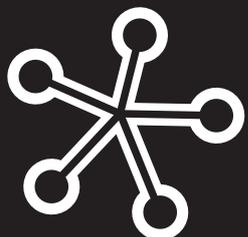# AIAS

Amsterdam Institute for Advanced labour Studies

Health workforce remuneration
Comparing wage levels, ranking and dispersion of 16 occupational groups in 20 countries

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Health workforce remuneration

Comparing wage levels, ranking and dispersion of 16 occupational groups in 20 countries

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Abstract

This article focuses on remuneration in the Human Resources for Health (HRH), comparing wage levels, ranking and dispersion of 16 HRH occupations in 20 countries (Argentina, Belarus, Belgium, Brazil, Chile, Colombia, Czech Republic, Finland, Germany, India, Mexico, Netherlands, Poland, Russian Federation, South-Africa, Spain, Sweden, Ukraine, United Kingdom, United States). Research questions asked are to what extent are the wage rankings, wage dispersion, and standardized wage levels are similar between the 16 occupational groups in the HRH workforce across countries. The pooled data from the continuous, worldwide, multilingual *WageIndicator* web-survey between 2008 and 2011Q1 have been analysed (N= 38,799). Hourly wages expressed in standardized USD, all controlled for PPP and then indexed to 2011 levels. The findings show that the Medical Doctors have overall the highest median wages and they have so in 11 of 20 countries, while the Personal Care Workers have overall lowest wages and they have so in 9 of 20 countries. Health Care Managers lower earnings than Medical Doctors, but in 5 of 20 countries they have higher earnings (BLR, CZE, POL, RUS, UKR). The wage levels of Nursing & Midwifery Professionals vary largely across countries. The correlation of the overall ranking to the national ranking is more than .7 in 7 of 20 countries. The wage dispersion is defined as the ratio of the highest to the lowest median earnings in an occupation in a country. It is highest in Brazil (7.0), and lowest in Sweden, Germany, Poland, and Argentina. When comparing wage levels in occupations across countries, the largest wage differences for the Medical Doctors: the Ukraine doctor earns 19 times less compared to the US doctor. A correlation between country-level earnings and wage differentials across countries reveals that the higher the median wages in an occupation, the higher the wage difference across countries (r=.9). In conclusion, this article breaks new ground by investigating for the first time the wage levels, ranking and dispersion of occupational groups in the HRH workforce across countries. Findings illustrate that the assumption of similarity in cross-country wage ranking, wage dispersion, and purchasing power adjusted wage levels does not hold. These findings help to explain the complexity of migratory paths seen.

Keywords: health workforce composition; remuneration; wages; survey data; occupational groups; ranking; dispersion

1. **Background**

Wages are commonly perceived as a key factor affecting job satisfaction, retention, and attrition or migration of health care professionals within and across countries (Ferrinho et al, 1998; Dovlo, 2002; Smigelskas and Padaiga, 2007; Nguyen et al, 2008). A major problem preventing progress on insight into the relative importance of wage information in health workforce strengthening is the lack of detailed information about the wide range of health workers' occupations (De Vries and Tijdens, 2010). Typically, international databases employ high levels of occupational aggregation and are insufficiently standardized in their classifications to allow for cross-country comparability (Dräger et al, 2006). For example, while the October Inquiry and the Occupational Wages (OWW) database of the International Labour Organisation (ILO) is an important resource, for the health sector only seven occupations are included: general physician, dentist, professional nurse, auxiliary nurse, physiotherapist, medical x-ray technician and ambulance driver. Another major source, the Luxembourg Income and Employment Study, has surveyed 30 countries over the past decades, yet lacks sufficient specificity as most labour force surveys do not provide further detail than a 2-digit coding of ILO's International Standard Classification of Occupations (ISCO). An investigation for a number of European countries concludes that no cross-country comparable data is available for the occupational groups in the HRH workforce, and that one has to rely on a few national studies with incomparable wage data and incomparable occupational groups (Pillinger, 2010). At the country level, a small diversity of HRH sources is available and includes population censuses and surveys, facility assessments, and routine administrative records. However, most available data sources have shortcomings (Dal Poz et al, 2009; McQuide et al, 2009).

