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The Size and Structure of the Swiss Occupational Therapy Workforce. A Survey Study

Anzahl und Struktur der Ergotherapie-Arbeitsplätze in der Schweiz: eine Online-Befragung

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Abstract

Background: As in other health professions, there is a shortage of skilled labour in the field of occupational therapy in Switzerland. To plan and implement effective measures to counter this shortage, empirical data on the size and structure of the Swiss occupational therapy workforce are needed.
Method: We conducted an online survey aimed at employers of occupational therapists, team leaders and self-employed occupational therapists in Switzerland. We collected data on the size and structure of the workforce in terms of sociodemographic characteristics, regional distribution, areas of work, and related topics. To analyse quantitative data, we used descriptive statistics and regression analysis. Qualitative data were narratively described.
Results: We collected data from 968 respondents pertaining to 3,022 Swiss occupational therapists, with a response rate of 73.6% for medical institutions and 58.2% for occupational therapists in private practice. Women make up 90.1% of the Swiss occupational therapy workforce. Swiss occupational therapists most often work with clients who have difficulties in connection with injuries or illnesses of the upper limbs, neurological illnesses or injuries, or challenges with mental health. The ratio of occupational therapists per 10,000 inhabitants in Switzerland is at least 3.2. Swiss occupational therapy provision is least dense in Central Switzerland. The average reported turnover rate among occupational therapy teams was calculated to be 20% (SD=27.9).
Conclusion: The results illustrate the persistent lack of gender diversity in the profession. They also show some disparities in geographical distribution and area of practice, which will be analysed in more detail in subsequent publications.

Abstract

Hintergrund: Wie in anderen Gesundheitsberufen besteht auch in der Ergotherapie in der Schweiz ein Fachkräftemangel. Um wirksame Maßnahmen dagegen planen und umsetzen zu können, braucht es empirische Daten über Anzahl und Struktur der Ergotherapie-Arbeitsplätze in der Schweiz. Methode: Wir haben eine Online-Befragung durchgeführt, die sich an Arbeitgeberinnen und -geber von Ergotherapeutinnen und -therapeuten, an Leitende von Ergotherapie-Teams sowie an selbständig tätige Ergotherapeutinnen und -therapeuten in der Schweiz richtete. Dabei erhoben wir Daten zu Anzahl und Struktur der Ergotherapie-Arbeitsplätze in Bezug auf soziodemografische Merkmale, regionale Verteilung, Arbeitsbereiche und verwandte Themen. Für die Analyse der quantitativen Daten wurden deskriptive Statistiken und eine Regressionsanalyse verwendet. Qualitative Daten wurden narrativ beschrieben. Ergebnisse: Wir haben Daten von 968 Befragten gesammelt, die 3'022 Schweizer Ergotherapeutinnen und -therapeuten betreffen. Die Rücklaufquote betrug 73,6 % für medizinische Institutionen und 58,2 % für ambulante Praxen. Ergotherapeutinnen und -therapeuten arbeiten am häufigsten mit Klientinnen und Klienten, die Schwierigkeiten im Zusammenhang mit Verletzungen oder Erkrankungen der oberen Gliedmaßen, neurologischen Erkrankungen oder Verletzungen sowie mit psychischen Erkrankungen haben. Der Frauenanteil beträgt 90,1 %. Basierend auf unseren Daten haben wir eine Versorgungsdichte von mindestens 3,2 Ergotherapeutinnen oder -therapeuten pro 10'000 Einwohner und Einwohnerinnen der Schweiz errechnet. Die geringste ergotherapeutische Versorgungsdichte fand sich in der Zentralschweiz. Die durchschnittliche gemeldete Fluktuationsrate pro Jahr in ergotherapeutischen Teams wurde mit 20 % (SD = 27,9) errechnet. Schlussfolgerung: Die Ergebnisse verdeutlichen den hartnäckigen Mangel an Diversität bezüglich Geschlecht im Ergotherapie-Beruf. Sie zeigen auch einige Unterschiede in der Versorgung in Bezug auf Geografie und Praxisbereiche auf, die in späteren Publikationen detaillierter analysiert werden sollen.

Keywords

Occupational Therapy – Shortage of Skilled Labour – Health Care Provision – Switzerland

Keywords

Ergotherapie – Fachkräftemangel – Gesundheitsversorgung – Schweiz

INTRODUCTION

In Switzerland, the shortage of skilled labour among health care professions is not just a looming threat, but a rapidly approaching reality (Rüesch et al., 2014). Demographic change and an associated rise in demand for health care services are likely to exacerbate this situation in the coming years (Bundesamt für Gesundheit BAG, 2019). The Federal Council's current health policy strategy has called for an increase in the number of health professionals being trained in Switzerland, but also for measures to increase job retention among professionals already practicing (Bundesamt für Gesundheit BAG, 2019).

Occupational therapy is no exception when it comes to this shortage of skilled health care labour (Rüesch et al., 2014). Knowledge about the current structure and size of the occupational therapy workforce in Switzerland is limited. The Swiss National Association of Occupational Therapists (EVS/ASE) included about 2,627 members in August 2022. However, occupational therapists (OTs) are not required to join the association, and only a limited number actually do, especially in the inpatient sector (EVS/ASE ErgotherapeutInnen-Verband Schweiz, 2022). Therefore, there is little empirical data on the actual size of the workforce, its geographical distribution, or its sociodemographic make-up.

