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Swiss COhort of Healthcare Professionals and Informal CAregivers
Schweizer Kohorte der Gesundheitsfachkräfte und pflegenden Angehörigen
Cohorte Suisse des professionnel·le·s de santé et des proches aidant·e·s
Coorte svizzera di professionisti della salute e familiari curanti

Factors associated with the intent to stay of Swiss healthcare professionals: results from SCOHPICA

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unisanté

UNIL | Université de Lausanne

La Source. Institut et Haute Ecole de la Santé

Hes·so Haute Ecole Spécialisée de Suisse occidentale University of Applied Sciences Western Switzerland

CHUV Centre hospitalier universitaire vaudois

Plan

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  - Aims of SCOHPICA
  - 2022 Health Professionals data collection
  - First Results
- In-Depth Analyses
  - Factors associated with Intent to stay in the profession
  - Clusters of participants
- Discussion
- Next Steps

Introduction

Aims

of SCOHPICA

To describe and understand, over time, how specific professional trajectories and experiences facilitate or prevent **health professionals (HP)** / **informal caregivers (IC)** from embodying their role, and thus from staying in or leaving their job / role

Today: Focus on Health Professionals

Background

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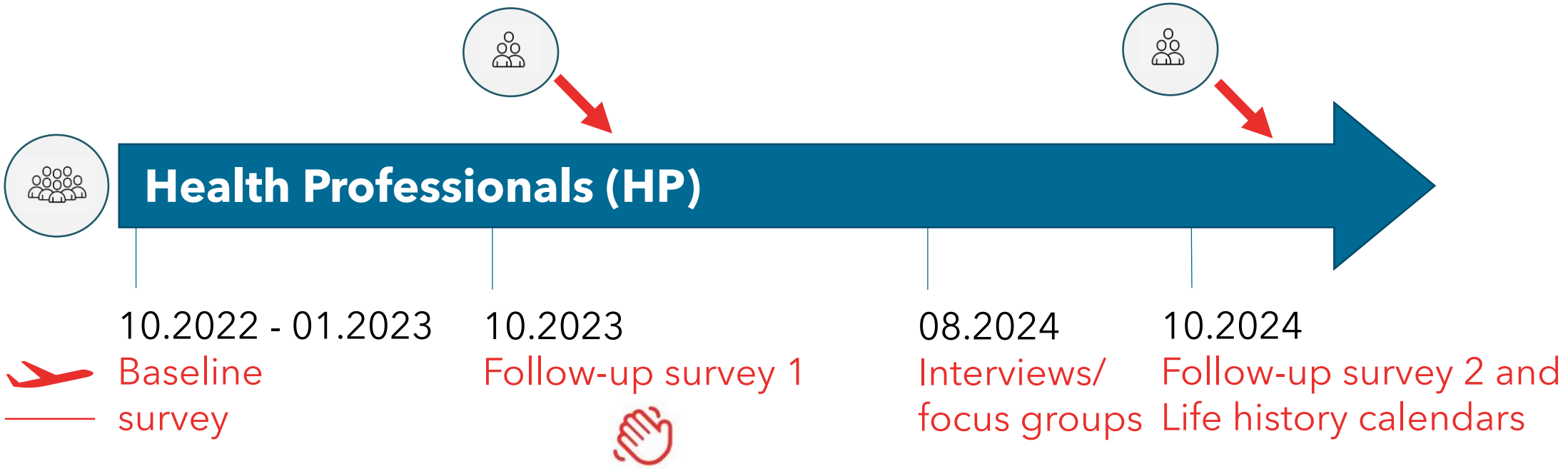
Problems with the health workforce:

- Current and projected shortage of HP, in Switzerland and European countries
- To address this situation, measures have to be undertaken
- Swiss data is lacking to guide such measures (i.e., HP's trajectories, well-being, quality of life, work conditions, etc.)

Longitudinal data on health professionals is essential for **public policy planning and management** of the health workforce in Switzerland, and for **ensuring high-quality healthcare**

Prospective open cohort



2022 Questionnaire

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Baseline web questionnaire:

- 120 questions, ~30 minutes

Outcomes

- **Intention to leave the position / profession / health sector, within next 5 years**
- **Intention to stay in the position / profession / health sector, within the next few months**
- **Well-being**

Professional situation

- Profession and work context
- Current situation (type of activity and rate, employment status, etc.)
- Specialization and training
- Changes of employers/sectors, interruptions due to illness/occupational injury

Socio-demographic characteristics

- Gender
- Age
- Nationality
- Marital/partnership status
- Income
- …

Determinants (dimensions)

… next slides …

2022 Questionnaire

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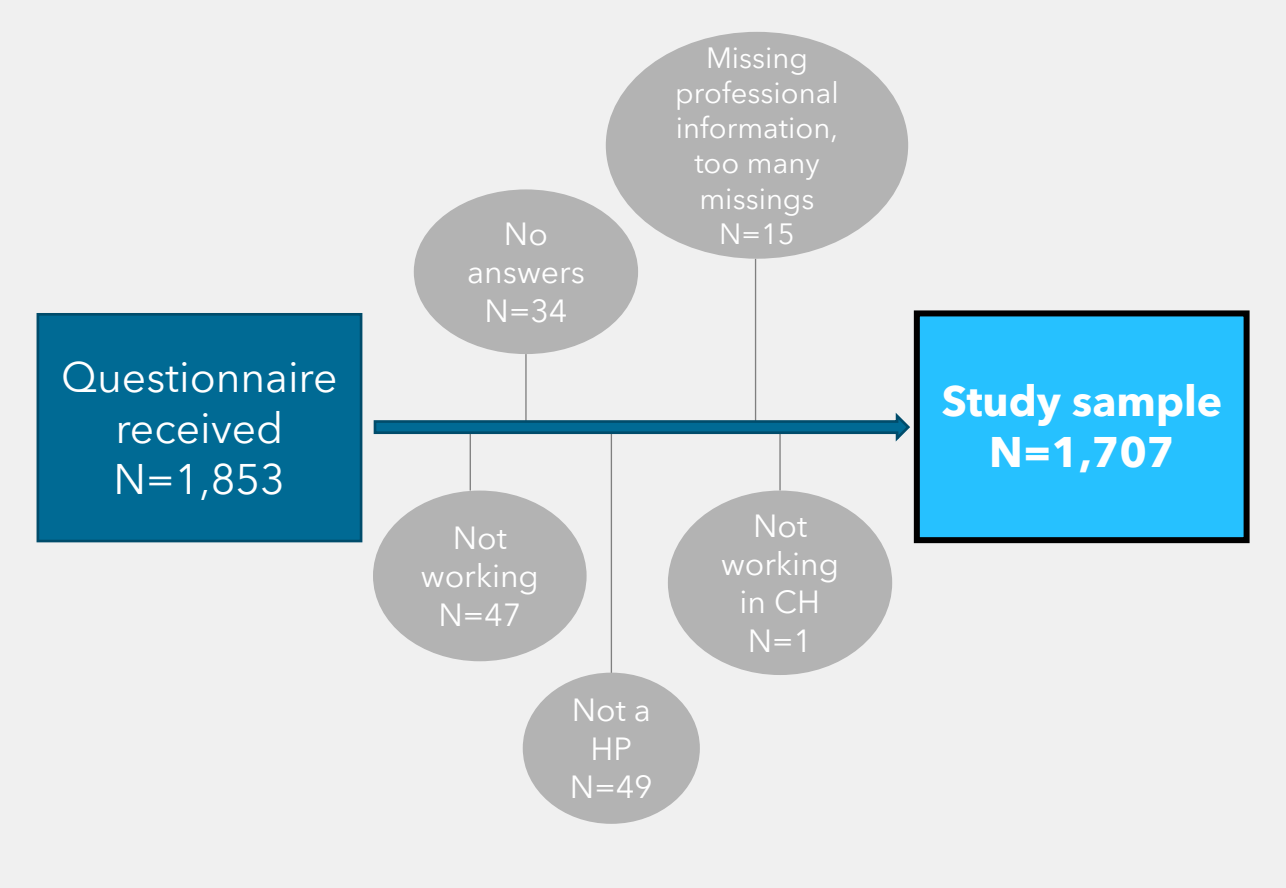
Determinants (dimensions)

