

Measuring the nursing workload in intensive care with the Nursing Activities Score (NAS): A prospective study in 16 hospitals in Belgium

Arnaud Bruyneel RN, CCN, MSc [a, b, c], Jérôme Tack RN, CCN, MSc [a, d], Marie Droguet CCN, RN [a, e], Julie Maes RN, CCN [d], Xavier Wittebole MD [f], D. Reis Miranda MD, PhD [g], Lionel Di Pierdomenico RN, MSc [h]

[a] SIZ Nursing, A Society of Intensive Care Nurses, Belgium
[b] Haute Ecole Provinciale Condorcet, Mons, Belgium
[c] Intensive Care Unit, CHU Tivoli, Belgium
[d] Intensive Care Unit, Hospital Erasme – University Libre de Bruxelles, Belgium
[e] Pediatric Intensive Care Unit, Queen Fabiola Children's Hospital, Belgium
[f] Intensive Care Unit, Cliniques Saint-Luc, University Catholique de Louvain, Brussels, Belgium
[g] University Medical Center of Groningen, the Netherlands
[h] Research Center of Health Economics, Health Facility Administration and Nursing Science – Université Libre de Bruxelles, Belgium

Available online 29 August 2019.

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https://doi.org/10.1016/j.jcrc.2019.08.032

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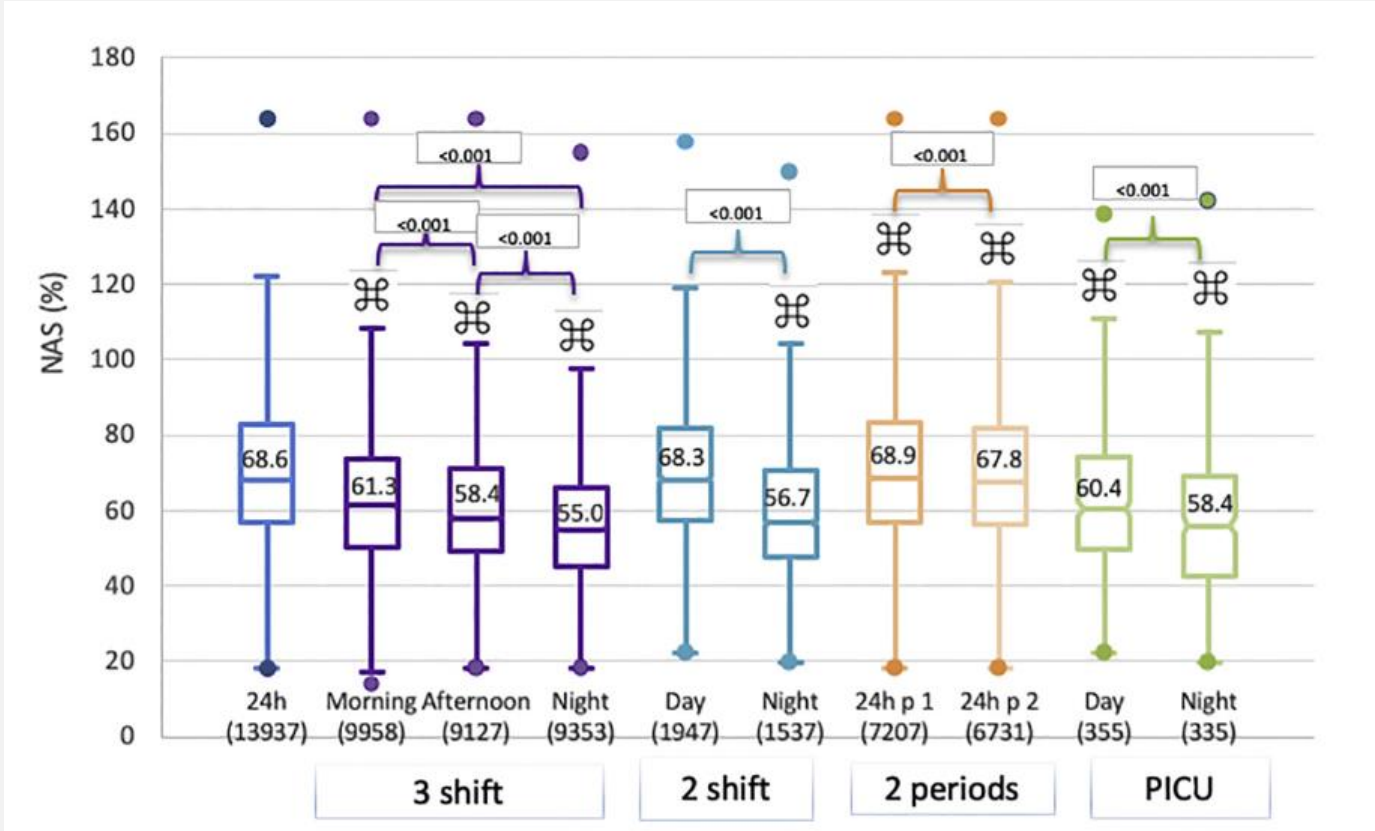

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Environnement → Ratio N/P → Soins manquants → Burnout → Intention quitter → Satisfaction travail

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Intensive & Critical Care Nursing

journal homepage: www.elsevier.com/iccn

Research Article

Impact of COVID-19 on nursing time in intensive care units in Belgium

Arnaud Bruyneel [a,b,c], Maria-Cécillia Gallani [d], Jérôme Tack [b,e], Alain d'Hondt [f], Sebastien Canipel [b,f], Stéphane Franck [a], Pascal Reper [g], Magali Pirson [c]

[a] Soins intensifs – Centre Hospitalier Universitaire Tivoli, Belgium
[b] SIZ Nursing, A Society of Intensive Care Nurses, Belgium
[c] Health Economics, Hospital Management and Nursing Research Dept, School of Public Health, Université Libre de Bruxelles, Belgium
[d] Université de Laval, Canada
[e] Soins intensifs – Cliniques Universitaire de Bruxelles – Hôpital Erasme, Belgium
[f] Soins intensifs – Centre Hospitalier Universitaire Ambroise Paré, Belgium
[g] Soins intensifs – Centre Hospitalier de la Haute Senne, le Tilleriau, Belgium

OR = 4.84 (3.63–6.42) <0.0001

Table 2
NAS description and score according to admission source.

