METEOR

Mental Health: Focus on Retention of Healthcare workers
Summary Report

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THE METEOR SURVEY

'METEOR aims to enhance knowledge on the determinants of job retention of healthcare workers

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Introduction

Almost all European countries are facing challenges caused by **dramatic shortage of healthcare workers**. This phenomenon has been striking hard in the European Union even before the start of the pandemic. In fact, as long ago as 2013, the overall shortfall of the healthcare workforce was estimated to be above 1.5 million, which could be compensated only with a 2% average annual growth of healthcare workers (WHO, 2016). Indeed, in 2016 the expected shortage in the European Union was anticipated to reach around 4 million in 2030, with a shortfall of 0.6 million physicians, 2.3 million nurses, and 1.3 million other healthcare workers (WHO, 2016). The shortage of healthcare workers in the European Union might be caused by several factors, including ageing population, emigration of healthcare workforce, difficulties in training and education, and lack of workforce planning (e.g., Rimmer, 2014).

Figure 1: Job Demands-Resources Model adapted to turnover intentions
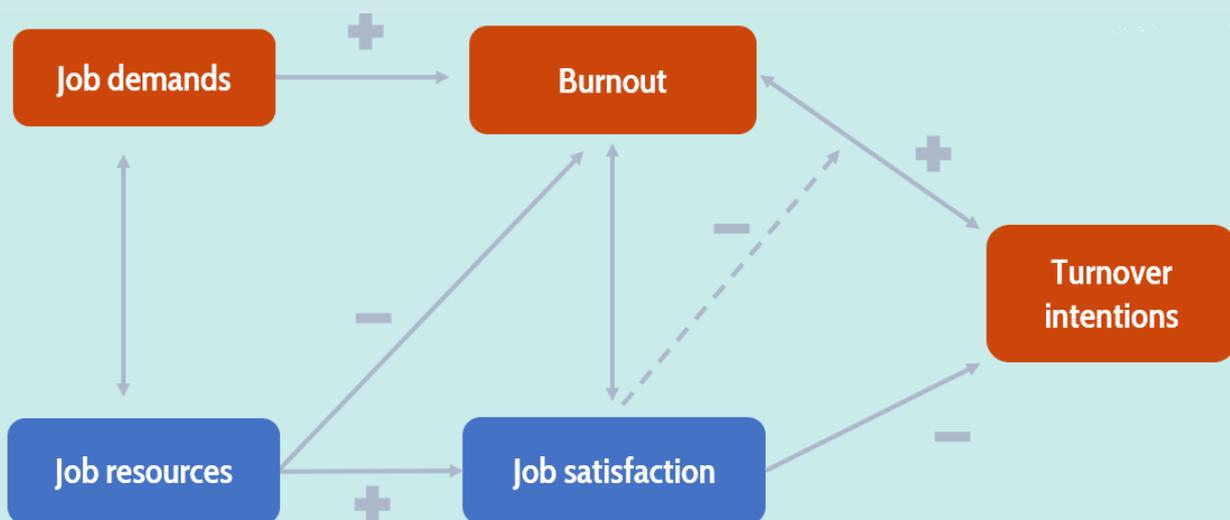
The ongoing COVID-19 pandemic has been exacerbating the shortage of healthcare workforce and is undermining the capabilities of European health systems to keep offering effective and timely care to citizens. The shortage of healthcare providers in the European Union has several consequences, including reduced access to healthcare services and **increased workload for healthcare professionals**, which is associated with a **high risk of chronic stress and burnout**. Multiple studies among healthcare workers showed that work-related stress and burnout are **consistently positively associated with intention to leave** (including leaving the profession) (OECD, 2016), while an increased job satisfaction leads to healthcare worker's intent to stay and decrease turnover (Windover et al., 2018, Pathman et al., 2002, Coomber et al., 2007). The underlying theoretical model of the METEOR model to explain the turnover intention is shown in Figure 1.

The Survey Design

With the aim to investigate the intention to leave, related to job satisfaction and burnout, we carried out two cross-sectional multicenter studies, one involving nurses and the other one physicians. They were selected from a total of eight hospitals across **Belgium, the Netherlands, Italy, and Poland**. The hospitals included one academic and one non-academic institution per country. The data collection for both studies took place **between May 16th and September 30th, 2022**. The sample size for these two surveys was calculated to estimate the proportion of the intention to leave the job, as to guarantee a confidence level of 95% and an absolute error of 5%. The sample size was not calculated to infer the intention to leave at country level, but countries were chosen as a target for recruitment.