Workload	Perceived amount of work in terms of pace and volume
Staffing & resources	Staffing and resource adequacy to work
Opportunities for development	Possibility to learn new things at work, to use skills/expertise, to develop competences
Work-life balance	Interference of work demands with private life, work drains energy and has negative effects on private life
Work readiness	Feeling prepared for professional activity by previous training
Recognition at work	Recognition by the company, colleagues and leaders
Meaning of work	Feeling that the work done is meaningful and important
Leadership	Leader's behaviors: providing a vision and an appropriate model, fostering the acceptance of group goals, performance expectations, providing individualized support to staff and intellectual stimulation
Control over working time	Ability to decide when to take holiday; control over work overtime
Influence at work	Degree of influence on the decisions at work
Sense of community at work	Atmosphere and co-operation with colleagues
Interprofessional collaboration	Collaboration between interprofessional team members
Moral resilience	The capacity to sustain/restore integrity in response to moral adversity
Intolerance to uncertainty	The tendency to consider a negative event occurring unacceptable, irrespective of the probability of occurrence

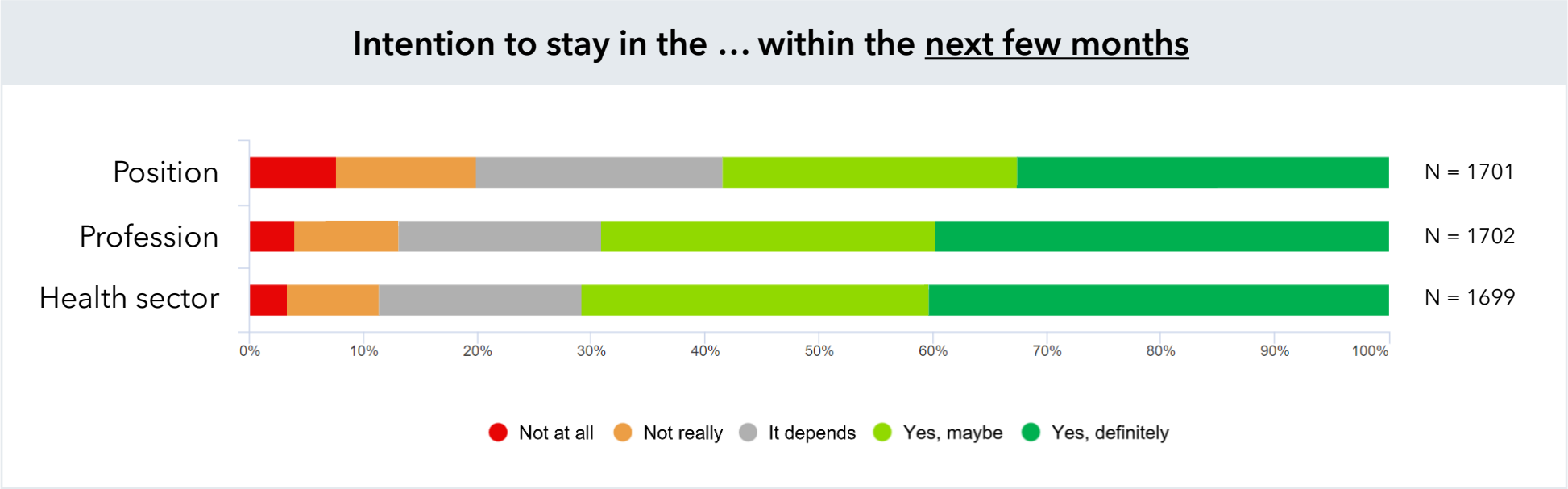
+ Burnout + Self-rated health + Job satisfaction

First Results Reminder

First results – the sample

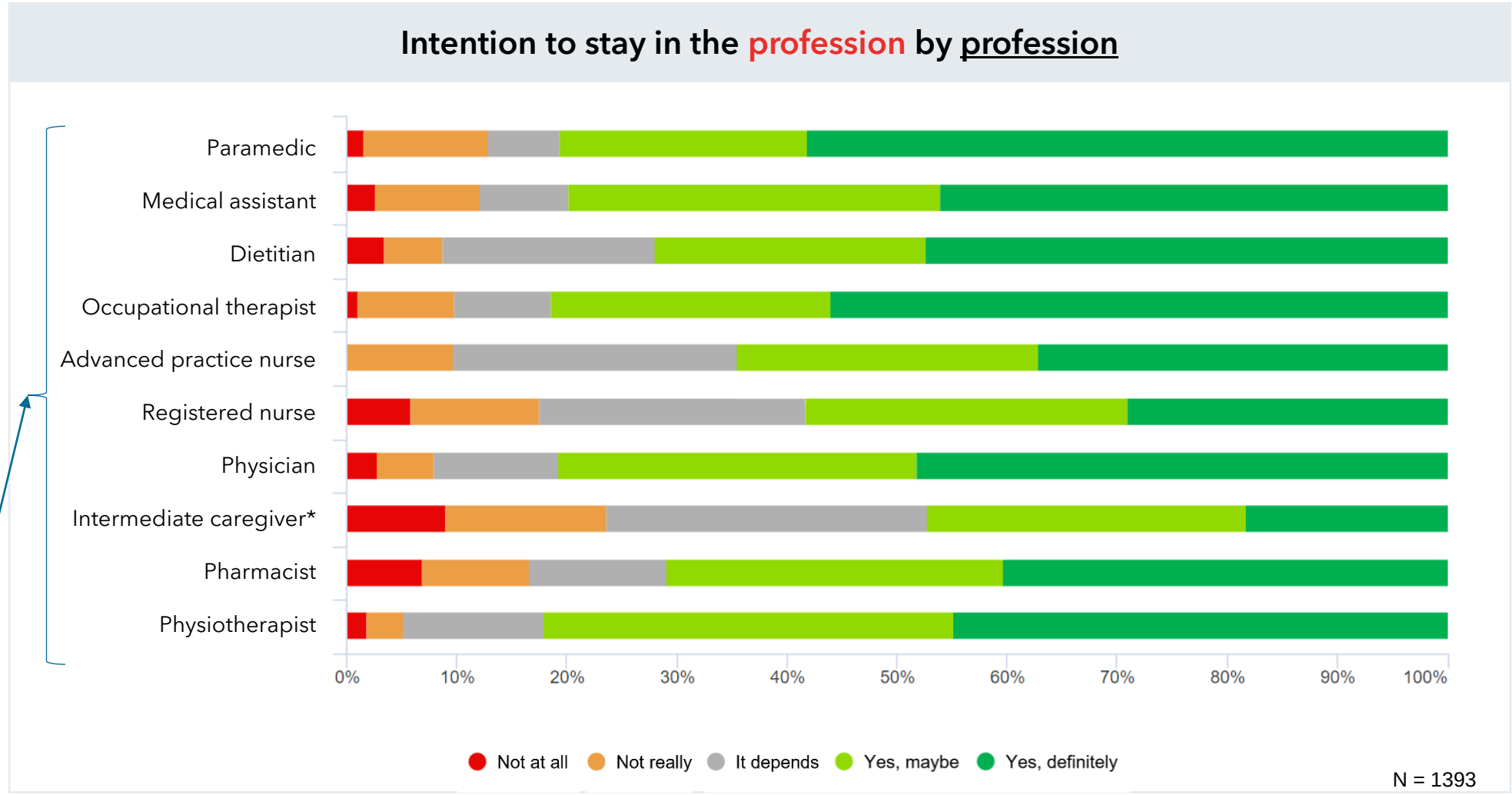


First results – study outcomes



Full presentation
of the first results available
on our website!