Characteristic	COVID-19 patients (NAS = 905)	Non-COVID-19 patients (NAS = 5,453)	Test values	p value*
NAS per 24 h, mean ±	92.0 ± 16.1	71.7 ± 18.2	t = −31.48	<0.0001
NAS per 24 h admission day, mdn (IQR)	96.4 (29.2)	71.1 (21.5)	U = −29.52	<0.0001
NAS per 24 h discharge ICU, mdn (IQR)	91.8 (16.7)	68.3 (22.6)	U = −30.52	<0.0001
NAS < 50%, n (%)	1 (0.1)	611 (11)	χ^2 = 109.82	<0.0001
NAS : 51%–75%, n (%)	148 (16)	2,680 (49)	χ^2 = 338.01	<0.0001
NAS : 76%–100%, n (%)	482 (53)	1,793 (33)	χ^2 = 140.28	<0.0001
NAS > 100%, n (%)	274 (30)	369 (7)	χ^2 = 471.90	<0.0001

Table 7 – Percentage of nurses who reported care left undone in document and clinical care during the last shift, at hospital site and regional

Care left undone (Percentage)	Average over participating hospital sites				Distribution score hospital sites				
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max
All care performed[e] (the higher – the better)	26.5%	30.7% [B,W]	22.8% [F]	18.9% [F]	4.8%	17.4%	24.2%	32.8%	78.9%
Dimension clinical care undone (the lower – the better)	20.0%	21.5%	17.4%	20.9%	3.3%	15.4%	20.0%	24.5%	45.6%
Adequate patient surveillance	24.5%	25.2%	23.3%	24.7%	0.0%	19.2%	23.3%	30.3%	65.8%
Skin care	17.8%	21.2% [W]	12.4% [F]	18.2%	0.0%	9.1%	17.4%	23.8%	58.3%
Oral hygiene	28.6%	27.3%	29.9%	30.5%	0.0%	21.1%	28.4%	36.1%	64.7%
Pain management	12.6%	15.7% [W]	8.4% [F]	10.9%	0.0%	7.6%	11.9%	18.4%	50.0%
Treatments and procedures	10.2%	14.0% [W]	4.8% [F]	9.1%	0.0%	5.1%	10.0%	15.7%	50.0%
Administer medications on time	29.1%	29.8%	25.6%	35.6%	0.0%	21.1%	30.6%	35.2%	60.5%
Frequent changing of patient position	35.1%	31.7%	38.4%	40.4%	0.0%	30.0%	35.0%	41.7%	75.0%
Hand hygiene	12.6%	15.2% [W]	9.0% [F]	11.3%	0.0%	7.8%	10.5%	17.5%	50.0%
Aspiration of airways	9.7%	13.1% [B,W]	5.2% [F]	7.3% [F]	0.0%	4.9%	8.3%	14.3%	40.0%

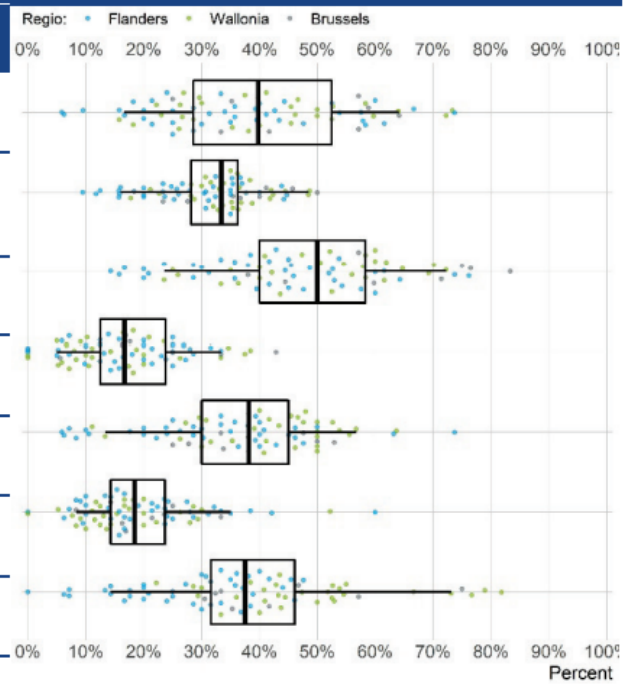
Boxplot (hospital sites)

Note: *significant differences at p=0.05 (Tukey's pairwise comparison) between regional averages are indicated by superscripts*
[B] = differs from Brussels, [F] = differs from Flanders, [W] = differs from Wallonia

III. Résultats/Discussion

Table 8 – Percentage of nurses who reported care left undone in planning and communication during the last shift, at hospital site and regional