As a result of this absence of comparable wage data, few studies have investigated wage levels and wage distribution across countries (Dräger et al, 2006; Vujicic, 2004). Preliminary analysis has suggested that salary differentials between source and destination countries are too high to curb migration (Vujicic, 2004). Using data on 42 countries from both the OECD Health Data 2005 and OWW database for a comparison of wages of general physicians and professional nurses only, Dräger et al. found that there is an enormous gap in wages for health workers between rich and poor countries (Dräger et al, 2006). Moreover, health workers tend to be paid less than equivalent professionals – or at least teachers and engineers – in low-income countries. Wages, they suggest, are great incentives for health workers to migrate, posing challenges for the development of strategies to retain them in poor countries. At the same time, an increasingly complex

remuneration landscape in destination countries is showing the development of different task profiles and related certifications requirements—a proxy for relative wage ranking for distinct occupations across countries—across counties (Grimshaw and Carroll, 2008; Jaehrling, 2008)

This article introduces a non-probability dataset that can be used for comparing wage information across countries —the *WageIndicator* web-survey— with the aim of contributing to an improved understanding of global wage differentials, thereby illustrating the usefulness of online data collection for cross-country comparative research. The paper focuses on the validity of three wage cross-country wage assumptions: the similarity of ranking of wage levels, the similarity of wage dispersion and the comparability of cost-of-living adjusted (PPP) wage levels across 20 countries in 16 occupational groups in the Human Resources for Health (HRH) workforce. Using detailed occupational wage information available from the international, multilingual *WageIndicator* web-survey in these countries, the following three research questions will be answered:

1) To what extent are the rankings between the 16 occupational groups in the HRH workforce similar across countries, based on their median wage levels?

2) To what extent are countries similar with respect to the wage dispersion across the national HRH occupations?

3) To what extent are the standardized wage levels within the same HRH occupations comparable across countries?

Answers to these questions are important. Differences between the complexity of wage structures between various countries are of potential key influence to workforce migratory patterns, while allowing insight in possible strategies to increase country level job satisfaction and retention, and national settings of health care provision, wage setting processes, and credentialism.

2. Methods

2.1. Data

The data used in this paper stem from the *WageIndicator* web-survey (www.wageindicator.org). This is a multi-country, continuous surveys, posted at the *WageIndicator* websites in an increasing number of countries. In 2000, the *WageIndicator* project started as a paper-and pencil survey for establishing a website with salary information for women's occupations in the Netherlands, but quickly developed into an online, multilingual data collection tool which on an ongoing basis pulls occupational information for hundreds of occupations through more than 60 national websites as of early 2011. A national website hosting the survey tool consists of job related content, labour law and minimum wage information, an anonymous questionnaire with a prize incentive, and a free and crowd-pulling Salary Check presenting average wages for occupations based on data from the questionnaire. Additionally, the project includes search engine optimization, web-marketing, publicity, and answering visitors' email. Most countries have their own web-manager. Coalitions with media groups and publishing houses with a strong Internet presence contribute to the large numbers of visitors to the websites. The websites are consulted by employees, students, job seekers, individuals with a job on the side, and alike for their job mobility decisions, annual performance talks, occupational choice or other reasons. All web-visitors are asked to complete voluntarily the web-survey, in return to the free information provided. Importantly, approximately 1.5% of the visitors start completing the questionnaire. The web-survey is comparable across countries, it is in the national language(s) and it has questions about wages, education, occupation, industry, socio-demographics, and alike (Tijdens et al, 2010). The survey has a prize incentive and it takes approximately 10 minutes to complete part 1 and 10 minutes for part 2.