	Number of physicians working at hospital	Number of responding physicians	Number of complete responses	Response rate	Completion rate
Belgium	2252	189	158	7%	84%
Netherlands	2638	196	112	4%	57%
Italy	1190	143	105	9%	73%
Poland	606	15	6	1%	40%
Overall	6686	543	381	6%	70%

	Number of nurses working at hospital	Number of responding nurses	Number of complete responses	Response rate	Completion rate
Belgium	4980	1014	852	17%	84%
Netherlands	3707	429	346	9%	80%
Italy	1212	141	85	7%	60%
Poland	809	96	62	8%	65%
Overall	10708	1680	1351	13%	80%

All physicians and nurses in force at each participating hospital at the date of 1st April 2022 were included in the study. Before respondents could participate in the study, they would have to read the information letter and agree with the online informed consent.

There were 381 complete responses from physicians and 1,351 from nurses. The response rate was 6% of 6,686 hospital physician and 8% of 10,708 hospital nurses. The completion rate was 70% of 543 hospital physician that consented the survey and 80% of 1,680 hospital nurses that consented the survey. The study was approved by the KU Leuven Ethical Committee (Ref. nr B3222021000679, 21 Jan 2022)

The Questionnaire

The Meteor questionnaire for Turnover intention (MTI) was built in the English language and translated in the native languages of the four partner countries (Dutch, Italian, Polish) by the Consortium researchers. After back translation, the questionnaire was uploaded on a **GDPR-conform online platform** (Survey Monkey), to be self-administered.

The MTI questionnaire was built on the base of validated questionnaires: the Maslach Burnout Inventory (Schaufeli et al., 2001), the COPSOQ III (Burr et al., 2019), the AHRQ Hospital Survey on Patient Safety questionnaire (Sorra et al., 2016) and two questions about turnover intention from a study of Kaihlanen et al (2020). These questionnaires included eight sections regarding **personal and workplace characteristics**, **job demands** (JD), **job resources** (JR), **work engagement** (WE), **emotional exhaustion** (EE), **depersonalization** (DEP), **job satisfaction** (JS) and **intention to leave** (TI). Overall, the questionnaire included **75 items for physicians** and **76 items for nurses** (an additional question about the highest educational level achieved). JD, JR, WE, JS and TI were scored on a 5-point Likert scale coded between 0 and 4 (between 4 and 0 for reversed items), in agreement with the source tools (Burr et al., 2019; Sorra et al., 2016). The items for EE and DEP were scored on a 7-point Likert scale ranging between 0 and 6, to be consistent with the MBI tool (Schaufeli et al., 2001).

The **internal consistency** of the MTI questionnaire **for physicians** was overall excellent (alpha=0.939) and ranged across seven domains between acceptable values (DEP and WE), good values (JD, JR, JS) and excellent (EE). Only TI showed poor internal consistency.

The **internal consistency** of the MTI questionnaire **for nurses** was overall excellent (alpha=0.934) and ranged across seven domains between acceptable values (TI's alpha=0.725, DEP's alpha=0.786, WE's alpha=0.787), good values (JD, JR, JS showed alpha equal to 0.873, 0.816 and 0.802, respectively) and the EE's excellent value (0.914)
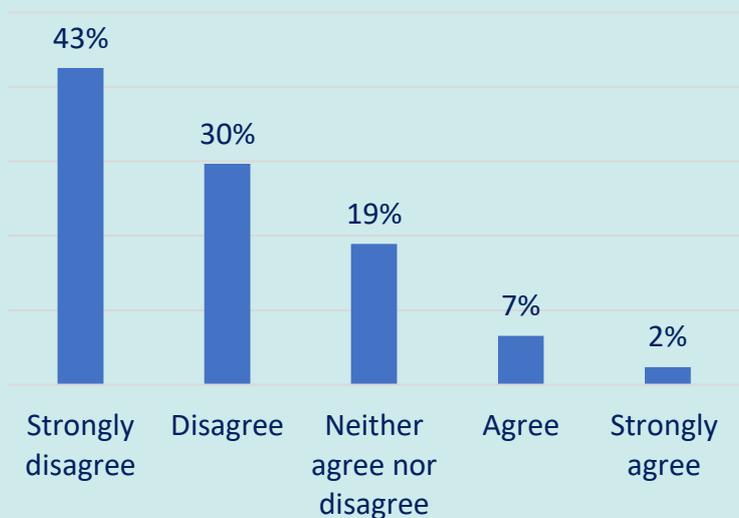
Results of the Survey: Physicians