Care left undone (Percentage)	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
Document care undone	40.4%	37.7%	41.9%	48.0%	5.9%	28.6%	39.8%	52.5%	73.7%	
Dimension planning and communication undone (the lower the better)	32.7%	30.3% ^{W}	36.0% ^{F}	33.7%	9.5%	28.1%	33.4%	36.2%	50.0%	
Emotional support patients and family	49.2%	46.0%	51.8%	55.6%	14.3%	40.0%	50.0%	58.3%	83.3%	
Prepare for discharge from ICU	17.7%	18.1%	17.0%	18.2%	0.0%	12.5%	16.7%	23.8%	42.9%	
Develop or update care plans or pathways	37.2%	33.8% ^{W}	42.7% ^{F}	37.1%	5.9%	30.0%	38.1%	45.0%	73.7%	
Planning care	20.4%	21.6%	19.7%	17.1%	0.0%	14.3%	18.4%	23.7%	60.0%	
Multidisciplinary consultation meetings	38.8%	32.0% ^{W}	48.6% ^{F}	40.7%	0.0%	31.6%	37.5%	46.1%	81.8%	

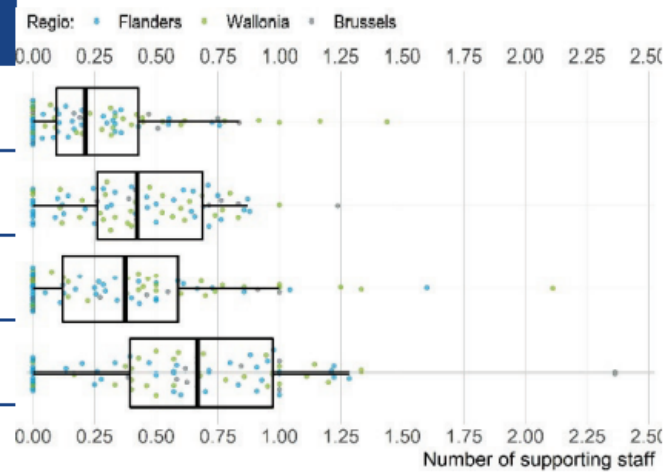


Note: *significant differences at p=0.05 (Tukey's pairwise comparison) between regional averages are indicated by superscripts ^{B} = differs from Brussels, ^{F} = differs from Flanders, ^{W} = differs from Wallonia*

III. Résultats/Discussion

Table 6 – Number of supporting staff, at hospital site and regional level

Number of supporting staff	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
Healthcare assistants (all shifts and days)	0.30	0.20 ^{B,W}	0.35 ^{F}	0.56 ^{F}	0.00	0.10	0.21	0.43	1.44	
Logistic support assistants (all shifts and days)	0.46	0.46	0.46	0.48	0.00	0.26	0.42	0.69	1.24	
Healthcare assistants (day shifts and weekdays)	0.40	0.29 ^{B}	0.49	0.62 ^{F}	0.00	0.12	0.38	0.59	2.11	
Logistic support assistants (day shifts and weekdays)	0.69	0.67	0.71	0.71	0.00	0.39	0.67	0.97	2.36	



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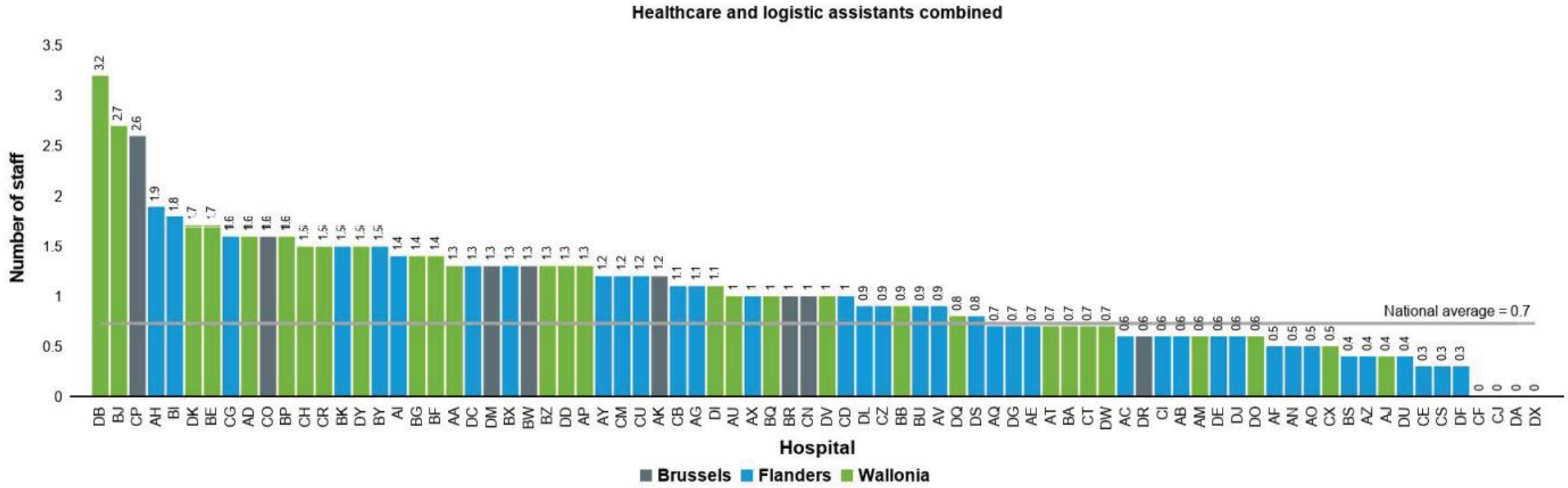
^{B} = differs from Brussels, ^{F} = differs from Flanders, ^{W} = differs from Wallonia