From a scientific perspective, concerns have been raised in relation to the quality and reliability of web-survey data (Couper, 2000). The problem of sample bias arises when those not covered, not recruited, and/or not surveyed are different from those who are covered, are recruited and have responded (Groves, 2004). To minimize such bias, researchers have traditionally attempted to create samples that provide a reliable cross-section of a given population allowing the drawing of probability-based samples which produce representative results for the entire population. In the case of the *WageIndicator* web-survey, which is a non-probability or volunteer survey, the most serious problem is related to the self-selection recruitment method of respondents, and the related question of to what extent the results are representative for the

general population. To deal with this problem, different weighting techniques have been proposed to adjust a "biased" web sample to the population under consideration (Lee and Vaillant, 2009; Schonlau et al, 2009). The efficiency of different weights in adjusting biases has also been considered in the case of the *WageIndicator* data (Steinmetz and Tijdens, 2009). Specifically, un-weighted and weighted results of these data from the year 2006 for selected countries (Germany, the Netherlands, Spain, the US, Argentina and Brazil) have been compared using representative reference surveys for the same year. Similar to findings from previous studies (Lee, 2006; Loosveldt and Sonck, 2006), the results showed that all web samples deviated from the reference samples with regard to the common variables age, gender and education. However, the impact of the applied weights seems to be very limited and does not make web-survey data more comparable to the general population. This argument can also be supported by a detailed comparison of the *WageIndicator* data to other so-called representative surveys (such as the Labor Force Survey or the World Values Survey) using the distributions over 36 categories (2genders*2workinghours*3agegroups*3educationgroups). As shown in their analysis (Steinmetz and Tijdens, 2009), for most of these categories it would be exaggerated to speak of a fundamental selection bias in the case of the volunteer data set. It seems worthwhile to emphasize the argument made by Couper and Miller (2008) that it is better not to treat survey quality as an absolute, but to evaluate quality relative to other features of the research design and the stated goals of the survey.

2.2. Defining health sector occupations

The *WageIndicator* web-survey asks in detail about the occupation of the respondent, offering a search tree with some 1,700 occupations, coded according to ILO's recently updated occupational classification ISCO-08, adding further digits to its 433 four-digit occupational units (Tijdens, 2010). These 1,700 occupational titles have been translated into all languages of the web-survey. Based on this list, health sector occupations were selected and subsequently clustered following the occupational classifications in the Communicable Disease Global Atlas for Human Resources for Health of the World Health Organisation (2009) and ILO's definition of health sector occupational units (International Labour Organisation, 2009), but keeping a number of more detailed occupational categories to allow for additional insight in the usage of the *WageIndicator* dataset. The initial list of occupations allows for a selection of 20 health sector occupational groups. In this article we will refer to these occupations as the Human Resources for Health occupations, abbreviated as HRH occupations. Excluded are occupations related to pharmaceutical production and job-holders in sectors Health Care Administration & Operations occupations not working in the human health

activities, residential care activities, and social work activities without accommodation (NACE2.0 codes 86, 87, and 88).The mapping of the selected occupations into the HRH occupations, including the related ISCO-08 codes, can be found in Appendix 1.

Given the list of 20 HRH occupations, the *WageIndicator* data did not provide sufficient observations for four groups of these occupations (<250 obs.), namely Traditional & Complementary Medicine (Associate) Professionals, Paramedical Practitioners, Veterinary Professionals, and Optometrists and Ophthalmic Opticians. The remaining 16 groups are included in the analysis.The number of observations in the HRH occupations is shown in Table 1, given the selection of countries discussed in the next section.