There is also little empirical information on how many OTs work in different fields of practice. OTs treat a wide range of clients of all ages who "temporarily or permanently, due to accident, physical or mental illness or disability, psychosocial or developmental disorders, or environmental conditions are impaired or threatened by impairment in their independent living" (EVS/ASE & CESET Comité des Écoles Suisses d'Ergothérapie/ ASSET Arbeitsgemeinschaft Schweizerischer Schulen für Ergotherapie/CSSET Comunità di lavoro delle Scuole Svizzere di Ergoterapia, 2005, p. 10, translation by author). We do not know if staff shortages are more pronounced in certain geographical areas or fields of practice.

In 2020, the World Federation of Occupational Therapists (WFOT) published the most recent figures on the global occupational therapy workforce. In their estimation, there are on average two OTs per every 10,000 people worldwide, with Denmark having the highest ratio of 22 per 10,000, and Tanzania having the lowest ratio of the countries, surveying at 0.001 per 10,000 (WFOT, 2020). The data they collected further indicates that 89% of the global occupational therapy workforce are women, that the fields of practice with the highest shortages of OTs are mental health, dementia, and stroke rehabilitation, and that the most important factors affecting OTs' careers are wage disparities, the limited appeal of certain geographic locations, and a lack of career advancement and available positions (WFOT, 2020). The quality of this data, however, is somewhat unclear, as some of it is apparently based on estimation rather than empirical figures. There are also large differences between different countries that preclude drawing conclusions regarding the Swiss context.

While there is a federal registry of health professions that includes OTs (*Gesundheitsberuferegister*), this does not include all occupational therapists working as employees in inpatient settings. OTs are also not removed from the registry when they retire, or leave the profession for other reasons (S. Tanner, personal communication, 31.10.2022), which makes it unsuitable as a reference for the current size and structure of the OT workforce.

In planning and implementing effective countermeasures for OT staff shortages in Switzerland, empirical data on the size and structure of the Swiss occupational therapy workforce are an important basis. The Foundation for Occupational Therapy (*Stiftung für Ergotherapie*) has funded a research study to look into these matters, involving all three Swiss universities that provide bachelor's and master's degree programs in occupational therapy (ZHAW Zurich University of Applied Sciences, HES-SO University of Applied Sciences and Arts Western Switzerland, and SUPSI University of Applied Sciences and Arts of Southern Switzerland) as well as the EVS/ASE. The aim of this study was to collect data on the size and the structure of the Swiss occupational therapy workforce – its sociodemographic make-up, geographic distribution, and fields of practice. A secondary aim was to examine the characteristics (e.g., size, mean age, mean educational status) of OT teams that influence their turnover rates. The main explicit research questions were as follows:

- What is the sociodemographic make-up of the Swiss OT workforce in terms of age, gender, and level of education?
- What is the structure of the Swiss OT workforce in terms of independent practice and institutions, geographical distribution (i.e., rate of OTs per 10,000 inhabitants), fields of practice, and percentage of employment?
- How many Swiss OT positions are unfilled, what is the mean turnover rate, and what characteristics of a team (gender composition, mean age, setting, size of the team, mean percentage of employment) influence this turnover rate?
- Is the current situation regarding continuing education opportunities for OTs seen as sufficient?

METHOD

We determined that the best way to achieve the study's aims was to conduct a cross-sectional survey among Swiss OTs. The project team, which was made up of researchers from every Swiss university of applied sciences with an occupational therapy research unit,

as well as representatives of the EVS/ASE and the Foundation for Occupational Therapy, defined the areas of interest for the survey in a meeting in April 2019. These areas included *sociodemographic characteristics of the workforce*, *regional distribution*, *areas of work*, *levels of professional education*, *levels of full-time or part-time work*, *sources of funding*, *turnover rates*, *number of open positions*, *common difficulties when hiring personnel*, and *satisfaction with opportunities for further professional education*. Due to the nature of some of the questions and the fact that not all OTs are affiliated with the professional association (EVS/ASE, 2022), especially in the institutional sector, it was decided that the survey would be best directed towards employers and team leaders, as well as self-employed OTs. It was expected that the maximum number of OTs could be reached in this way.

The inclusion criteria were therefore defined as: a) being a self-employed OT with or without employees; b) being an OT in a leadership position overseeing other OTs; or c) being a non-OT in a leadership position overseeing OTs – a and b not being mutually exclusive.

Development of questionnaire

Based on these areas of interest, we drafted a questionnaire in German. Questions were partially based on other questionnaires addressed to health professionals (Bundesamt für Statistik, 2018; Nast et al., 2017; Peter et al., 2017). Following feedback and discussion within the project group, the questionnaire was finalised and professionally translated into French and Italian. The questionnaire consisted of a maximum of 70 questions, which were filtered throughout the survey according to the respondents' answers, covering the areas described in the preceding section. Questions were mostly closed-ended, but there were also open-ended questions. Based on the feedback from the testers of the questionnaire (see below), the survey required between 15 and 30 minutes to complete.