III. Résultats/Discussion

Figure 21 – Number of healthcare assistants and other supporting staff during last shift

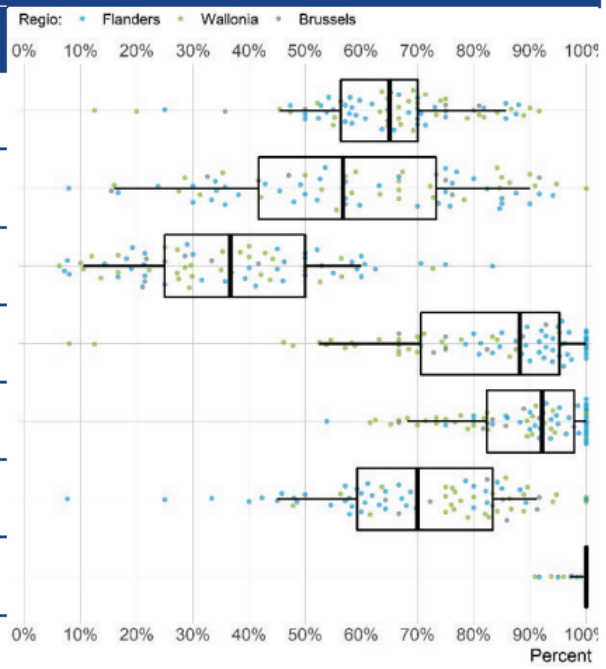


III. Résultats/Discussion

Table 9 – Percentage of nurses who reported "Sometimes / often" for tasks below skill level during the last shift, at hospital site and regional level

Non-nursing tasks sometimes/often performed (Percent) the lower the better	Average over participating hospital sites				Distribution score hospital sites				
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max
Delivering and retrieving food trays	63.1%	61.9%	65.6%	61.5%	12.5%	56.3%	65.0%	70.0%	91.7%
Transport of blood samples	56.3%	56.1%	62.8% ^{B}	39.3% ^{W}	7.9%	41.7%	56.7%	73.3%	100.0%
Transporting of patients	36.5%	40.5%	32.1%	31.6%	6.3%	25.0%	36.6%	50.0%	83.3%
Clean patient rooms and equipment	80.9%	92.8% ^{B,W}	63.6% ^{F,B}	78.2% ^{F,W}	8.0%	70.6%	88.2%	95.2%	100.0%
Ordering and/or storing medication	89.4%	94.5% ^{B,W}	82.9% ^{F}	85.8% ^{F}	53.8%	82.4%	92.1%	97.9%	100.0%
Obtain supplies or equipment	69.9%	60.2% ^{B,W}	80.1% ^{F}	83.3% ^{F}	7.7%	59.2%	70.0%	83.3%	100.0%
Clerical duties	99.6%	99.7%	99.5%	99.6%	90.9%	100.0%	100.0%	100.0%	100.0%

Boxplot (hospital sites)



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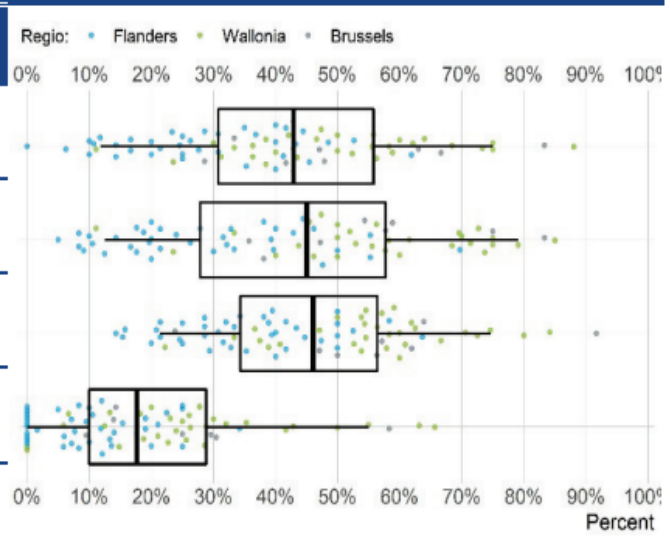
III. Résultats/Discussion

Table 10 – Percentage of nurses at risk of burnout, at hospital site and regional level

Risk of burnout (Percent) the lower the better	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
At high risk of emotional exhaustion	43.1%	33.1% ^{B,W}	55.3% ^{F}	52.4% ^{F}	0.0%	30.8%	42.9%	55.8%	88.1%	
At high risk of depersonalisation	43.7%	31.5% ^{B,W}	58.5% ^{F}	54.5% ^{F}	5.0%	27.9%	45.0%	57.7%	85.0%	
At high risk of reduced personal accomplishment	46.1%	36.0% ^{B,W}	57.7% ^{F}	57.5% ^{F}	14.3%	34.3%	46.0%	56.4%	91.7%	
At risk of burnout (high risk in 3 subscales)	20.2%	11.6% ^{B,W}	31.6% ^{F}	25.8% ^{F}	0.0%	10.0%	17.6%	28.8%	65.7%	



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III. Résultats/Discussion

Contents lists available at ScienceDirect

Intensive & Critical Care Nursing

journal homepage: www.elsevier.com/iccn

Research Article

Prevalence of burnout risk and factors associated with burnout risk among ICU nurses during the COVID-19 outbreak in French speaking Belgium

Arnaud Bruyneel [a,b,*], Pierre Smith [c], Jérôme Tack [a,d], Magali Pirson [a]