Table 1   Number of observations of 16 HRH occupations

HRH Occupation	Freq.	Percent	HRH Occupation	Freq.	Percent
Medical Doctors	1988	5.1	Community Health Workers	596	1.5
Nursing & Midwifery Professionals	3239	8.3	Other Health Associate Professionals	4787	12.3
Dentists	309	.8	Personal Care Workers in Health Services	1794	4.6
Pharmacists	407	1.0	Health Researchers & Educators	1653	4.3
Envir. and Occ. Health and Hygiene Prof.	417	1.1	Health Care Managers	1465	3.8
Physiotherapists	741	1.9	Health Care Administration & Operations	6851	17.7
Other Health Professionals	4279	11.0	Health Informatics Technicians	5431	14.0
Medical and Pharmaceutical Technicians	2373	6.1			
Nurses & Midwifery Associate Profess.	2469	6.4	Total	38799	100.0

Source: WageIndicator data 2008, 2009, 2010, 2011Q, selection 16 health sector occupations in 20 countries.
The data are not weighted across or within countries or occupations.

2.3.   Selecting the countries

For this study the *WageIndicator* data from 2008, 2009, 2010 and 2011 until April have been used. This dataset includes observations from 56 countries. Yet, only countries with at least 250 observations with valid wage information for the HRH occupations have been included in the analyses. Quite a number of countries did not start the web-survey until 2010 or 2011 and therefore have insufficient observations for the current analyses. The study is limited to 20 countries from four continents, namely one country from Africa (South Africa), six from the Americas (Argentina, Brazil, Chile, Colombia, Mexico, United States), one from Asia (India) and twelve from Europe (Belarus, Belgium, Czech Republic, Finland, Germany, Netherlands, Poland, Russian Federation, Spain, Sweden, Ukraine, United Kingdom). In total, 38,799observations from 20 countries have been used in the analyses. Table 2 provides a breakdown of the number of observations by country. The number of observations by country and occupation can be found in Appendix 1.

Table 2   Number of observations in the WageIndicator web-survey for the HRH remunerations study, break down by country

Country	Frequency	Percent	Country	Frequency	Percent
Argentina	1554	4.0	Netherlands	7375	19.0
Belgium	2168	5.6	Poland	272	.7
Brazil	4072	10.5	Russian Federation	487	1.3
Belarus	719	1.9	South Africa	1007	2.6
Chile	591	1.5	Spain	934	2.4
Colombia	599	1.5	Sweden	297	.8
Czech Republic	2091	5.4	Ukraine	388	1.0
Finland	1646	4.2	United Kingdom	1558	4.0
Germany	10325	26.6	United States	551	1.4
India	612	1.6			
Mexico	1553	4.0	Total	38799	100%

Source: WageIndicator data 2008, 2009, 2010, 2011Q, selection 16 health sector occupations in 20 countries. The data are not weighted across or within countries or occupations.

2.4.   Defining wages

The *WageIndicator* web-survey asks respondents about their earnings (Tijdens et al, 2010). In the survey, the employees and the self-employed are routed differently through the pages with questions on wages. The employees are asked if they are paid per month or per week, whichever is most common in the country of survey. If the answer is 'no', the next question asks them to tick the pay period. In countries where it is deemed necessary, a question asks about the currency in which the wage is paid. Then, the employees are asked 'Do you know your gross and your net wage?'. Depending on the answer, questions follow for the last gross and/or net wage. Here, a hint suggests to include bonuses, if these were received in the last wage. The next page presents a list of bonuses and benefits that may have been included in the last wage, ranging from shift and commuting allowances to tips and performance bonuses. These questions are default set to 'no'. If 'yes' is selected, a question pops up asking for the amount of the bonus. The self-employed receive a question about their gross annual income, followed by a question whether this income was earned in 12 months or less, and if less, in how many months. For the computation of the hourly wages, either the contractual hours for workers in dependent employment with agreed working hours in their employment contract are used or the usual working hours for all other categories. The wage variable is taken from the survey question about gross wage or net wage, which have been tested against the minimum and maximum values, applicable for the country and for the reported pay period. Then the total of reported bonuses is deducted from the reported wages. Next, the hourly wages are computed from the weekly hours, the wage period and the gross wages minus the bonuses. For the cases with information about net hourly wages only, the gross hourly

wages are computed based on the annual country average between gross and net wages.