Intention to leave the hospital for another one
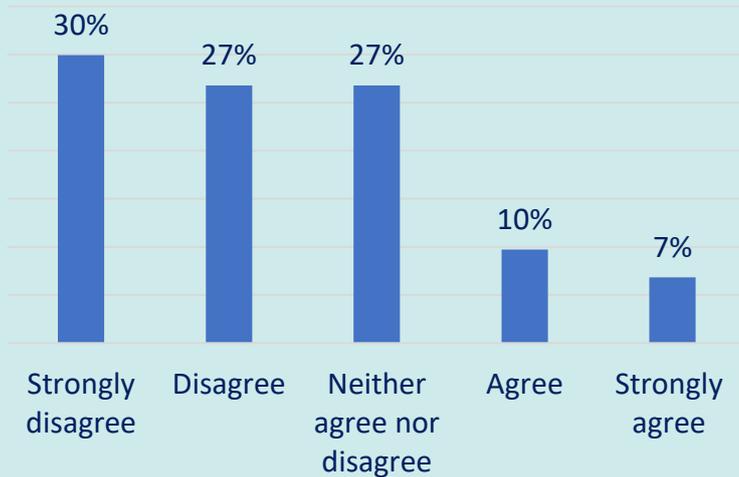
17% of physicians agreed or strongly agreed to leave the hospital for another one. There was high variability among countries with the maximum in Belgium (49.2%), followed by Italy (31.7%) and The Netherlands (17.5%).

Most of respondents who intended to leave the hospital were **females** (50.8%), were on average 38.4(10.3) years old and the seniority was on average 7.0(6.8) years of service. Most of them were full-time workers (74.6%), with permanent contract 74.6%. The majority of physicians who intended to leave the hospital worked in the Diagnostics and Services ward (39.7%).

Intention to leave the medical profession

9% of physicians agreed or strongly agreed to leave the profession. There was high variability among countries with the maximum reported in The Netherlands (52.9%), followed by Belgium (29.4%) and Italy (17.6%)

Most of respondents who intended to leave the profession were **females** (50%), were on average 43.4(9.3) years old and the seniority was on average 10.7(8.2) years of service. Most of them were part-time workers (58.8%), with permanent contract (85.3%). The majority of physicians who intended to leave the hospital worked in the Surgery ward (44.1%).

Results of the Survey: Physicians

Burnout: Emotional Exhaustion
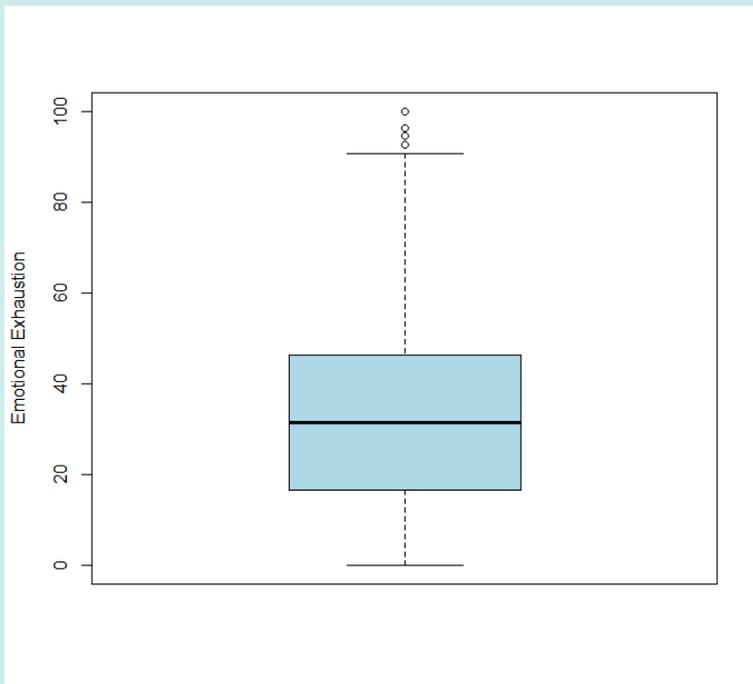
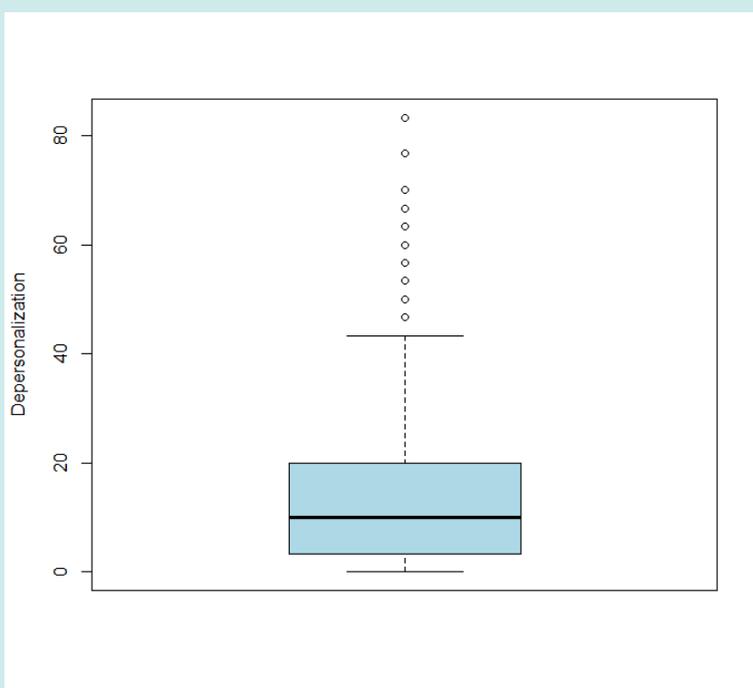Overall, on the scale 0-100 the responding physicians assigned a median score of 31.5 to their emotional exhaustion.
23% of physicians agree or strongly agree of being emotionally exhausted. There was high variability among countries with the maximum in Belgium (42.5%) followed by Italy (36.8%), and the Netherlands (17.2%). Most of emotionally exhausted respondents were females (63.2%), were on average 43.0(9.7) years old and the seniority was on average 10.6(8.4) years of service. Most of them were full-time workers (69.0%), with permanent contract (77.0%). The majority of these physicians worked in Medicine ward (35.6%).