We then created an online version of the questionnaire using the online survey platform *Enterprise Feedback Suite* (Tivian XI GmbH, 2021). This platform allows for the creation and testing of surveys and generates online links where the surveys can be accessed. A data centre situated in Germany hosts the platform, which is certified by the German Federal Cyber Security Authority BSI, and compliant with the ISO 27001 data safety and protection regulations (Tivian XI GmbH, 2022). The platform does not allow for the survey to be filled out multiple times from the same IP address unless cookies are erased. The online questionnaire was tested in each language by multiple OTs from different professional and geographic backgrounds. We then integrated the testers' feedback into the finished version of the online survey.

Data Collection

In October 2021, we sent out a link and invitation to the online questionnaire through multiple channels. The EVS/ASE contacted self-employed OTs and owners of private practices, almost all of whom are members of the Swiss professional association, via e-mail (n=1,310). Contact information from other institutions possibly employing OTs was collected by members of the project team based on publicly available information. These mainly included medical institutions (e.g., hospitals, rehabilitation clinics, and psychiatric institutions), but also schools, insurance companies, public administration, NGOs, and universities. These institutions were also contacted via e-mail. After three weeks, reminder e-mails were sent out. To further encourage participation, medical institutions were contacted by telephone in early 2022, leading to the exclusion of some who explicitly stated that they did not employ OTs. In the end, 216 medical institutions remained that potentially employed OTs. The survey was closed in April 2022 and the data were extracted.

Unfortunately, it was not possible to collect data on OTs working in long-term care institutions; despite repeated efforts, the research team was not able to secure the cooperation of key gatekeepers in this area.

Data analysis

The data was analysed using SPSS Version 28. To analyse the quantitative data, we mainly used descriptive statistics, including frequency distributions, means, and standard deviations. We also performed a regression analysis, with the dependent variable being turnover rate within teams and the independent variables being demographic characteristics of these teams (e.g., gender and age distribution, mean education level). We described the qualitative data narratively, including answers to open questions, where there was an "other" option where respondents could elaborate, and respondents' views on the situation regarding continuing education opportunities.

RESULTS

A total of 968 eligible respondents completed the survey, 866 of which were OTs and 102 of which were not OTs, but supervised them in leadership roles. Of the 866 OTs, 590 were self-employed independent OTs without employees, and 291 were OTs in a leadership position (among these numbers, 15 individuals fulfilled both these roles, coming to a total of 866 responding OTs). Respondents provided data on 2,156 employed OTs. All in all, we collected data on 3,022 Swiss OTs. The number of OT positions, however, is somewhat higher (n=3,345). This is attributed to differences in response

behaviour among respondents (not all respondents answered all questions), as well as the fact that some OTs hold multiple part-time positions – for instance, an OT might be employee in an institution *and* a self-employed therapist. The response rate was 73.6% for medical institutions and 58.2% for OTs in private practice (with or without employees). For the other categories, no response rate could be determined (see Table 1).

Table 1: Survey response rate across different institutions.

Category	Contacted	Responded	Response rate
Medical Institutions	216	159	73.6%
Self-employed OTs and Private Practices	1310	762	58.2%
Others (e.g., NGOs, Schools)	N/A	80	N/A
	N/A	968*	N/A

Notes: The category Others covers a large range of different institutions that were contacted in an effort to find OTs in non-traditional work roles. As most of these institutions presumably do not employ OTs, calculating a total response rate is not meaningful. Also, because some respondents hold multiple roles, the true total is somewhat lower than adding up the categories here would suggest.

Sociodemographic make-up of the Swiss OT workforce

Among self-employed independent OTs without employees and employed or self-employed OTs in leadership positions, the mean age was 48.1 years (SD=9.6). Mean degree of employment (with 100% being full-time equivalent) was 74.3% (SD=22.4), and mean work experience was 20.8 years (SD=9.3). In these groups, average degree of employment (full-time equivalent) was 82.3% (SD=23.0) for men and 73.4% (SD=22.2) for women.

Among employed OTs not in leadership positions, about 27.3% were younger than 30, 55.8% were between 30 and 49, and 17% were older than 50. Their mean degree of employment was 65.2% (SD=17.4). Across all categories, the mean degree of employment was 67.9%.

The data do not allow a comparison of genders amongst all OTs. Of all OTs, 90.1% identified as women, 9.7% as men, and 0.2% as another gender. Self-employed independent OTs without employees had a smaller proportion of men (5.1%), while OTs in a leadership position had a larger one (15.5%). A total of 61.5% of all OTs were from the German-speaking region of Switzerland, 34.5% were from the French-speaking region, and 4% were from the Italian-speaking region. A total of 65.5% had completed their education in Switzerland, and 21.5% had completed some type of academic further education (CAS, DAS, MAS, or MBA). Only 2.8% had completed an MSc in Occupational Therapy, and only 0.1% had completed doctoral degrees (see Tables 2a and 2b).

Structure of the Swiss OT workforce

Based solely on our data, a ratio of 3.2 OTs per 10,000 inhabitants can be calculated for Switzerland as a whole. This figure only includes OTs working in traditional health care (i.e., medical institutions and private practices) and school settings (n=2,799) and is based on the 2021 Swiss population of 8.7 million. The rate of non-response, however, means this is an underestimation of the real ratio. Additionally, as we mentioned, we were not able to reach OTs employed by long-term care institutions.