We then converted the hourly wages into a standardized hourly wage in US dollars, using purchasing power parities (PPP) from the World Bank Database with their projections for the years up to 2011. The purchasing power parity theory uses the long-term equilibrium exchange rate of two currencies to equalize their purchasing power for a given basket of goods. Using a PPP basis is arguably more useful when comparing differences in living standards on the whole between nations because PPP takes into account the relative cost of living and the inflation rates of different countries, rather than just a nominal Gross Domestic Product (GDP) comparison. In the data cleaning, the standardized hourly wages are tested for their reliability. Indexed hourly wages lower than 1 standardized PPP US dollar or over 400 standardized PPP US dollars are considered outliers. Odd values in the reported gross and/or net wages are set to missing. Similarly, this is done if the sum of bonuses is larger than 2/3 of the reported gross wage, or if the reported gross wages are larger than 100 times the reported net wage.

For this study, to compare the hourly wages over the survey years, the 2008 wages have been augmented with the ratio of the national PPP-2011/PPP-2008, and similarly for 2009 and 2010. Thus all wages have been indexed to the 2011 level. In case an HRH occupation in a country had less than 5 observations over these years, the wages in this occupation were set to missing. In the remaining, the words standardized USD wages will be used to refer to the PPP standardized wages in US dollars, indexed to the 2011 level.

3. Results

3.1. Wage rankings of occupations across countries

The first research objective addressed to what extent the wage rankings for the 16 occupational groups in the HRH workforce are similar across countries. For this purpose, the median wages of the 16 occupations in each of the 20 countries have been computed and ranked. Ranking runs from 1, indicating the occupation with the lowest median wage in the country, to 16, indicating the occupation with the highest median wage in the country. In a few countries, wage information for some occupations had insufficient observations (<5), for example for the Dentists (insufficient in 7 countries), the Physiotherapists (in 6 countries), and the Personal Care Workers in Health Services (in 6 countries). In these countries, the ranking of these less than 16 occupations was scaled between 1 and 16. The ranking of 16 occupations in each of the 20 countries can be found in Appendix 1. Based on the median standardized wages of each occupation in each country, the 20-country mean standardized wages were calculated and subsequently ranked (Table 3, column 2 and 3). Note that this ranking does neither control for the relative sizes of the national HRH workforces nor for the relative sizes of the HRH occupations within the country. Thus, the ranking is based on occupations, not on jobholders in occupations. The results are shown in Table 3.

Table 3 *Mean rank order in the 16 HRH occupations across the 20 countries (1=lowest rank, 16 = highest rank), mean wages of the median wages in each occupation across 20 countries in standard USD, minimum rank in the occupation, maximum rank in the occupation, standard deviation of ranks, mean rank order, and number of countries with sufficient observations*

	20-country rank order	mean wage	min rank order	max rank order	sd	mean rank order	#cntr obs
Medical Doctors	16	25.05	5	16	2.8	14	19
Dentists	15	22.48	1	16	4.7	13	13
Pharmacists	14	18.42	2	16	4.2	12	17
Health Researchers & Educators	13	16.15	3	16	3.3	12	19
Other Health Associate Professionals	12	14.36	1	10	2.4	6.9	14
Physiotherapists	11	14.08	1	13	3.8	8.3	14
Health Care Managers	10	13.46	7	16	2.4	12	20
Envir. and Occ. Health and Hygiene Prof.	9	12.99	4	15	3.3	11	17
Nursing & Midwifery Professionals	8	12.60	1	14	3.9	8.4	20
Medical and Pharmaceutical Technicians	7	12.27	2	13	2.5	8.2	18
Other Health Professionals	6	12.08	4	15	2.8	8	20
Community Health Workers	5	10.82	1	13	3.5	5.7	20
Health Informatics Technicians	4	10.43	2	16	4.1	7.3	20
Health Care Administration & Operations	3	10.20	1	14	3.4	5.1	19
Nurses & Midwifery Associate Professionals	2	9.90	1	12	3.6	4.3	20
Personal Care Workers in Health Services	1	5.89	1	15	4.8	2.6	20