Burnout: Depersonalization

Overall, on the scale 0-100 the responding physicians assigned median score of 10 to their level of depersonalization. **22% of physicians agree or strongly agree of being depersonalized.** There was high variability among countries with the maximum in Belgium (42.4%) followed by the Netherlands (27.1%), and Italy (24.7%).

Most of depersonalized respondents were males (51.8%), were on average 41.8(10.8) years old and the seniority was on average 10.4(8.1) years of service. Most of them were full-time workers (61.2%), with permanent contract (72.9%). The majority of these physicians worked in Medicine ward (34.1%).
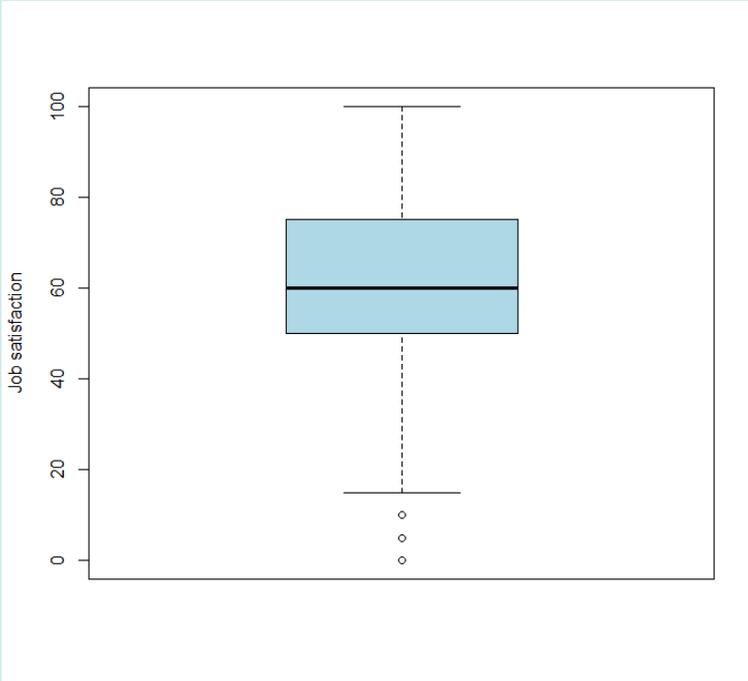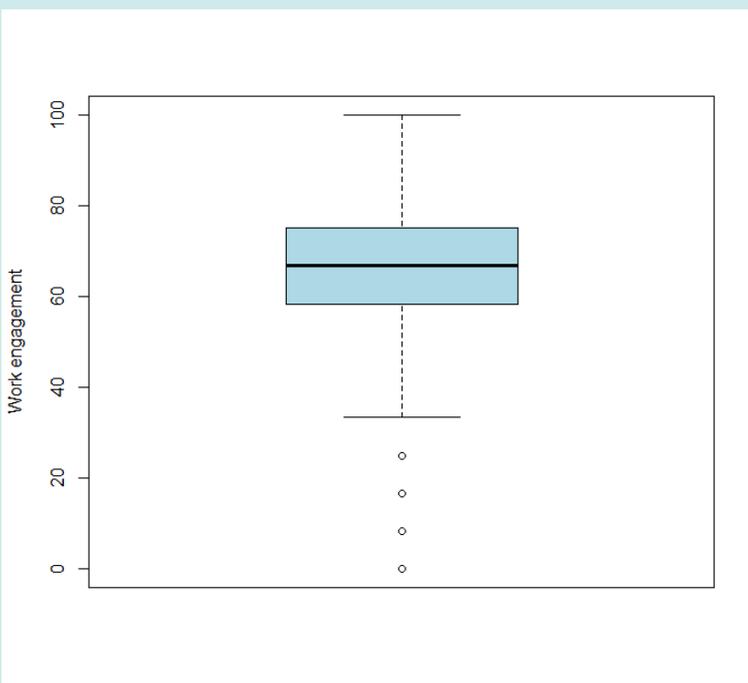
Results of the Survey: Physicians

Job satisfaction

Overall, on the scale 0-100 the respondent physicians assign a median score of 60 to their job satisfaction.