First results – study outcomes



n > 50

* (DE) Fachfrau/-mann Gesundheit, Pflegefachfrau/-mann DN1, Krankenpfleger/-in FA SRK
(FR) Assistant·e en soins et santé communautaire (ASSC) ; Infirmier·ière niveau I (NI) ; Infirmier·ière assistant·e (CC-CRS)

In-depths results

Aims

- To derive a core set of factors associated with the intent to stay in the profession suitable for diverse healthcare professionals and care settings in Switzerland.
- To identify clusters of participants with different profiles of core work characteristics, and to relate them with the main professions represented in the baseline SCOHPICA survey.

Univariate associations

Analysis strategy

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To derive a core set of factors

Introduce the different type of information collected in the SCOHPICA survey.

For each sub-models and the main model, add all relevant covariates in a linear regression framework.

Operate necessary statistical checks.

Select the variables based on likelihood ratio tests and the Akaike Information Criterion.

This establishes a core set of factors that will explain much of the variation present in the outcome.

To identify clusters of participants

Run a k-means clustering algorithm on the selected factors (other options such as PAM or hierarchical clustering algorithms also considered).

Select the optimal number of clusters based on the strength of association (i.e. proportion of variance explained) with the intent to stay.

This enables to reduce the dimensionality of the problem and summarize as much of the information as possible in a single cluster membership variable.

Describe the clusters thus obtained through their centres and the proportion of healthcare professionals from different preeminent professions they entail.

Example

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Bivariate model		Intent to stay in the profession (1: lowest, 5: highest)	
		Beta	P-value
Managerial responsibility	No (n=1180)	(reference)	
	Yes (n=502)	**0.13**	0.03

Multivariate model		Intent to stay in the profession (1: lowest, 5: highest)	
		Beta	P-value
Managerial responsibility	No (n=1180)	(reference)	
	Yes (n=502)	**0.008**	0.9
Salary	1: lowest class, 6: highest class	0.13	<0.001

N = 1682

Example

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Salary	1: lowest class, 6: highest class	0.13	<0.001

N = 1682

Focus on this!

Socio-professional information

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- Night shift:
  - yes vs no ⬇ -0.24 [-0.36, -0.12]

Working night shifts compared to not working night shifts is associated with a 0.24 (out of 5) lower intent to stay in the profession (95% CI 0.12 to 0.36) after adjustment for the other socio-professional variables.

- Hours worked per week:
  - 1 to 29 › 30 to 39 › 40 to 49 › 50 or more

    ⬇ -0.14 [-0.21, -0.08]

Each increase in the categories of hours worked per week is associated with a 0.14 lower intent to stay in the profession (95% CI 0.08 to 0.21) after adjustment for the other socio-professional variables.

- Monthly income (CHF):
  - 2'000 or less › 2'001 to 4'000 › 4'001 to 6'000 › 6'001 to 8'000 › 8'001 to 10'000 › more than 10'000

    ⬆ 0.2 [0.15 to 0.25]

N = 1680

Professional path

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- Further education / training:
  - yes vs no ⬆ 0.19 [0.08, 0.3]
- Work-related accident / sick leave in the past five years:
  - yes vs no ⬇ -0.44 [-0.56, -0.32]
- Reduction of employment rate in the past 12 months:
  - yes vs no ⬇ -0.23 [0.1 to 0.37]

N = 1671

Socio-demographics

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- Marital / partnership status:
  - live-in partner vs single ⬆ 0.17 [0.04, 0.3]
  - separated vs single ⬇ -0.27 [-0.47, -0.06]
- Informal caregiving:
  - yes vs no ⬇ -0.23 [-0.34, -0.11]
- Age (years):
  - less than 25 › 25 to 34 › 35 to 44 › 45 to 54 › 55 to 64 › 65 or more

    ⬆ 0.1 [0.05 to 0.15]

N = 1640

Determinants (dimensions of work experiences)

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1

Outcome: intent to stay	Coef. [95% CI]
Work-life balance	0.2 [0.15, 0.25]
Opportunities for development	0.19 [0.14, 0.25]
Meaning of work	0.18 [0.13, 0.23]
Influence at work	0.15 [0.1, 0.21]
Recognition	0.14 [0.09, 0.2]
Workload	0.14 [0.09, 0.2]
Work preparedness	0.05 [0.01, 0.1]

Focus on this model

1. All participants, without intermediate variables (i.e. without job satisfaction, burnout, and self-rated health) (N = 1670)
2. Employee subsample, without intermediate variables (N = 1324)
3. All participants, with intermediate variables (N = 1645)

2

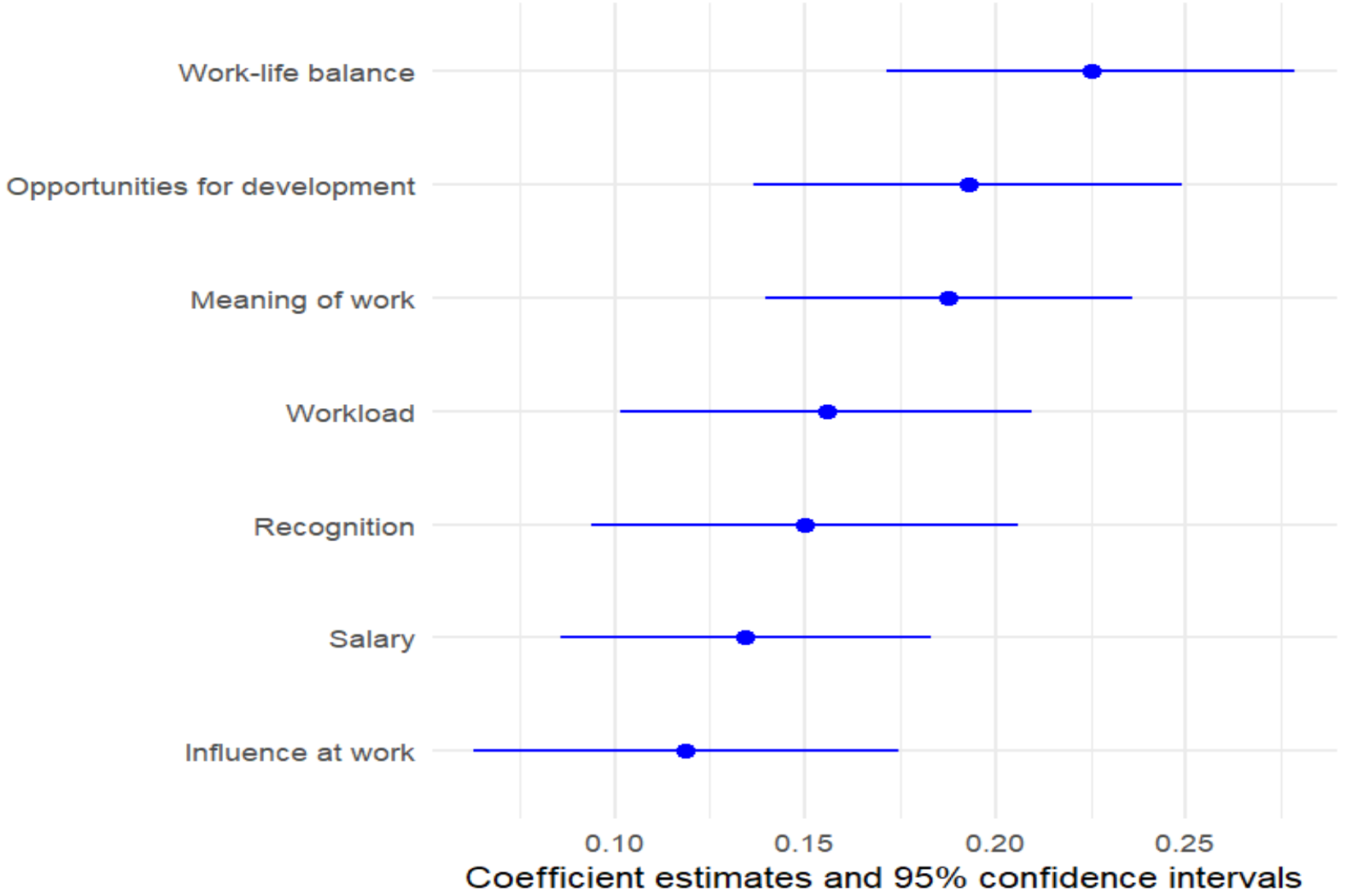
Outcome: intent to stay	Coef. [95% CI]
Work-life balance	0.2 [0.14, 0.27]
Opportunities for development	0.2 [0.14, 0.27]
Meaning of work	0.2 [0.14, 0.25]
Recognition	0.14 [0.07, 0.21]
Staffing and resources	0.11 [0.04, 0.18]
Control over working time	0.1 [0.04, 0.16]
Workload	0.09 [0.03, 0.16]