There are significant regional differences regarding this ratio. A relatively high OT-per-capita ratio was found in the north- and southwestern regions of Switzerland. The OT-per-capita ratio is at its lowest in central Switzerland (see figure 1). For 17.8% of OTs in traditional curative health care and school settings (n=497), no data on their region was available. Of all OTs identified, 546 (16.3%) worked in other settings – for instance, in education, research, or the NGO sector (see figure 2).

OTs most often worked with clients who had difficulties in connection with injuries or illnesses of the upper limbs, neurological illnesses or injuries, and/or mental health challenges (see Figure 3). A total of 767 respondents provided information on how OT services were compensated. Financing was provided through compulsory health insurance (KVG/LAMal) for 67.7% of respondents, invalidity insurance (IV/AI) for 15.9%, and accident insurance (UVG/LAA) for 14.3% (see also figure 4).

Unfilled OT positions and turnover rates

A total of 320 respondents reported how many OTs had joined and/or left their institution or practice in the last 12 months. 54.7% (n=175) reported one or more OTs leaving, with a total of 353 people, while 67.5% (n=216) reported that they had hired one or more OTs in the past year, with a total of 429 people. This corresponds to a net workforce growth of 76 OT positions in 12 months – 2.5% of the number of OTs surveyed.

The average turnover rate for responding institutions (n=318) was calculated as 20.0% (SD=27.9). The median of reported turnover rates was at 9.6%, with the 25th percentile at 0% and the 75th percentile at 30.8%. Almost half the institutions (n=143) reported a turnover rate of 0%, largely explaining this extremely skewed distribution.

A linear regression involving characteristics of OT teams revealed two main predictor variables for this turnover rate. The first predictor variable was the size of the team, which was highly significant (R^2=-0.04, SE=0.02, t=-

Table 2: Baseline characteristics of OTs (general demographics).

Baseline characteristic	Self-employed OTs without employees		OTs in leadership positions		OT employees		Total	
	n	%	n	%	n	%	n	%
Gender								
Female	558	*94.6*	246	*84.5*	1,933	*89.7*	2,724	*90.1*
Male	30	*5.1*	45	*15.5*	220	*10.2*	293	*9.7*
Other	2	*0.3*	-	-	3	*0.1*	5	*0.2*
Total	**590**	***100.0***	**291**	***100.0***	**2,156**	***100.0***	**3,022**	***100.0***
Age								
under 30					592	*27.3*	592	*27.3*
30-39					777	*35.8*	777	*35.8*
40-49					434	*20.0*	434	*20.0*
50-59	*See Table 1b*				300	*13.8*	300	*13.8*
over 60					69	*3.2*	69	*3.2*
Total					**2,172**	***100.0***	**2,172**	***100.0***
Language region								
German	334	*56.6*	187	*64.3*	1,334	*62.7*	1,842	*61.5*
French	236	*40.0*	92	*31.6*	706	*33.2*	1,032	*34.5*
Italian	20	*3.4*	12	*4.1*	88	*4.1*	120	*4*
Total	**590**	***100.0***	**291**	***100.0***	**2,128**	***100.0***	**2,994**	***100.0***
Education								
Diploma HF/ES/SSS	187	*33.6*	62	*22.3*	410	*22.6*	658	*30.3*
Diploma FH/HES/SUP	232	*41.7*	102	*36.7*	576	*31.8*	902	*39.8*
BSc in Occupational Therapy	90	*16.2*	76	*27.3*	730	*40.2*	891	*19.7*
MSc in Occupational Therapy	11	*2.0*	12	*4.3*	48	*2.6*	71	*2.8*
MSc, Other	9	*1.6*	8	*2.9*	16	*0.9*	33	*2.1*
PhD	-	-	1	*.4*	3	*0.2*	4	*0.1*
Other	28	*5.0*	17	*6.1*	31	*1.7*	75	*5.4*
Total	**556**	***100.0***	**278**	***100.0***	**1,814**	***100.0***	**2,633**	***100.0***
Country of education								
Switzerland	441	*73.8*	184	*66.2*	1,209	*63.1*	1,792	*65.5*
Germany	77	*13.8*	45	*16.2*	326	*17.0*	446	*16.3*
France	23	*4.1*	17	*6.1*	179	*9.3*	219	*8.0*
Italy	2	*0.4*	1	*0.4*	35	*1.8*	38	*1.4*
Austria	15	*2.7*	12	*4.3*	30	*1.6*	57	*2.1*
Belgium	12	*2.2*	8	*2.9*	57	*3.0*	76	*2.8*
Netherlands	6	*1.1*	4	*1.4*	20	*1.0*	30	*1.1*
Other	11	*2.0*	7	*2.5*	59	*3.1*	77	*2.8*
Total	**557**	***100.0***	**278**	***100.0***	**1,915**	***100.0***	**2,735**	***100.0***
Academic further education								
CAS	138	*24.6*	101	*34.7*	225	*12.4*	464	*17.4*
DAS	15	*2.7*	14	*4.8*	6	*0.3*	35	*1.3*
MAS	8	*1.4*	26	*8.9*	36	*2.0*	70	*2.6*
MBA	1	*0.2*	1	*0.3*	1	*0.1*	3	*0.1*
None	399	*71.3*	149	*51.2*	1,546	*85.2*	2,094	*78.5*
Total	**561**	***100.0***	**291**	***100.0***	**1,814**	***100.0***	**2,666**	***100.0***
Currently pursuing (further) education								
MSc	2	0.4	9	3.2	36	2.0	47	1.8
PhD	3	0.5	2	0.7	0	0.0	5	0.2
CAS	15	2.7	22	7.9	70	3.9	107	4.0
DAS	2	0.4	1	0.4	0	0.0	3	0.1
MAS	8	1.4	5	1.8	6	0.3	19	0.7
MBA	-	-	2	0.7	0	0.0	2	0.1
Other	18	3.2	11	4.0	38	2.1	67	2.5
Total	**560**	**100.0**	**278**	**100.0**	**1,814**	**100.0**	**2,666**	**100.0**
Currently pursuing an academic career	10	1.8	13	4.7	25	1.4	48	1.8
Total	**560**	**100.0**	**278**	**100.0**	**1,814**	**100.0**	**2,666**	**100.0**
Planning an academic career	5	0.9	9	3.2	k.A.	k.A.	14	1.7
Total	**560**	**100.0**	**278**	**100.0**			**822**	**100.0**
Management level								
Lower management	-	-	163	59.0	-	-	163	59.0
Middle management	-	-	48	17.4	-	-	48	17.4
Upper management	-	-	57	20.7	-	-	57	20.7
Total	-	-	**276**	**100.0**	-	-	**276**	**100.0**