13% of physicians agree or strongly agree of being satisfied at work. There was high variability among countries with the maximum in Belgium (49%), followed by The Netherlands (34.7%) and Italy (16.3%). Most of respondents satisfied at work were females (57.1%), were on average 47.2(9.2) years old and the seniority was on average 12.4(9.2) years of service. Most of them were part-time workers (51.0%), with permanent contract (93.9%). The majority of these physicians worked in Medicine ward (49.0%).

Work engagement

Overall, on the scale 0-100 the respondent physicians assign a median score of 66.7 to their work engagement.

19% of physicians agree or strongly agree of being engaged at work. There was high variability among countries with the maximum in Italy (47.2%), followed by Belgium (29.2%) and The Netherlands (22.2%).

Most of respondents not engaged at work were females (59.7%), were on average 48.8(10.2) years old and the seniority was on average 14.5(10.9) years of service. Most of them were full-time workers (68.1%), with permanent contract (84.7%). The majority of these physicians worked in Medicine ward (33.3%).

Results of the Survey: Nurses
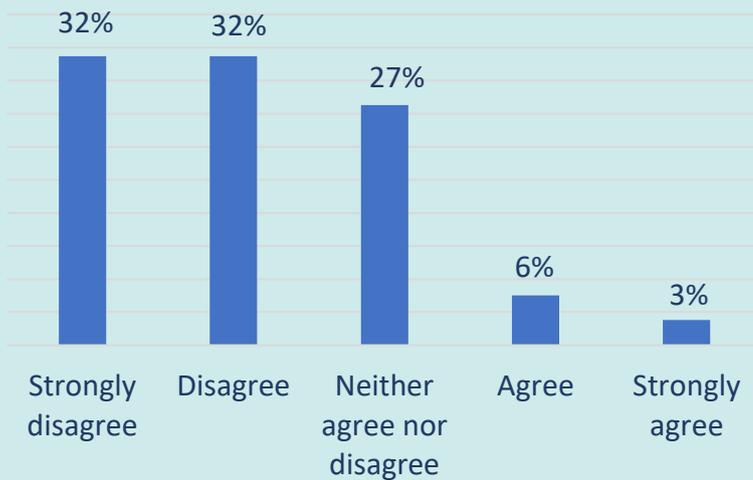
Intention to leave the hospital for another one

|				
32%	32%	27%	6%	3%
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

9% of nurses agreed or strongly agreed to leave the hospital for another one. There was high variability among countries with the maximum in The Netherlands (19%) followed by Belgium (12%), Italy (8%), and Poland (6%).

Most of respondents who intended to leave the hospital were **females** (73%), were on average 37(10) years old and the seniority was on average 11(8) years of service. Most of them were part-time (57%) workers, with permanent contract (94%).

The majority of nurses who intended to leave the hospital worked in the Medicine ward (46%).

Intention to leave the nursing profession

33%	29%	24%	9%	4%
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
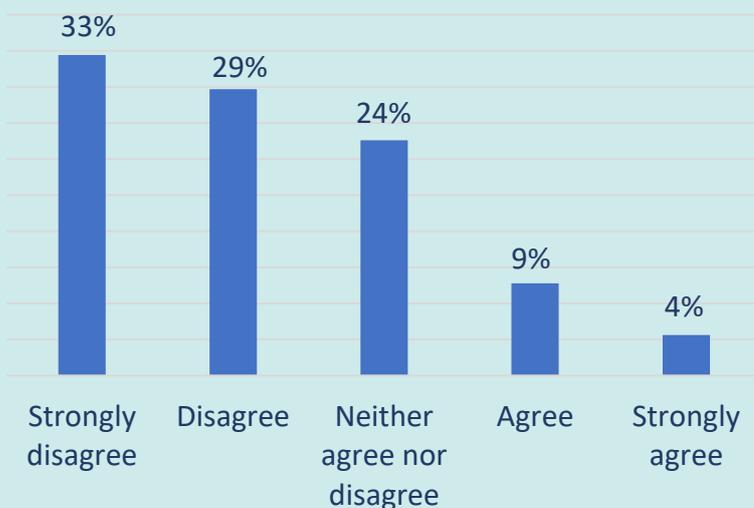
13% of nurses agreed or strongly agreed to leave the profession. There was high variability among countries with the maximum in The Netherlands (19%) followed by Belgium (13%), Italy (7%), and Poland (6%).