3

Outcome: intent to stay	Coef. [95% CI]
Job satisfaction	0.37 [0.32, 0.42]
Burnout	0.26 [0.21, 0.31]
Opportunities for development	0.15 [0.1, 0.2]
Meaning of work	0.12 [0.07, 0.16]
Influence at work	0.09 [0.04, 0.14]
Workload	0.08 [0.03, 0.13]

In purple : variables that differ depending on the model

Core factors associated with the intent to stay



- Multivariate linear regression model
- N = 1673
- All covariates are standardized
- Higher scores indicate better working conditions
- Proportion of the variance in the independent variable explained = 0.33
- All associations have p-values < 0.001
- Robust / logistic regression results very similar

Analysis strategy

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To derive a core set of factors

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Operate necessary statistical checks.

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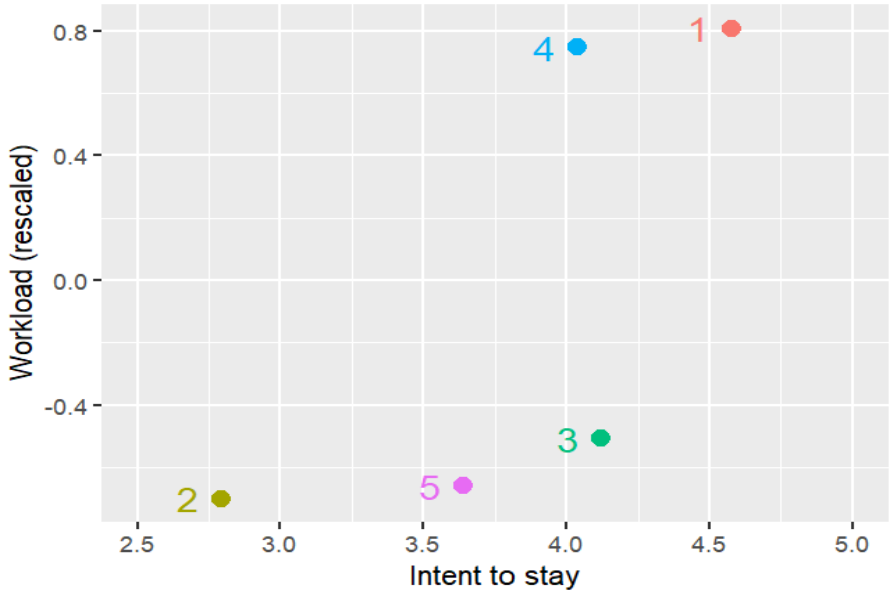
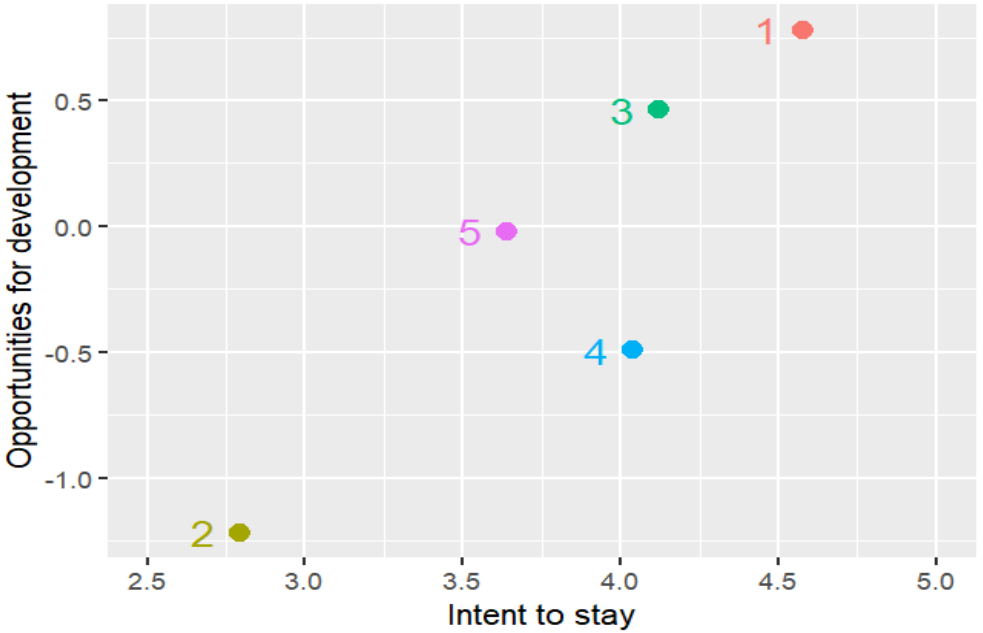
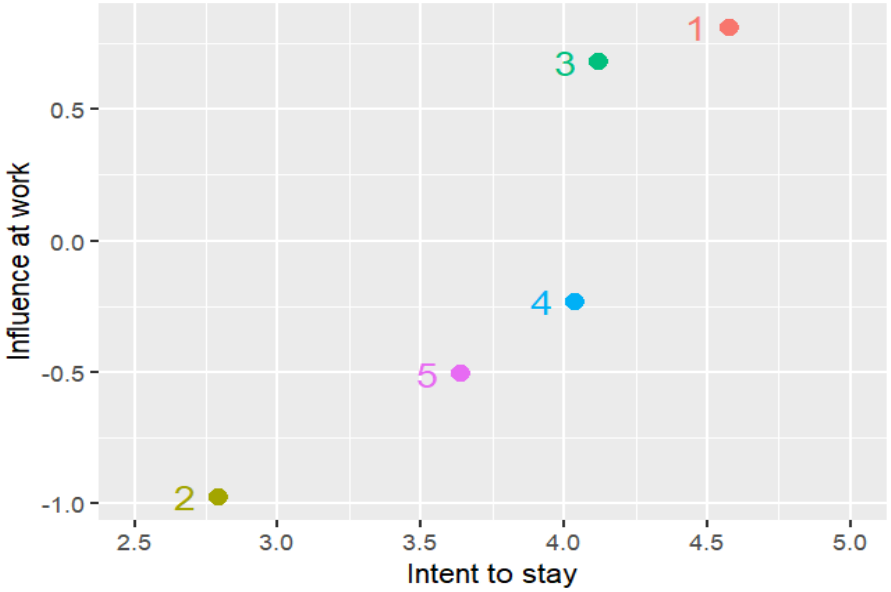
Describe the clusters thus obtained through their centres and the proportion of healthcare professionals from different professions they entail.