Note: CAS = Certificate of Advanced Studies; DAS = Diploma of Advanced Studies; ES = école superieure; FH = Fachhochschule; HF = Höhere Fachschule; HES = haute école specialisée; MAS = Master of Advanced Studies; MBA = Master of Business Administration; MSc = Master of Science; PhD = Doctor of Philosophy; SSS = scuola specializzata superiore; SUP = Scuola universitaria professionale.

Table 2b: Baseline characteristics of self-employed OTs and OTs in a leadership position (employment-related data).

Baseline characteristic	Self-employed OTs without employees				OTs in leadership positions				Total			
	mean	SD	range	n	mean	SD	range	n	mean	SD	range	n
Age in years	**49.1**	9.5	25 – 79	590	**46.0**	9.3	28 – 68	291	**48.1**	9.6	25 – 79	866
Work experience in years	**21.5**	9.4	1.5 – 53	590	**19.3**	8.9	2.9 – 43.3	291	**20.8**	9.3	1.5 – 53	866
Percentage of FTE	**71.5**	23.4	10 – 150	496	**80.3**	18.8	20 – 120	259	**74.3**	22.4	10 – 150	740

Note: FTE = full-time equivalent (a workload of 42.5 hours per week)

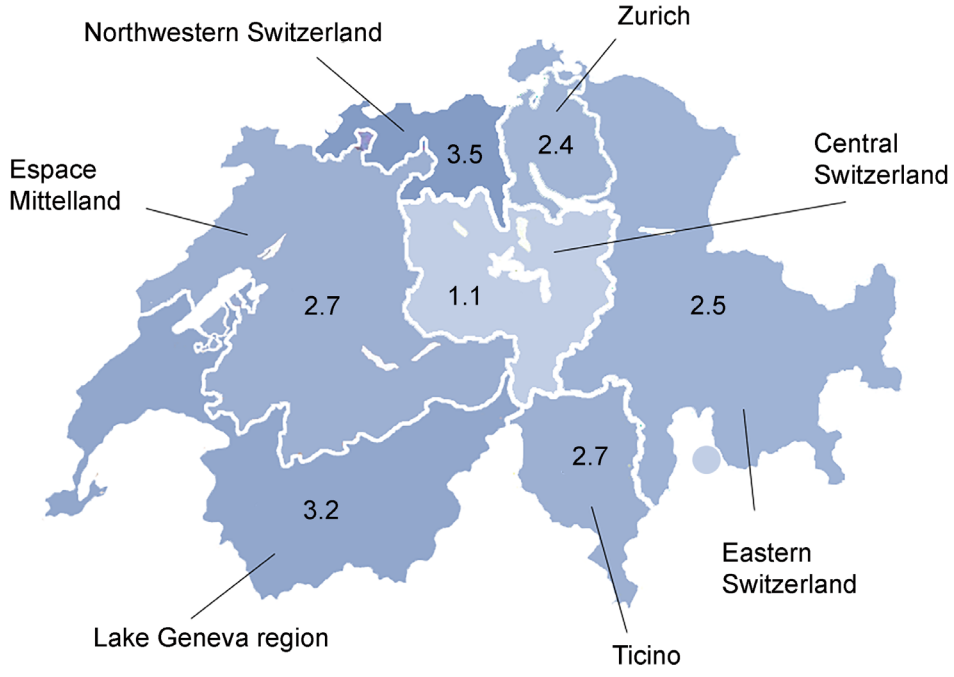

Figure 1: Ratios of OTs (n=2,799) per 10,000 inhabitants by Swiss region based solely on the collected data. Due to non-response, this is an underestimation of the real ratios.