[a] Health Economics, Hospital Management and Nursing Research Dept, School of Public Health, Université Libre de Bruxelles, Belgium
[b] SIZ Nursing, A Society of Intensive Care Nurses, Belgium
[c] Institute of Health and Society (IRSS), Université Catholique de Louvain, Brussels, Belgium
[d] Department of Intensive Care, Erasme Hospital, Université Libre de Bruxelles, Belgium

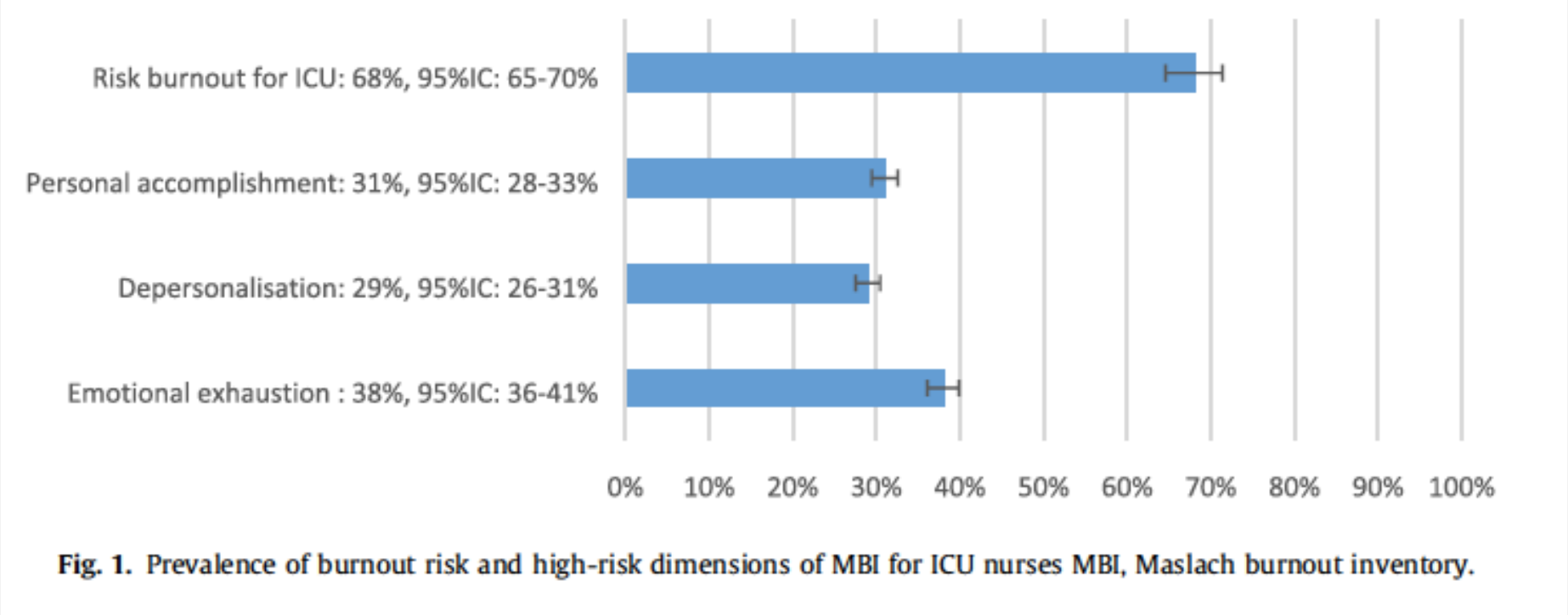

Fig. 1. Prevalence of burnout risk and high-risk dimensions of MBI for ICU nurses MBI, Maslach burnout inventory.

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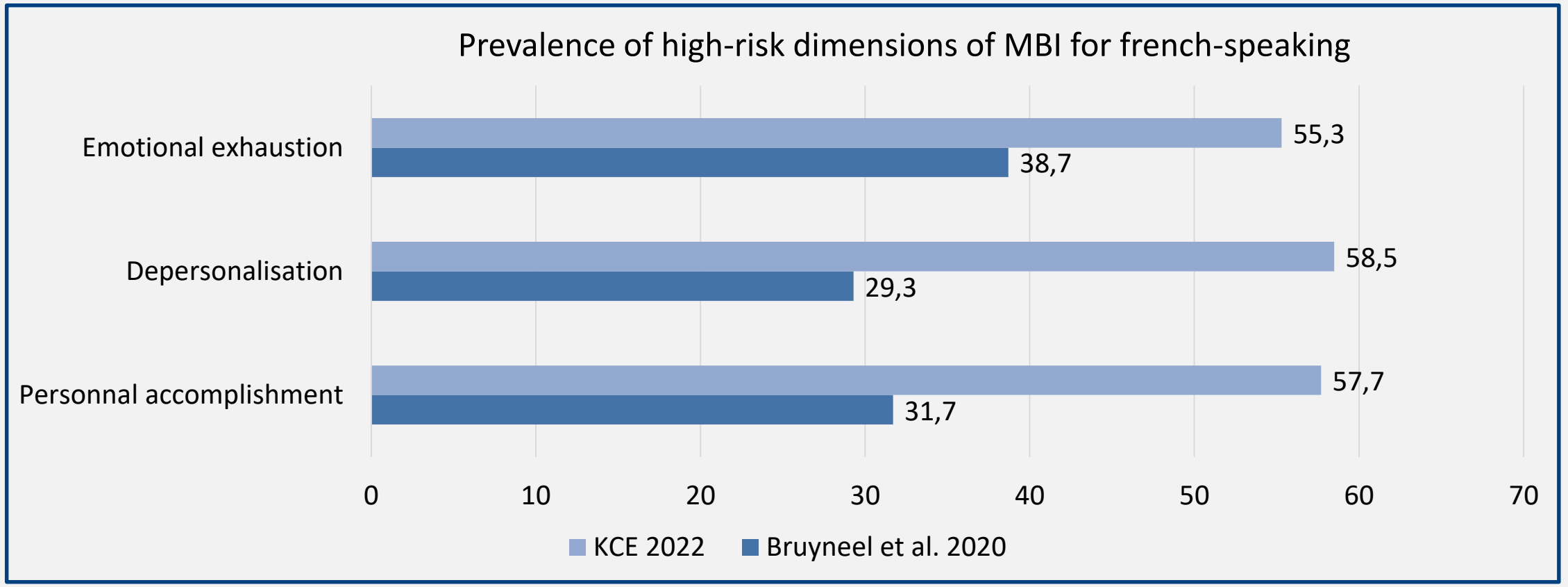