First cluster (n = 413)

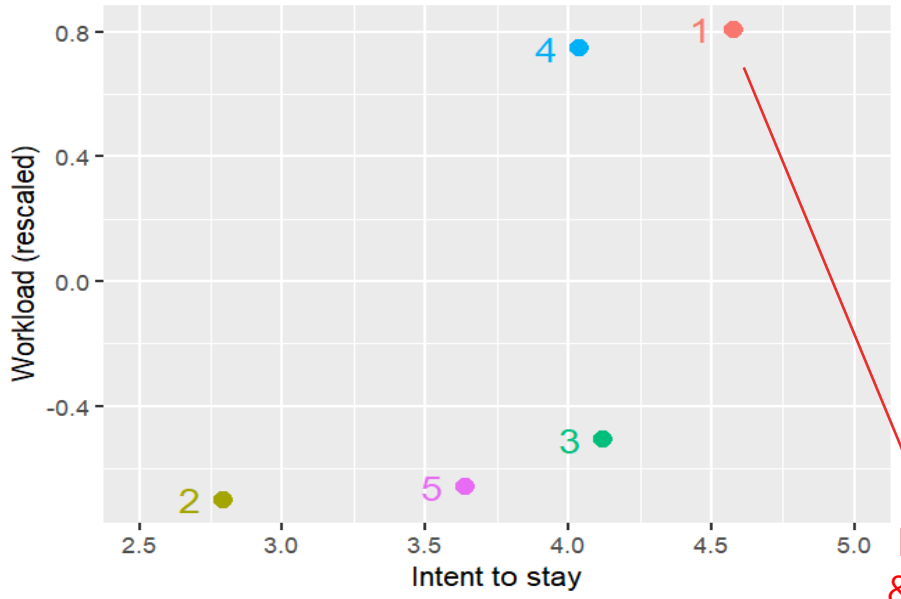


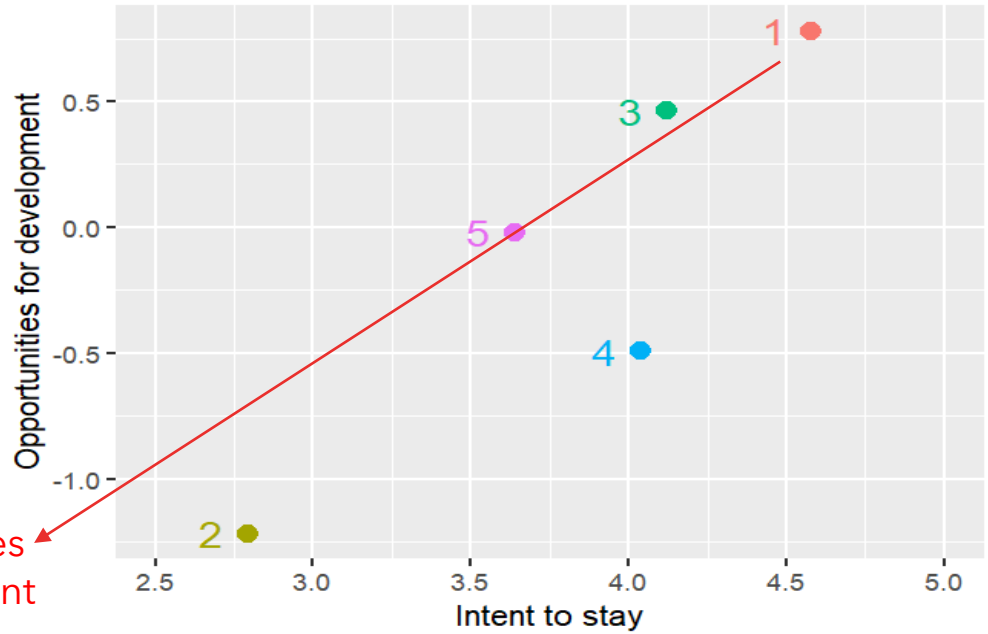




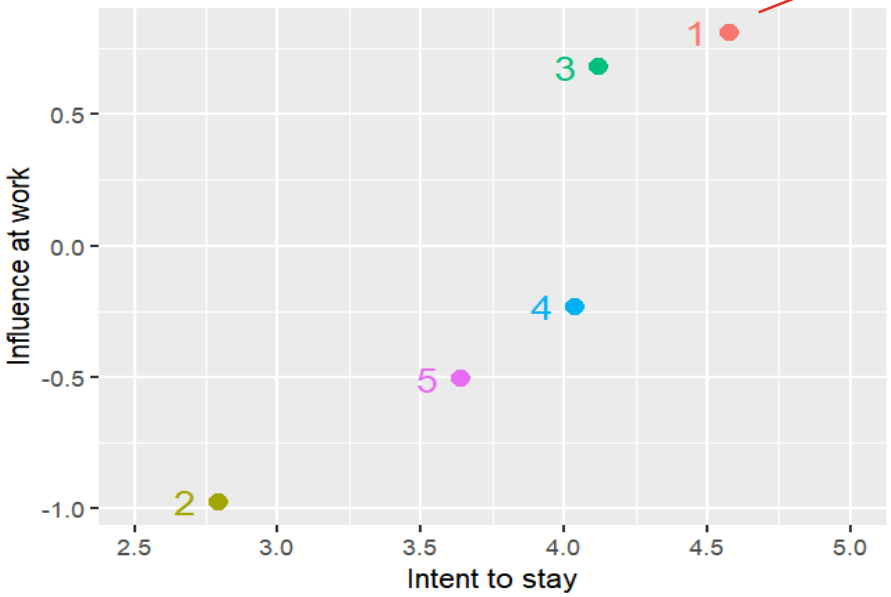
Intent to stay	1	2	3	4	5
Cluster 1	0%	1%	6%	25%	67%
Cluster 2	18%	21%	33%	21%	7%
Cluster 3	3%	8%	12%	29%	48%
Cluster 4	2%	7%	17%	34%	40%
Cluster 5	3%	13%	25%	34%	25%

First cluster (n = 413)





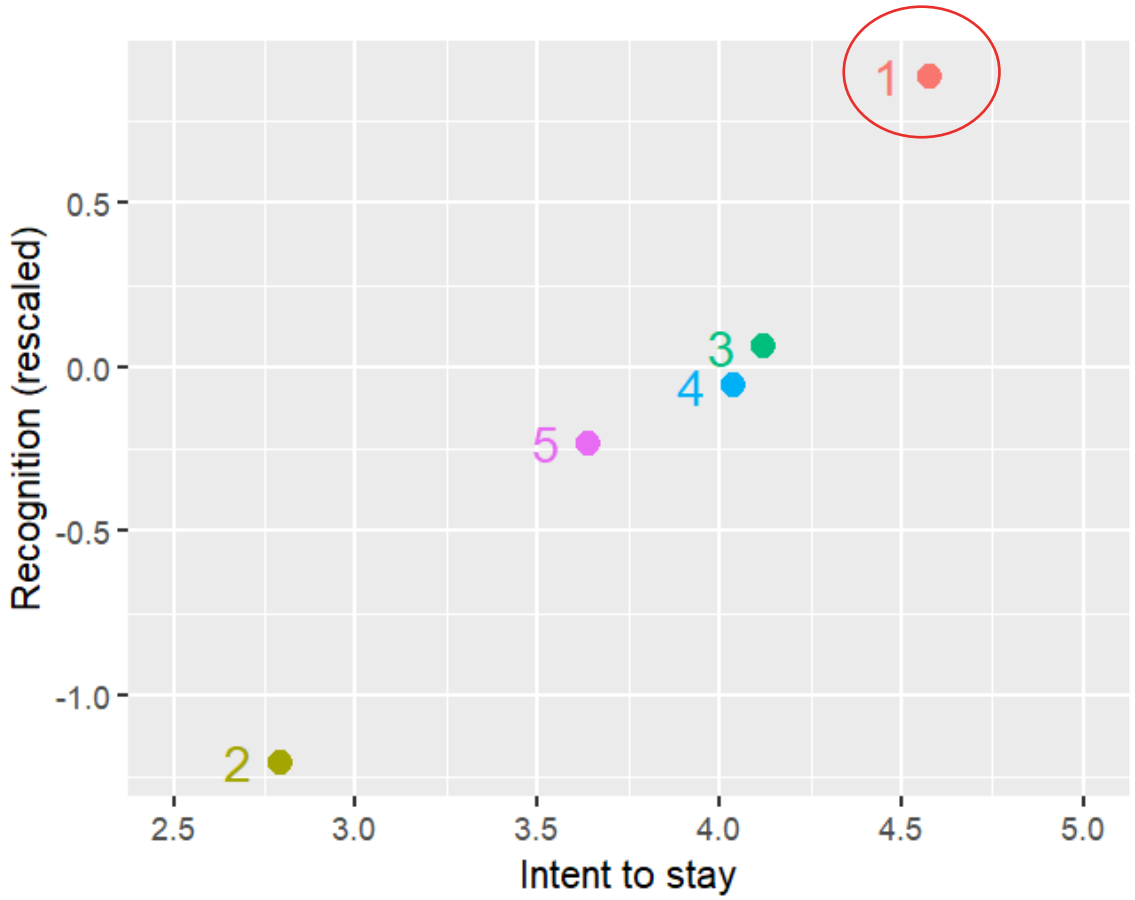
Highest scores & highest intent



24% of the variance explained!