Most of respondents who intended to leave the profession were **females** (80%), were on average 38(10) years old and the seniority was on average 13(8) years of service. Most of them were part-time workers (60%), with permanent contract (95%). The majority of nurses who intended to leave the hospital worked in the Medicine ward (36%).

Results of the Survey: Nurses

Burnout: Emotional Exhaustion
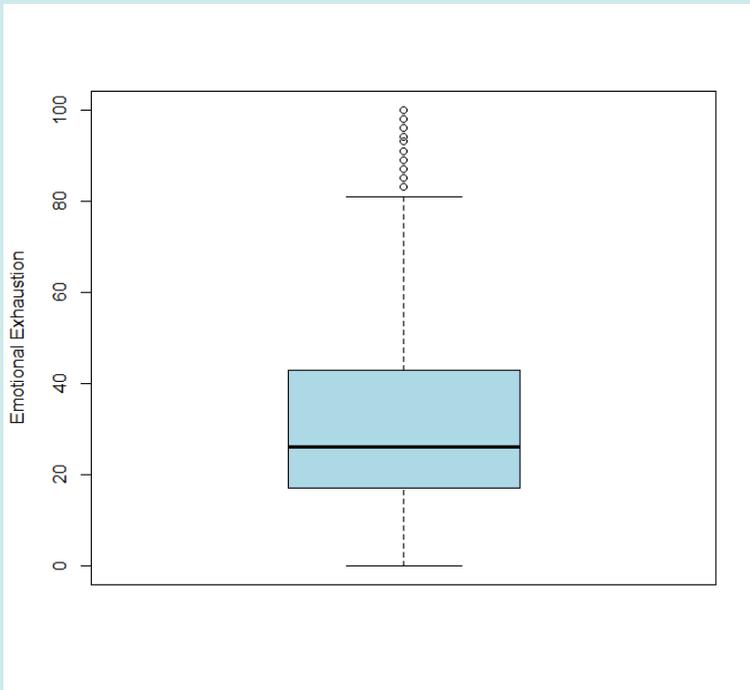
Overall, on the scale 0-100 the respondent nurses assign a median score of 26 to their emotional exhaustion.

24% of nurses agree or strongly agree of being emotionally exhausted. There was high variability among countries with the maximum in Belgium (65%) followed by The Netherlands (19.4%), Italy (10%) and Poland (5.6%).

Most of emotionally exhausted respondents were females (79.4%), were on average 42.1(11.7) years old and the seniority was on average 15.3(11.1) years of service. Most of them were full-time workers (50.6%), with permanent contract (95.3%). The majority of these nurses worked in Medicine ward (39.1%).

Burnout: Depersonalization
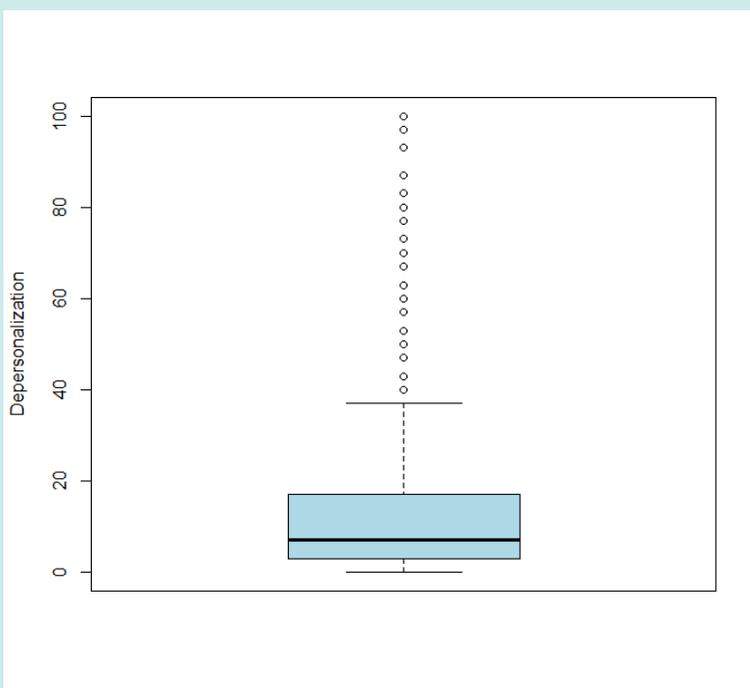
Overall, on the scale 0-100 the respondent nurses assign a median score of 7 to their level of depersonalization.

25% of nurses agreed or strongly agreed of being depersonalized. There was high variability among countries with the maximum in Belgium (62.1%) followed by The Netherlands (26.9%), Italy (6.9%), and Poland (4.2%).