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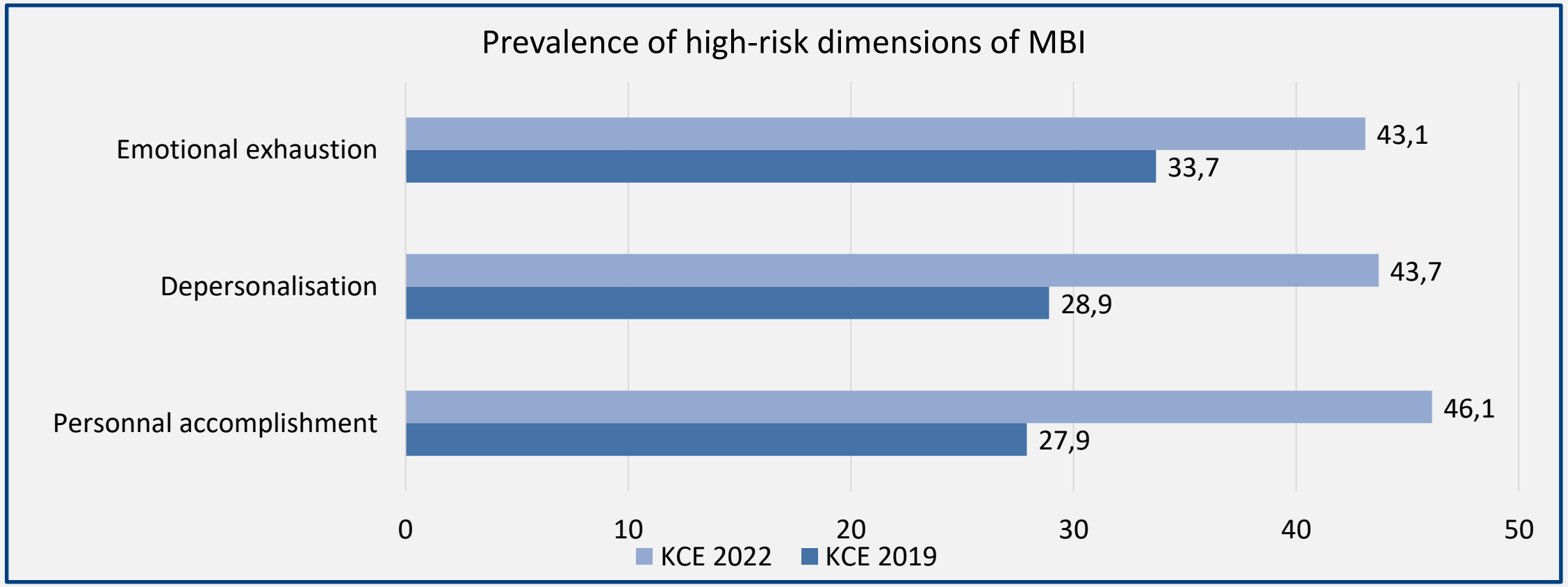


III. Résultats/Discussion

Figure 36 – Intention to leave the job: different destinations (non-nursing job – nursing job outside the hospital setting – Nursing job in ICU – Nursing job outside ICU)