Intent to stay	1	2	3	4	5
Cluster 1	0%	1%	6%	25%	67%
Cluster 2	18%	21%	33%	21%	7%
Cluster 3	3%	8%	12%	29%	48%
Cluster 4	2%	7%	17%	34%	40%
Cluster 5	3%	13%	25%	34%	25%

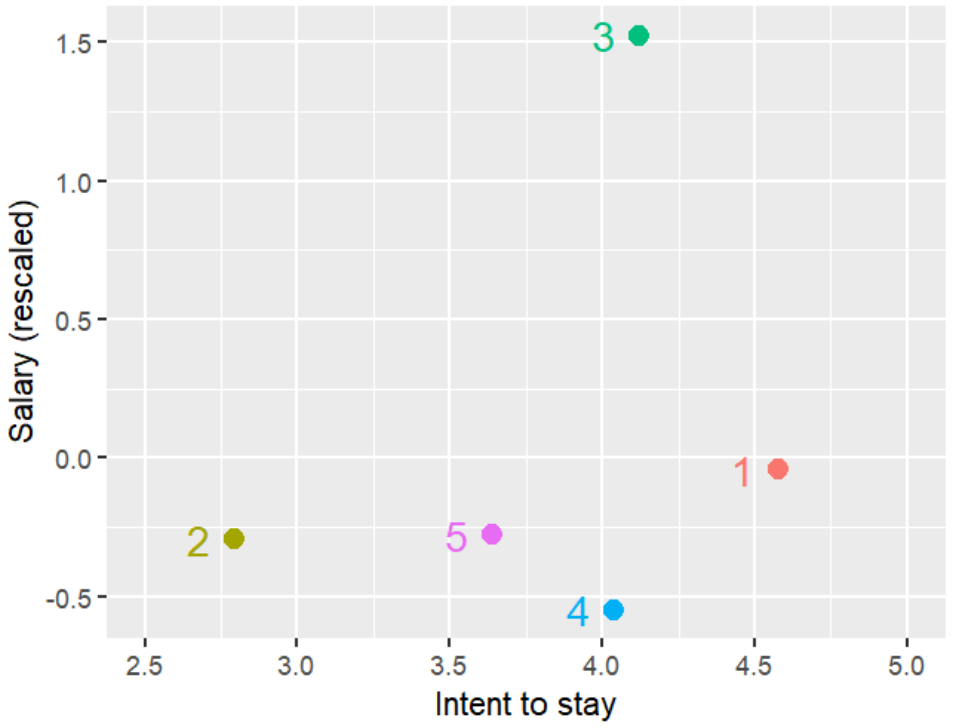
First cluster (cont.)

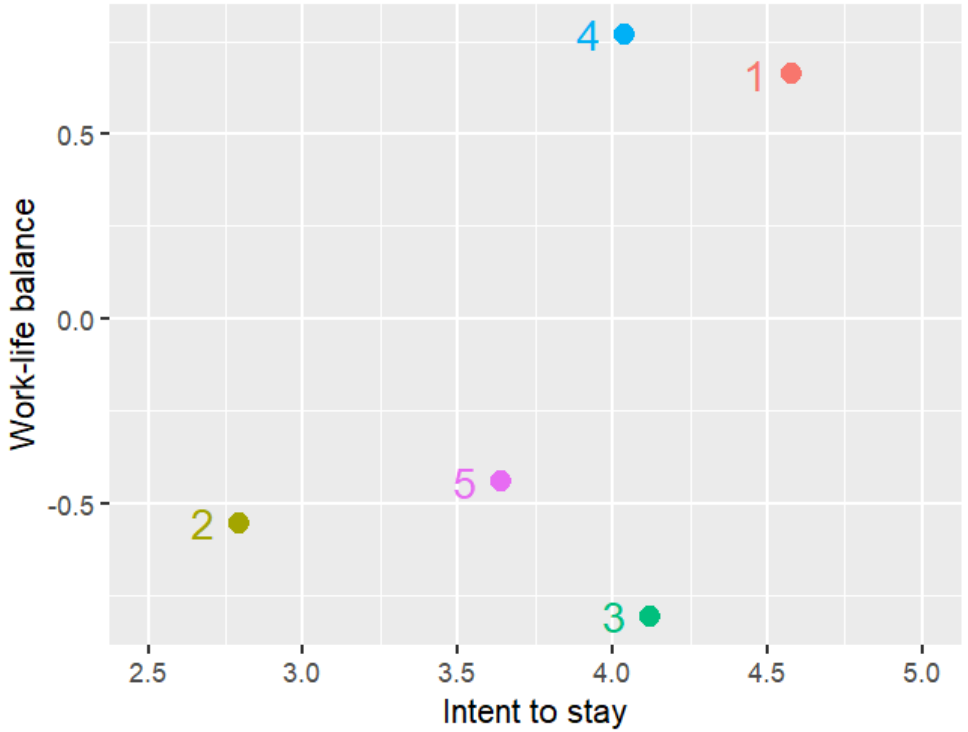


More than 40% of the occupational therapist and paramedic participants in SCOHPICA are part of this cluster

Profession	n	%
Occupational therapist	40	**44.9**
Paramedic	26	**43.4**
Physiotherapist	54	**35.3**
Medical assistant	26	**34.7**
Dietitian	14	**25**
Advanced practice nurse	13	**21**
Registered nurse	100	**18.4**
Pharmacist	12	**17.1**
Physician	31	**14.8**
Intermediate care personnel	8	**14.5**

Third cluster (n=260) vs. Fourth cluster (n=330)