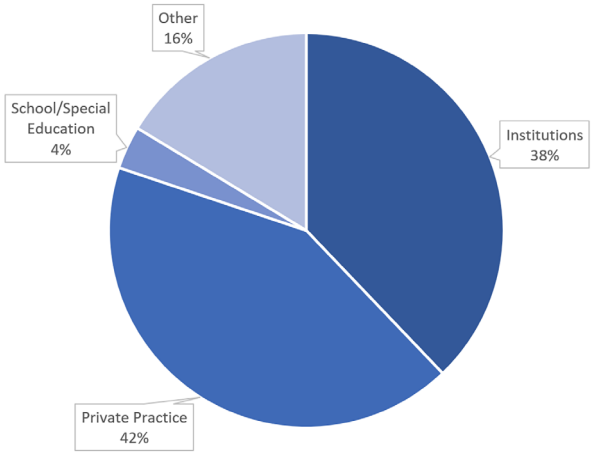

Figure 2: Swiss occupational therapy job positions by work setting (n=3,345).

2.8, p<0.01). Larger teams had lower turnover rates. The second predictor variable was the mean age of the team (R^2=-0.04, SE=0.01, t=-3.3, p<0.01). Teams with a higher mean age also had lower turnover rates.

A total of 326 respondents reported on whether they had unfilled OT positions in their institution or practice. For respondents who reported unfilled positions (45.1%, n=147), the mean unfilled percentage was 92.8% full-time equivalent (SD=84.2, range 10 – 550) – in other words, almost one entire full-time position. While we collected data on the equivalent of 1,840.8 full-time positions, the equivalent of 126.2 full-time positions (a quota of 6.4%) remained unfilled.

Difficulties filling open positions were discussed by 305 respondents. A total of 77% (n=235) reported a lack of applicants. Other frequent explanations were a lack of

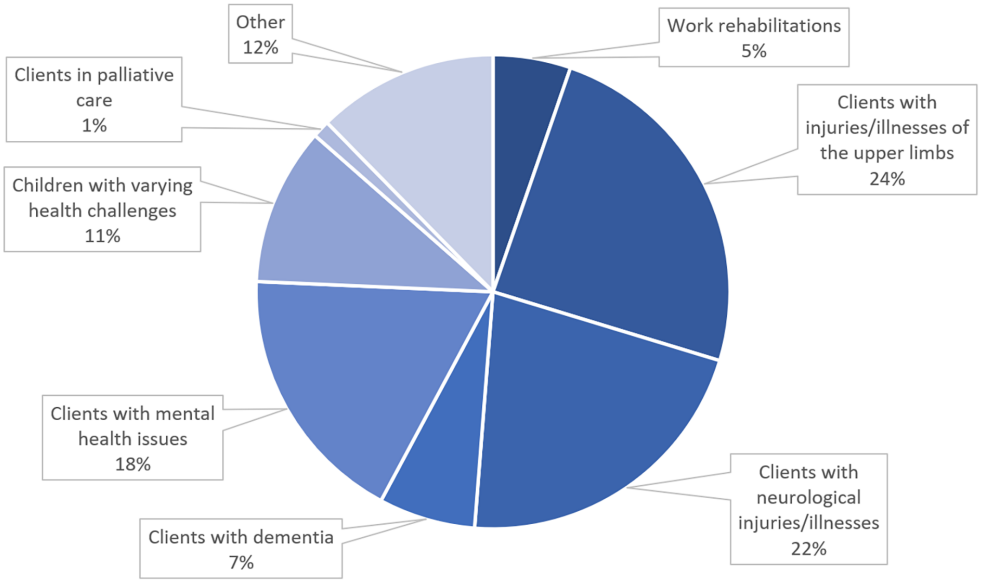

Figure 3: Percentage of OTs working with clients with different challenges.

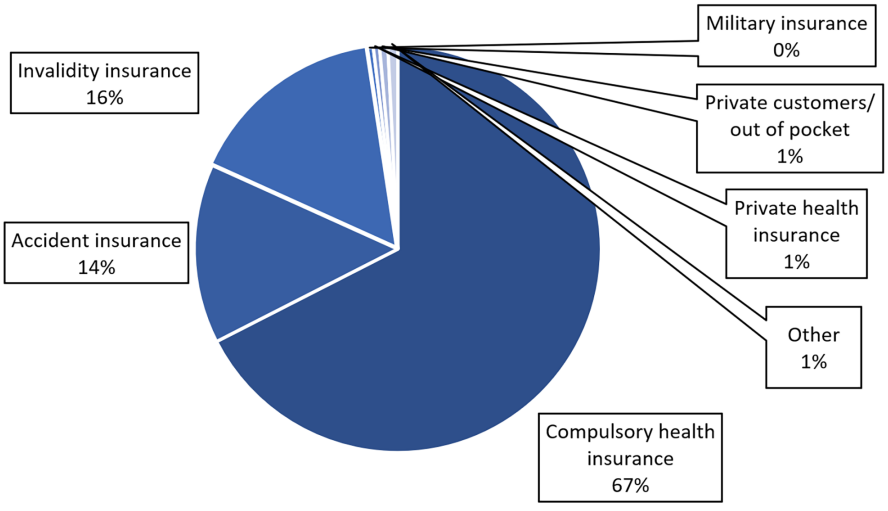

Figure 4: Financing bodies for OT service remuneration in Switzerland.

experience (38.7%, n=118), education (35.1%, n=107), or professional specialization (26.2%, n=80) among applicants. Only 17% (n=52) reported they had trouble finding applicants that were willing to work at higher work percentages.