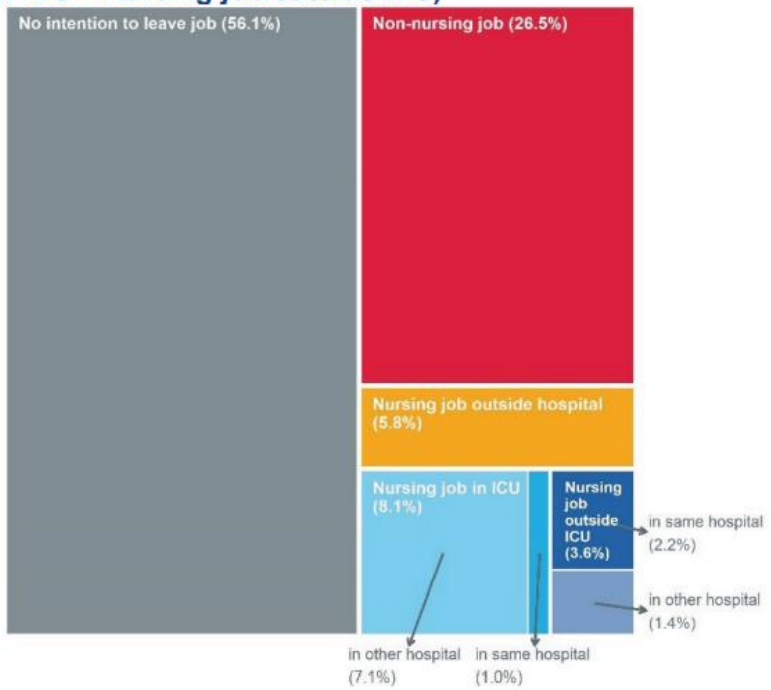


Figure 37 – Intention to leave the job by age and sex

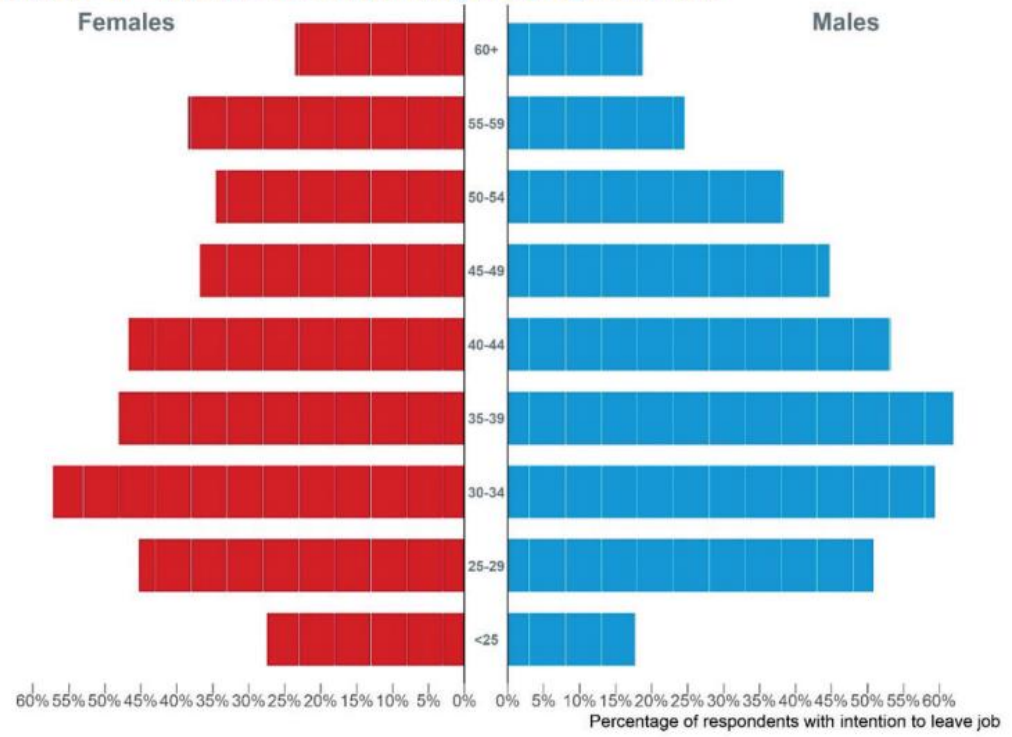
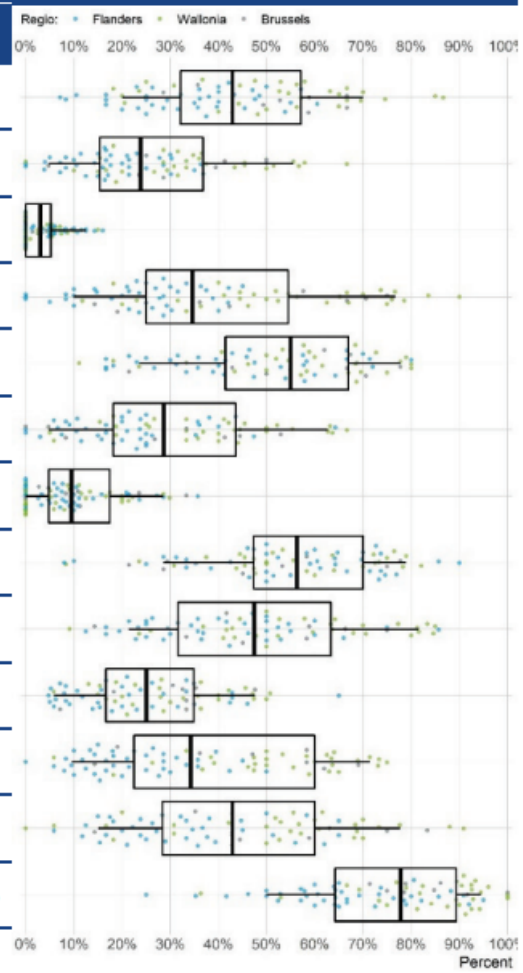