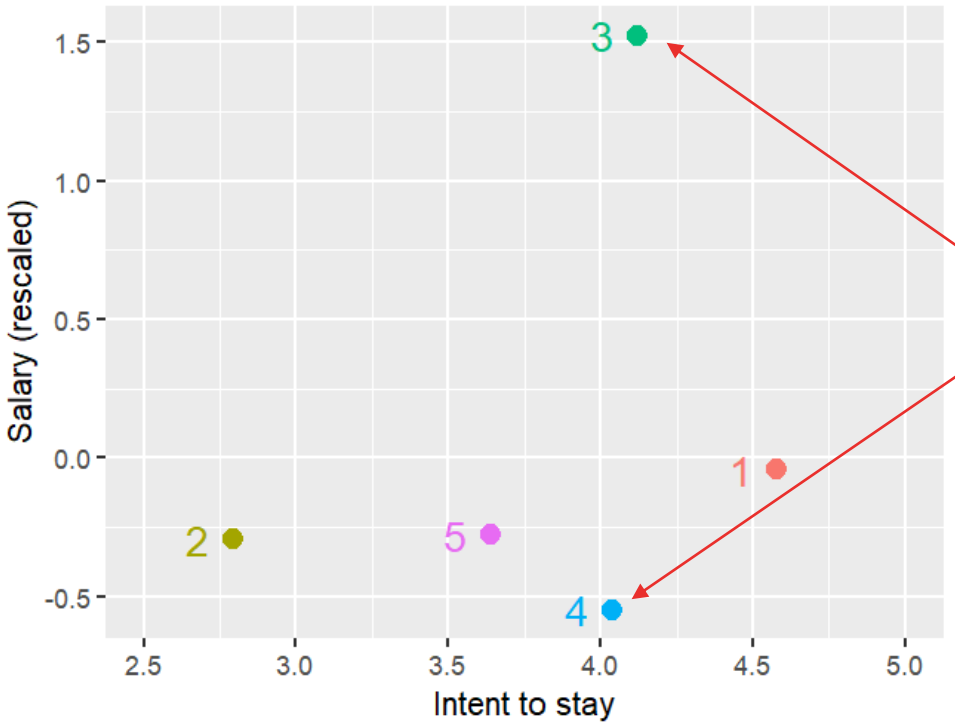




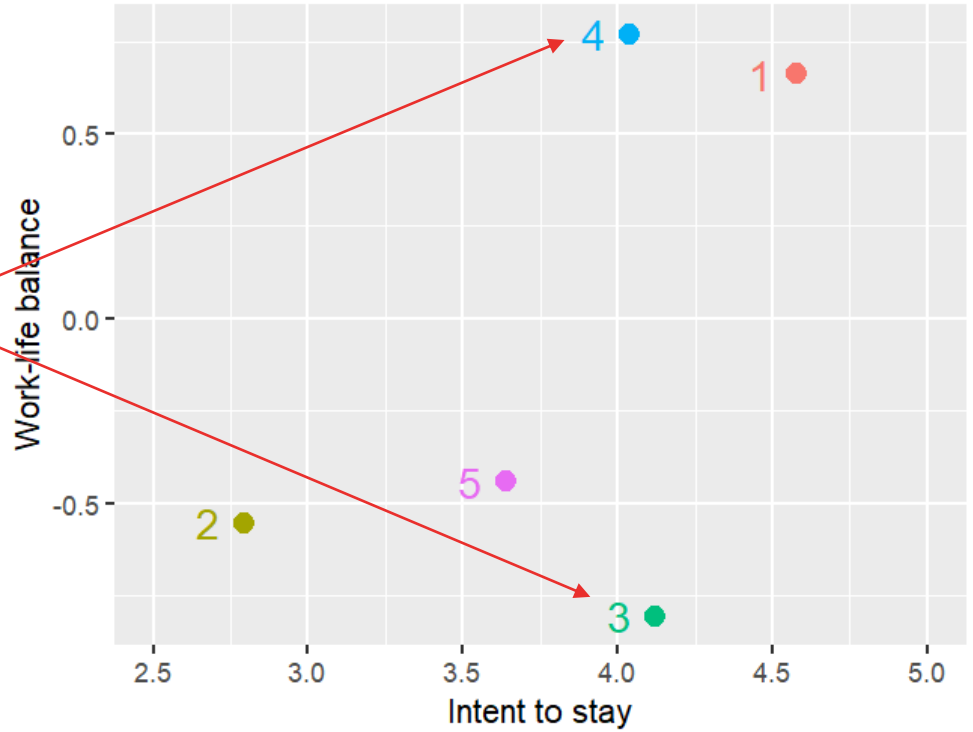
Profession	n	%
Physician	129	**61.4**
Pharmacist	24	**34.3**
…		
Intermediate care personnel	1	**1.8**
Medical assistant	0	**0**

Profession	n	%
Dietitian	26	**46.4**
Intermediate care personnel	19	**34.5**
…		
Pharmacist	8	**11.4**
Physician	9	**4.3**

Third cluster (n=260) vs. Fourth cluster (n=330)



Inverted



Profession	n	%
Physician	129	**61.4**
Pharmacist	24	**34.3**
…		
Intermediate care personnel	1	**1.8**
Medical assistant	0	**0**

Inverted

Profession	n	%
Dietitian	26	**46.4**
Intermediate care personnel	19	**34.5**
…		
Pharmacist	8	**11.4**
Physician	9	**4.3**

Fifth cluster (n=450) vs. Second cluster (n=221)

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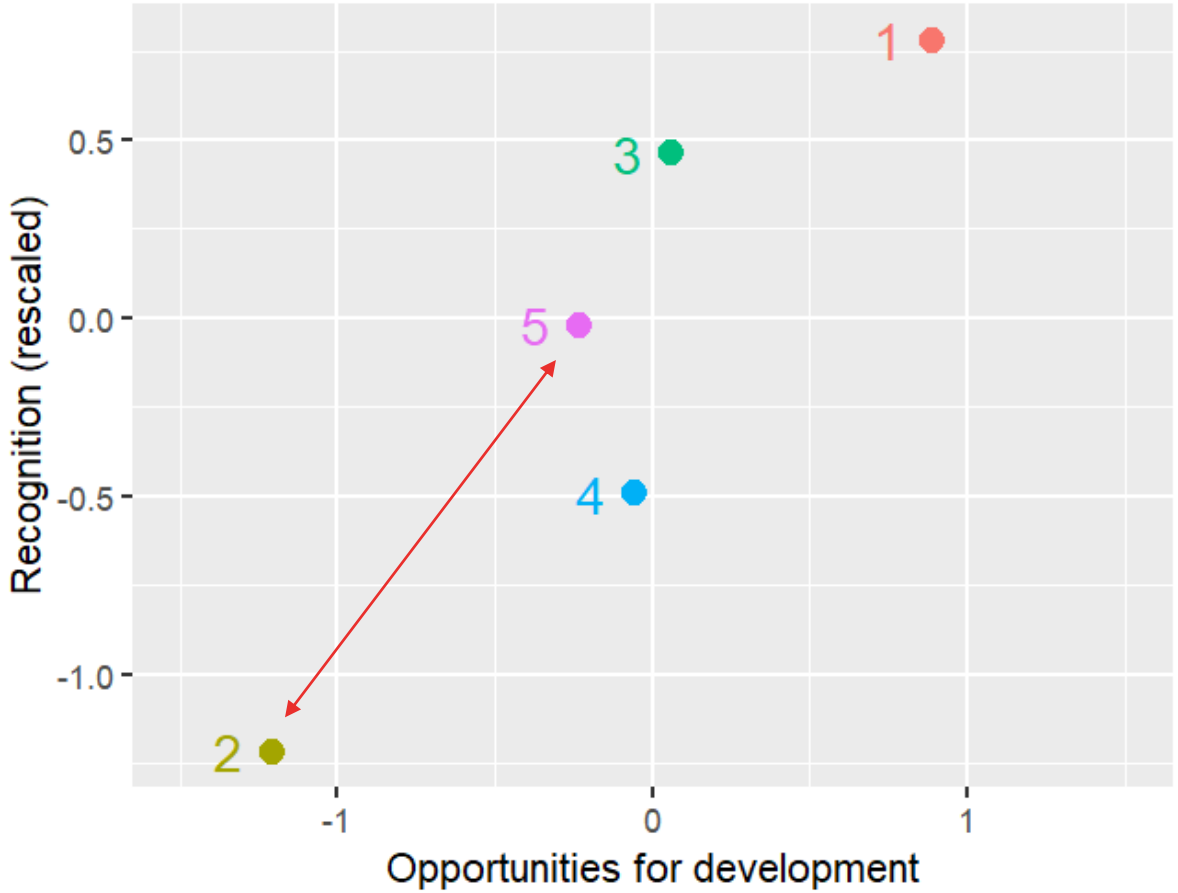
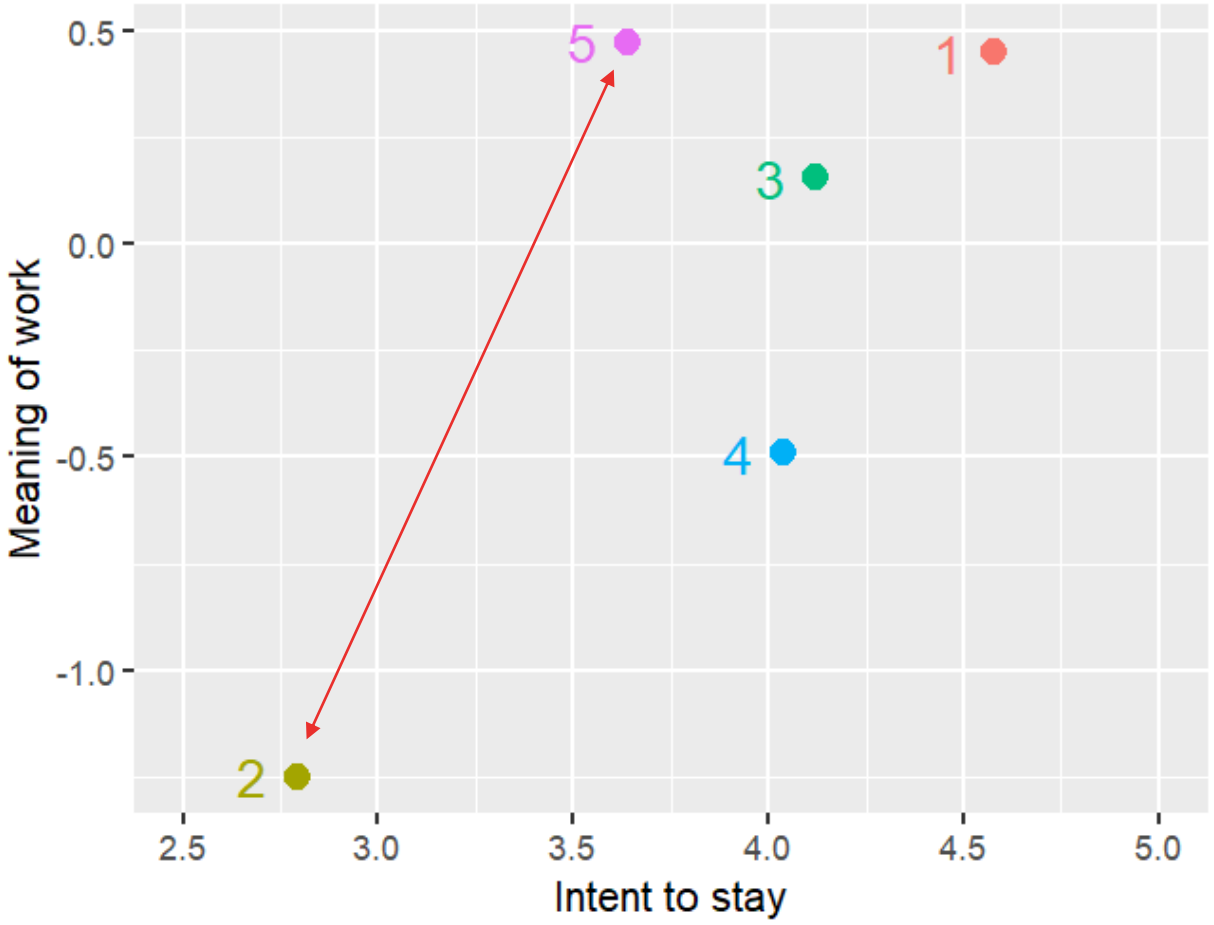
Fifth cluster (n=450) vs. Second cluster (n=221)