Most of depersonalized respondents were females (78.2%), were on average 40.7(12.0) years old and the seniority was on average 14.9(11.6) years of service. Most of them were part-time workers (51.3%), with permanent contract (95.2%). The majority of these nurses worked in Medicine ward (40.6%).

Results of the Survey: Nurses

Job satisfaction
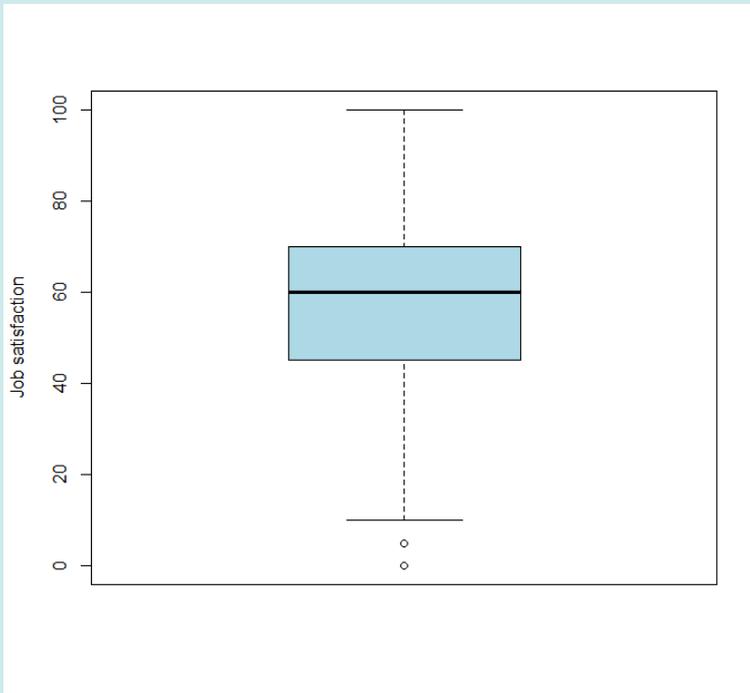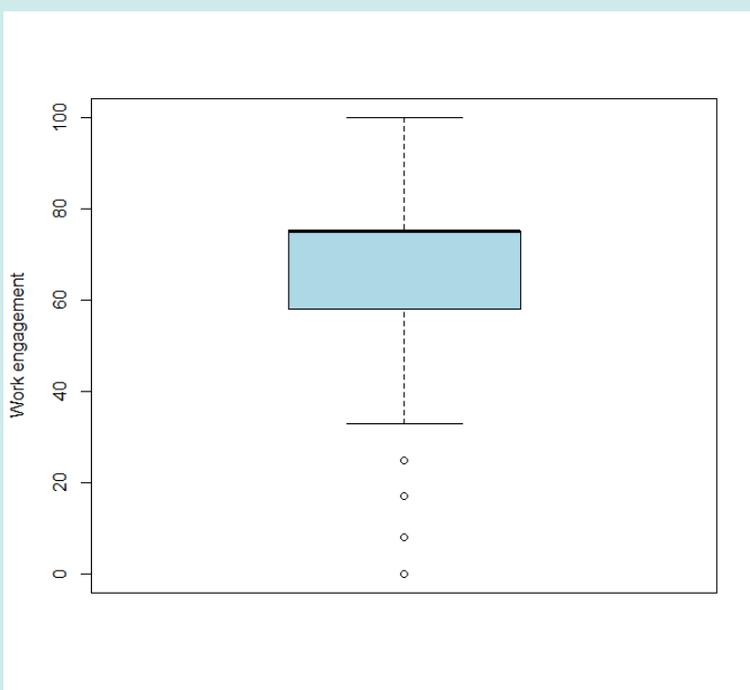

Overall, on the scale 0-100 the respondent nurses assign a median score of 60 to their job satisfaction. **16% of nurses agree or strongly agree of being satisfied at work.** There was high variability among countries with the maximum in Belgium (68.6%), followed by The Netherlands (20.0%), Poland (8.6%) and Italy (2.9%).

Most of respondents satisfied at work were females (81.4%), were on average 46.1(11.5) years old and the seniority was on average 19.0(11.9) years of service. Most of them were part-time workers (52.9%), with permanent contract (96.7%). The majority of these nurses worked in Diagnostics and Services ward (36.7%).

Work engagement

Overall, on the scale 0-100 the respondent nurses assign a median score of 75 to their work engagement. **16.5% of nurses agreed or strongly agreed of being engaged at work.** There was high variability among countries with the maximum in Belgium (48.9%), followed by The Netherlands (27.4%), Italy (12.6%) and Poland (11.2%).