Table 11 – General overview results nurse well-being and job satisfaction

Wellbeing (Percent) the lower the better	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
Intention to leave job	43.9%	34.9% ^{B,W}	54.8% ^{F}	52.7% ^{F}	7.1%	32.1%	42.9%	57.1%	86.7%	
Intention to leave nursing profession	26.5%	17.4% ^{B,W}	37.5% ^{F}	34.9% ^{F}	0.0%	15.4%	23.8%	36.8%	66.7%	
Intention to leave ICU, but continue as hospital nurse	3.6%	4.2%	2.7%	3.3%	0.0%	0.0%	3.0%	5.3%	16.0%	
Dissatisfied with job	39.2%	25.9% ^{B,W}	56.6% ^{F}	47.6% ^{F}	0.0%	25.0%	34.6%	54.5%	90.0%	
Dissatisfied with advancement opportunity	53.1%	46.8% ^{B,W}	59.4% ^{F}	62.5% ^{F}	11.1%	41.4%	55.0%	67.0%	80.0%	
Dissatisfied with schedule flexibility	31.2%	23.9% ^{W}	42.2% ^{F}	32.0%	0.0%	18.2%	28.6%	43.6%	66.7%	
Dissatisfied with independence at work	11.2%	10.5%	12.6%	10.5%	0.0%	4.8%	9.5%	17.5%	35.7%	
Dissatisfied with annual leave	56.4%	55.7%	59.6%	50.5%	8.0%	47.4%	56.3%	70.0%	90.0%	
Dissatisfied with educational opportunity	47.5%	38.4% ^{B,W}	59.4% ^{F}	53.5% ^{F}	9.1%	31.6%	47.4%	63.3%	85.7%	
Dissatisfied with sick leave	26.8%	22.7% ^{W}	32.4% ^{F}	28.7%	4.8%	16.7%	25.0%	34.9%	65.0%	
Dissatisfied with professional status	38.7%	24.0% ^{B,W}	56.0% ^{F}	53.5% ^{F}	0.0%	22.5%	34.2%	60.0%	75.0%	
Dissatisfied with study leave	44.0%	34.7% ^{B,W}	56.1% ^{F}	50.5% ^{F}	0.0%	28.4%	42.9%	60.0%	90.9%	
Dissatisfied with wages	75.1%	66.1% ^{B,W}	86.3% ^{F}	82.9% ^{F}	25.0%	64.2%	77.8%	89.3%	100.0%	



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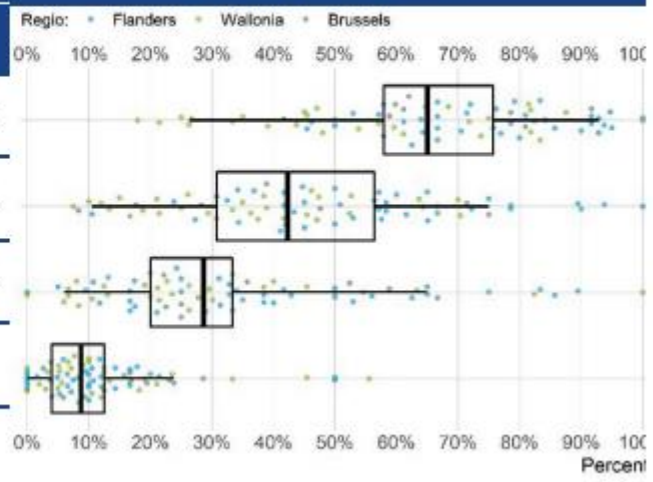
III. Résultats/Discussion

Table 12 – Nurses' perceived quality of care, at hospital site and regional level

Nurse-perceived quality of care (Percentage) the higher the better	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
Good or excellent quality of care on unit	64.5%	71.6% ^{W}	53.9% ^{F}	63.6%	17.9%	57.9%	65.0%	75.7%	100.0%	
Very good or excellent patient safety grade	43.6%	51.3% ^{W}	33.7% ^{F}	37.5%	7.5%	30.8%	42.3%	56.4%	100.0%	
Quality of care remained the same or improved	30.2%	32.9%	25.8%	30.5%	0.0%	20.0%	28.6%	33.3%	100.0%	
Confident or very confident in management actions	10.1%	9.6%	9.6%	13.5%	0.0%	4.0%	8.7%	12.5%	55.6%	



Note: *significant differences at p=0.05 (Tukey's pairwise comparison) between regional averages are indicated by superscripts ^{B} = differs from Brussels, ^{F} = differs from Flanders, ^{W} = differs from Wallonia*

III. Résultats/Discussion

- **Un environnement de travail** satisfaisant est systématiquement associé à de meilleurs résultats en matière de **bien-être au travail** des infirmiers
- On observe également une telle association entre la satisfaction relative à **l'environnement de travail** et la **qualité des soins**

III. Résultats/Discussion

- Pour le **Burnout**, l'association n'est observée que lorsque l'on compare les 25 % d'hôpitaux offrant le meilleur **environnement de travail** aux 25 % offrant le pire environnement
- Les répondants qui travaillent dans des hôpitaux en **Wallonie** ou à **Bruxelles** rapportent des risques de **burnout** significativement plus élevés que ceux qui travaillent en **Flandre**
- Il apparaît également que les **hommes** ont un risque de dépersonnalisation plus élevé que les femmes. Le risque est proportionnellement moins important chez les répondants **plus âgés** (≥ 55 ans).

III. Résultats/Discussion

- Par exemple, le risque de burnout est **2,4 fois** plus important dans les hôpitaux où l'environnement de travail est le plus mauvais (54%) que dans ceux où il est le meilleur (23%)
- L'intention de quitter son emploi est aussi **2,1 fois** plus élevée dans les établissements où l'environnement de travail est le plus mauvais (56% contre 27%). La qualité des soins semble également liée à ce facteur

III. Résultats/Discussion

- La **satisfaction** vis-à-vis de **l'environnement de travail** est également associée au nombre de **soins non réalisés**
- Pour le **ratio patient/infirmier**, on constate certaines associations significatives entre ce ratio et certaines variables dépendantes lorsqu'on compare les 25% d'hôpitaux avec le ratio le plus faible aux 25% avec le ratio le plus élevé :
  - Epuisement émotionnel & dépersonnalisation
  - Insatisfaction vis-à-vis du salaire
  - Intention de quitter la profession
  - Soins non réalisés, tâches de planning & de communication non réalisées

Merci de votre attention !!

› Questions ?

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