Fifth cluster vs. Second cluster (cont.)



Profession	n	%
Registered nurse	211	**38.9**
Intermediate care personnel	20	**36.4**
Advanced practice nurse	17	**27.4**
…		
Physician	25	**11.9**
Paramedic	7	**11.7**

Profession	n	%
Registered nurse	104	**19.2**
Medical assistant	13	**17.3**
Intermediate care personnel	7	**12.7**
…		
Occupational therapist	4	**4.5**
Paramedic	2	**3.3**

Clustering summary

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Cluster	1. (n=413)	2. (n=221)	3. (n=260)	4. (n=330)	5. (n=450)
Top 3 professions	Occup. Therapist Paramedic Physiotherapist	Regist. Nurse Medical Assistant Int. Caregiver	Physician Pharmacist Adv. Practice Nurse	Dietitian Int. Caregiver Paramedic	Regist. Nurse Int. Caregiver Adv. Practice Nurse
Bottom 3 professions	Int. Caregiver Physician Pharmacist	Paramedic Occup. Therapist Physiotherapist	Medical Assistant Int. Caregiver Dietitian	Physician Pharmacist Adv. Practice Nurse	Paramedic Physician Dietitian
Work-life balance	+	-	--	++	-
Development possibilities	++	--	+	-	+-
Meaning of work	++	--	+	-	++
Workload	++	--	-	++	--
Recognition	++	--	+-	+-	-
Salary	+-	-	++	--	-
Influence at work	++	--	+	-	-
Intent to stay	**4.6**	**2.79**	**4.1**	**4.06**	**3.58**

+ and – are based on the average scores for participants in the corresponding cluster (green represents the highest values, red the lowest).

Clustering main findings

- Cluster = sub-group of participants sharing similar work experiences.
- Five clusters ranging from very willing to stay in their profession to seriously thinking about leaving.
- The highest intent to stay cluster reported in average the lowest workload, the most opportunities for development, the most influence on work decisions and, in particular, the most recognition.
- Two middle clusters were opposite in terms of income and work-life balance but had the same intent to stay.
- The cluster with the worst intent to stay in the profession distinguished itself from the second worst cluster by finding less meaning in work. Both clusters contained high proportions of nurses and intermediate care personnel.

Discussion

Discussion (1)

- Seven factors have been identified as critical to keep Swiss healthcare professionals in their profession, regardless of the profession, the care setting or their professional status.
  - Work-life balance
  - Opportunities for development
  - Meaning of work
  - Reasonable workload
  - Recognition
  - Adequate remuneration
  - Influence on work decisions / autonomy

Discussion (1)

- Seven factors have been identified as critical to keep Swiss healthcare professionals in their profession, regardless of the profession, the care setting or their professional status.
  - Work-life balance → schedule flexibility
  - Opportunities for development
  - Meaning of work → link with quality of care
  - Reasonable workload → in line with working hours
  - Recognition
  - Adequate remuneration
  - Influence on work decisions / autonomy

From literature reviews

Courvoisier et al., *Déterminants de l'intention de rester dans leur profession ou à leur poste de professionnel·le·s des soins : revue de littérature.*

Roth et al., *Factors associated with intent to leave the profession for the allied health workforce: a rapid review.*

Sikka et al., *The Quadruple Aim: care, health, cost and meaning in work.*

Discussion (2)

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- Cluster analysis is above all an exploratory tool and we will have to see how it evolves when more participants are added.
- However, clusters were well-separated and seem to indicate a real structure in the data.
- An application could be to detect worrying patterns that may lead to healthcare professionals leaving the workforce.
- Similar analyses will be performed on other outcomes and subsets.

Limitations (working on it!)

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- Non-probability sampling
  - No nationwide data available on the HP population
- Under-represented groups
  - Limited sample size in some professional categories
  - Linguistic regions less represented
- Self-selection bias
  - Risk that people answering the questionnaire differ from those not-answering
- Self-reported data
  - Risk of recall and social desirability bias, which may lead to measurability bias

+ Risk of comparing what is not comparable

Next steps

Next steps

Healthcare professionals cohort

- Extended analyses
  - These results will be used to prepare qualitative interviews and focus groups, as well as stakeholder dialogues
  - Interaction models, structural equation modelling (SEM), longitudinal/trajectory analyses
- Further data collection
  - **First follow-up survey and new recruitment starting in October 2023**
- Data and results dissemination
  - Descriptive results will be available to the public on an interactive dashboard, available soon on www.scohpica.ch
  - Access to SCOHPICA data will be provided to researchers and policy makers, by making them available on a data repository

Upcoming conferences

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- *23 November 2023*

  René Schaffert (BB-Ges, ZHAW)

- *7 December 2023*

  Prof Hans Martin Hasselhorn (lidA-study, Universität Wuppertal)

More on www.scohpica.ch

MANY THANKS TO…

All participants who responded to the baseline survey

Our institutions and their communication services

- Unisanté
- Institut et Haute Ecole de la Santé La Source, HES-SO
- Centre hospitalier universitaire vaudois (CHUV)

All entities who supported the recruitment of participants

The first funding bodies: ASSM / SAMW; OFSP / BAG; OBSAN

All collaborators who have contributed to SCOHPICA

Thank you for your attention

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To contact us: **scohpica@unisante.ch**

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New recruitment and 1st follow-up starting soon!

From 1st of October 2023, participate on:

www.scohpica.ch