Most of respondents not engaged at work were females (81.6%), were on average 46.6(11.8) years old and the seniority was on average 18.7(12.6) years of service. Most of them were full-time workers (52.9%), with permanent contract (94.2%). The majority of these nurses work in Medicine ward (42.6%).

Strengths & Limitations

Strengths of the Survey

✓ The four participating countries of the METEOR Survey are Belgium, Poland, Italy and The Netherlands. They were selected on the basis of **geographical coverage**, **organisation of the health system** and **number of healthcare workers** (physicians and nurses) per 1000 inhabitants. These four countries give a good representativeness of Healthcare in Europe.

✓ The **MTI Questionnaire was demonstrated to be a validated tool** to estimate the turnover intention of physicians and nurses.

✓ The Survey was successful to **estimate the proportion of physicians and nurses that intend to leave** either the hospital or even the healthcare profession.

✓ The Survey **investigated the most important determinants** of the intention to leave, job satisfaction and burnout.

Limitations of the Survey

✓ Of the four participating countries of the METEOR Survey, **Poland contributed to the Survey at a lesser extent**. The number of respondent physicians was not sufficient to estimate the intention to leave, job satisfaction and burnout for Poland, as well.

✓ The sample was balanced for the hospital type (Academic vs Non-academic) but other important variables as Specialty or type of contract were not controlled for. In our sample, healthcare workers from **Emergency** or **temporary contract** workers **were under-represented**.

✓ To get short and quick questionnaire to fill out, some intrinsic and extrinsic factors for retention, as **remuneration, income and salary retention schemes, career pathway and portfolio were not collected**

Conclusions

The METEOR survey aimed to estimate the prevalence of turnover intention and to detect the possible determinants of job satisfaction, burnout and turnover intention of healthcare workforce in four European countries. Based on our survey, **17% of physicians and 9% of nurses** intend to leave their own hospital while **9% of physicians and 13% of nurses** intend to leave the healthcare profession.

Secondly, our survey outlined the **heterogeneity across countries** for the intention to leave, as well as for job satisfaction and burnout. This finding suggests that, despite of the similar challenges the different countries are faced to, appropriate recruitment and retention policies must be proposed for the specific different contexts.

Lastly, our survey found that some individual and work environment characteristics play a different role to explain the intention to leave, as well as job satisfaction and burnout. **Female healthcare workers** were disproportionately less engaged at work and more inclined to leave than male workers. There was also a certain variability associated to the specialty ward, with **those employed in Surgery more intended to leave**. Therefore, considering the gender dimension when designing policy recommendations is imperative, as well as reflecting the specific needs of different care sectors.

References

Burr H, Berthelsen H, Moncada S, Nübling M, Dupret E, Demiral Y, et al. The third version of the Copenhagen psychosocial questionnaire. Saf Health Work. 2019;10(4):482–503.

Coomber B, Louise Barriball K. Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. Int J Nurs Stud. 2007;44(2):297–314

Demerouti E, Nachreiner F, Bakker AB, Schaufeli WB. The job demands-resources model of burnout. J Appl Psychol. 2001;86(3):499–512.

Kaihlanen A-M, Elovainio M, Haavisto E, Salminen L, Sinervo T. Final clinical practicum, transition experience and turnover intentions among newly graduated nurses: A cross sectional study. Nurse Educ Today. 2020;84:104245.

OECD. Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places. 2016. (OECD Health Policy Studies).

Rimmer, A. (2014). Shortage of doctors across Europe may be caused by migration to UK.

Pathman DE, Konrad TR, Williams ES, Scheckler WE, Linzer M, Douglas J. Physician job satisfaction, dissatisfaction, and turnover. J Fam Pract. 2002;51(7):593.

Sorra J, Gray L, Streagle S, Famolaro T, Yount N, Behm J. AHRQ Hospital survey on patient safety culture: User's guide. Rockville, MD Agency Healthc Res Qual. 2016;

Schaufeli WB, Bakker AB, Hoogduin K, Schaap C, Kladler A. On the clinical validity of the Maslach Burnout Inventory and the Burnout Measure. Psychol Health. 2001;16(5):565–82.

Schaufeli WB, Desart S, De Witte H. Burnout assessment tool (BAT)—development, validity, and reliability. Int J Environ Res Public Health. 2020;17(24):1-21. doi:10.3390/ijerph17249495

Windover AK, Martinez K, Mercer MB, Neuendorf K, Boissy A, Rothberg MB. Correlates and Outcomes of Physician Burnout Within a Large Academic Medical Center. JAMA Intern Med. 2018;178(6):856–8.

World Health Organization (2016) Global strategy on human resources for health: workforce 2030, Geneva. https://www.who.int/hrh/resources/pub_globstrathrh-2030/en/. Accessed 06 March 2023