Continuing education opportunities

Another 305 respondents commented on the current status of continuing education opportunities in OT. A total of 87.5% stated that funds are allotted to course fees for continuing education in their institution or private practice, and 91.1% stated that their continuing education time was partially or fully paid. However, 31.8% (n=97) of respondents did not believe that the existing opportunities for professional education were sufficient. When asked about the topics of continuing education that they would like to see more of, there was a very wide range of answers, with no topics that stood out specifically. Topics ranged from palliative care, to oncological rehabilitation, to the therapeutic use of Qi-Gong.

DISCUSSION

The aim of this study was to collect data on the size and structure of the Swiss occupational therapy workforce in terms of sociodemographic make-up, geographic distribution, and field of practice. In terms of gender,

our results were unsurprising. Of the Swiss occupational therapy workforce, 90.1% are women. This closely corresponds to recent WFOT global numbers of 89% (2020), and one of our previous studies, in which 94.1% of the responding OTs were women (Klamroth-Marganska et al., 2021). Switzerland has the highest ratio of women compared to all of its bordering countries, with Germany at 86% (Deutscher Verband der Ergotherapeuten, 2017), France at 87% (Association Nationale Française des Ergothérapeutes, 2022), Italy at 70%, and Austria at 80% (WFOT, 2020). This is also mirrored in the proportion of female Swiss OT students, which in the last ten years has fluctuated between 88.5% and 92.6%, without a clear upward or downward trend (Bundesamt für Statistik, 2022d). This exceeds the percentage of women in nursing (86%) and physiotherapy (73%) in Switzerland (Merçay et al., 2021; Nast et al., 2017), revealing a persistent lack of gender diversity.

There are differences between self-employed independent OTs without employees, where the percentage of men is only 5.1%, and OTs in leadership positions, where men make up 15.5%. The latter reflects a larger societal imbalance, with 29.7% of the general Swiss male workforce in leadership positions, as opposed to only 18.7% of the Swiss female workforce (Bundesamt für Statistik, 2022a). The homogeneity of the Swiss OT workforce seems problematic, not only because it deprives the professional culture of a beneficially broader range of experiences and viewpoints (Taff & Blash, 2017), but also since there are some data that suggest that there is a greater deficit of skilled labour in highly gendered professions (see e.g., Hickmann & Koneberg, 2022).

The age range of the workforce corresponds with data we have previously collected. While self-employed OTs and OTs in leadership positions have a relatively high average age of 48.1 years (SD=9.6), two-thirds of employed OTs are younger than 40. This is roughly comparable to a mixed sample we surveyed in an earlier study (Klamroth-Marganska et al., 2021) where the average age was 44.7 years (SD=10.6). All in all, the results are also similar to the average age of Swiss physiotherapists, which Nast et al. (2017) calculated to be 45 years. The Swiss State Secretariat for Economic Affairs SECO (2016) found that 33% of all health professionals are 50 years or older, a larger proportion than the 30% among the general workforce. This indicates a greater need for additional persons entering the workforce in the near future. Our dataset, however, finds only 25% of OTs to be 50 years old and older, which is below the average rate reported by the SECO (2016). However, among self-employed OTs without employees, the percentage of persons 50 years old or older was exceptionally high, at 50%. This is partially explained by OTs often becoming self-employed later in life, when they have gathered some professional experience.

The distribution of linguistic regions within our data set was 61.5% German-speaking, 34.5% French-speaking, and 4% Italian-speaking. This is similar to the distribution (based on their home canton's main language) among EVS/ASE members: 64.9%, 28.4%, and 5.5%, respectively (EVS/ASE, 2022). It is also similar to the language distribution in the Swiss population on the whole: 62.3%, 22.8%, and 8%, respectively (Bundesamt für Statistik, 2022b). These existing findings strengthen the potential credibility of our data.

The percentage of OTs who completed their education in Switzerland is 65.5%. Among EVS/ASE members, this percentage is higher, at 76.7%. Although this is not a perfect measure of work migration, it indicates that about a third of the Swiss OT workforce has a migrant background. The percentage of all OTs who have completed the equivalent of a bachelor's degree or higher is 64.5%, similar to 62.5% of physiotherapists. However, only 2.8% have completed an MSc in occupational therapy, while 6.8% of physiotherapists have completed an MSc. This may create a disadvantage for OTs' career prospects, as some specialized and/or leadership positions require an MSc. MSc or MAS degrees are also likely to be a requirement for Advanced Practice in Occupational Therapy (APOT) roles, which are expected to become more important in the coming years (Nacke et al., 2019). Only 0.1% of Swiss OTs have completed a PhD, as opposed to 0.5% of Swiss physiotherapists (Nast et al., 2017). Creating more adequately-compensated career opportunities – in APOT, for instance – for OTs with a MSc, MAS, or PhD education may not only motivate more OTs to pursue these programs, but also make the profession more attractive to young people entering the workforce.

The mean degree of employment of Swiss OTs was 67.9% full-time equivalent, or 28.9 hours per week. This figure is very similar in Germany, where OTs work 27 hours per week on average (Deutscher Verband der Ergotherapeuten, 2017). It also resembles the figure for Swiss non-physician health professionals working in hospitals, who in 2019 had a mean degree of employment of 69.3% (Merçay et al., 2021). There is a gender-specific difference that we were able to illustrate among self-employed OTs without employees and OTs in leadership positions. Swiss women are more likely to find themselves in precarious financial situations after retirement, as they are more likely to have worked part-time and consequentially received lower pension benefits (Pilgram & Seifert, 2009). Another reason for this is that Swiss pensions are partially based on contributions that are proportionally related to income.

In a number of surveys of 273,096 members of the general Swiss population between 2010 and 2015, one-

third of women working part-time did so because they were also taking care of children (Abrahamsen et al., 2017). Creating an environment that supports women in taking on higher degrees of employment – for instance, by improving access to affordable childcare – could not only improve their financial security after retirement, but also counter workforce shortages.

Merçay et al. (2021)'s study of Swiss hospitals (2021) counted 1,501 OTs working in medical institutions as of 2019. Considering the non-response rate of 26.4% that we saw among medical institutions, our count of 1,267 OTs in this setting seems reasonable. We calculated a ratio of OTs per 10,000 inhabitants of 3.2, which is an underestimation of the real ratio due to a non-response rate of 26.4% to 41.8% from medical institutions and private practices, respectively. The actual ratio is likely to be between 4.3 and 5.5 per 10,000 inhabitants. Even taking into account the non-response rate, this ratio is still lower than in Germany, which has a reported rate of 7.3 OTs per 10,000 inhabitants (Council of Occupational Therapists for European Countries, 2022), but it is markedly higher than in France or Italy, which have respective reported ratios of between 2.1 and 2.2, depending on the source, and 0.4 OTs per 10,000 inhabitants (Association Nationale Française des Ergothérapeutes, 2022; COTEC, 2022).

Among neighbouring countries, the Swiss ratio most closely resembles the situation in Austria, where there are 4.8 OTs per 10,000 inhabitants (COTEC, 2022). To add some context, all these figures are still markedly lower than the rates in Nordic countries like Denmark (22 OTs per 10,000), Sweden (12 OTs per 10,000), or Norway (9 OTs per 10,000). The cantonal distribution we outlined may be subject to some irregularities due to varying response rates. However, if we compare the 10 cantons where we found the most OTs with the 10 cantons having the most EVS/ASE-members, nine out of 10 are the same, adding to our data's plausibility (EVS/ASE, 2022).

While there seems to be a net growth in the workforce, almost half of the responding institutions or private practices had unfilled OT positions at the time of the survey. We identified a quota of 6.4 unfilled full-time-equivalent OT positions, which is in stark contrast to the quota of 0.9 identified by the Swiss State Secretariat for Economic Affairs SECO (2016) and more than triple the general quota of open job positions in Switzerland, which was 1.9 during the fourth quarter of 2021, which was main period of our survey (Bundesamt für Statistik, 2022c).

Respondents who commented on their difficulties filling open OT positions most often cited a lack of applicants, which is unsurprising considering the quota of open positions we have calculated. Factors leading to this staff shortage are likely a rising demand for OT services (for instance, due to demographic change), and an unknown number of OTs leaving the profession before retirement. We do not know the extent of these factors, however, or the reasons OTs prematurely leave the profession.

Limitations

Our study has some limitations. While we were able to achieve a good response rate, medical institutions and private practices had non-response rates of 26.4% and 41.8%, respectively. We cannot be completely sure if the results for these non-respondents would be similar. Also, we were not able to collect data on OTs working in long-term care institutions. While collecting data from employers and team leaders allowed us to reach a larger number of OTs not affiliated with the EVS/ASE, this is a type of proxy-report that introduces more uncertainty than if the OTs had been surveyed directly.

CONCLUSION

We have collected the first comprehensive data set on the size and structure of the Swiss occupational therapy workforce in terms of its sociodemographic make-up, geographic distribution, and fields of practice. The availability of data like this is crucial for planning and implementation of effective measures to counter skilled-labour shortages in any profession (Dolder, 2010; Rüesch et al., 2014). We have confirmed that there is a profound and persistent lack of gender diversity in occupational therapy exceeding that in other health professions, and that there is a low mean degree of employment, consistent with the situation in other health professions. We have also shown that the number of OTs who pursue an MAS or MSc is still small compared to other health professions. These findings raise certain questions: How can we achieve greater gender diversity in the workforce? How can we generate an environment where women are likely to work at higher degrees of employment? Lastly, how do we facilitate further education of OTs? Other questions that remain open are the number of OTs who leave the profession prematurely, their reasons for doing so, and possible measures that could keep them in the field. Also, while the rate of OTs per 10,000 inhabitants is an important indicator of health-care service density, other indicators, like the number of clients that are on waiting lists to receive OT services, or the time they have to wait to receive these services, would allow for a more well-rounded picture of OT provision in Switzerland.

We have also shown that occupational therapy seems to be less widely accessible in Switzerland than in Germany, but more so than in France and Italy. This is complicated, however, by what seem to be pronounced regional differences within Switzerland. This is an issue we will pursue in more detail in future publications. The high quota of open positions that we found adds urgency to

measures against staff shortages in occupational therapy. If this situation differs between geographic regions and fields of practice, we will investigate this in more depth in future publications.

ETHICAL APPROVAL

Ethical approval was not applicable to this study. It was conducted according to the World Medical Association's Declaration of Helsinki. Informed consent was obtained from the participants.

DECLARATION OF INTEREST

The authors report there are no competing interests to declare.

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