Source: *WageIndicator data 2008, 2009, 2010, 2011Q, selection 16 health sector occupations in 20 countries. The data are not weighted across or within countries or occupations.*

Table 3 shows, not surprisingly, that the occupational group Medical Doctors rank the highest number 16, indicating that this occupational group has the highest mean across the 20 countries of the country-specific median standardized USD wages. It has the highest median wage in 11 of the 20 countries and the one-highest in another three countries (see Appendix 1). The Medical Doctors group ranks relatively low in the Ukraine. The Dentists group is ranked 15 across the 20 countries, but this occupation has the highest median wage in three countries (Belgium, Netherlands, United Kingdom).

In contrast to the Medical Doctors group, the Personal Care Workers group is ranked 1, indicating that in the 20 countries this group has the lowest wage ranking, when averaging the median wages in this occupation across the 20 countries. In 9 of the 20 countries this occupation indeed ranks lowest, and in the other countries it is ranked among the lowest earning occupations, apart from the Czech Republic (rank 15), Colombia and Ukraine (both rank 10).

In most countries, the Health Care Managers group has a relative high ranking, though in three countries this occupation ranks in the middle, namely in Spain, Germany, and India. In almost all countries, the Health Care Managers group has lower median earnings than the Medical Doctors group. In five countries, they have however higher earnings, namely in Belarus, Czech Republic, Poland, Russian Federation and Ukraine.

The Nursing & Midwifery Professionals group is ranked 9 out of 16, thus its ranking is in the higher half of the earnings distribution. In four countries, this occupation is ranked at the bottom, namely in Belarus, India, Russian Federation, and Ukraine. In contrast, this occupational group has relatively higher rankings in Brazil, Chile, Netherlands, Spain, and United States. According to the ISCO occupational classification, the Nurses & Midwifery Associate Professionals have a job-level below that of the Nursing & Midwifery Professionals. Yet, in two countries the latter occupation has higher median earnings than the former, namely in South Africa and United Kingdom. The distinction between the two occupational groups is probably not understood the same way in these countries. This certainly calls for further investigations of the work activities associated with these occupational groups.

Research objective 1 aimed to investigate to what extent the rankings of the median wage levels of the 16 occupational groups in the HRH workforce are similar across countries. For this purpose, the ranking in each country has been correlated to the overall 20-country ranking, thereby indicating how much the country's ranking fits into the overall ranking. The one-last column in Table 4 shows the results. It depicts that the correlations are pretty high for most countries. In seven countries (Argentina, Belgium, Brazil, Chile, Finland, Netherlands, United States) the correlation is more than .7. In another four countries it is between

.5 and .7 (Germany, Spain, South Africa, United Kingdom). In seven countries it is between .3 and .5 (Belarus, Colombia, Czech Republic, Mexico, Poland, Russian Federation, and Sweden). Finally, two countries exhibit a ranking that is extremely different from the overall 20-countryranking, namely India, and Ukraine. In conclusion, for the majority of countries in this study, the ranking is pretty similar. These countries are seemingly a group of higher income countries, somewhat contrasting with the medium or lower level income countries showing a lower ranking of median wage level. Considering health workforce migratory patterns from low to higher level countries, this is difference may be of further interest.

Table 4   Standardized USD wages in 16 occupations in the HRH workforce in 20 countries (minimum, maximum, ratio maximum/minimum, standard deviation, average wage across occupations (not controlled for number of jobholders in the occupations), rank correlations of the 16 oc cupations within the country to the average ranking, and number of occupations with sufficient observations

	Min	Max	Ratio max-min	SD	Mean wage	Rank corr	# of occ's
Argentina	5.88	14.11	2.40	2.61	8.78	0.86	16
Belgium	11.62	51.53	4.43	10.04	18.46	0.71	16
Brazil	2.50	17.54	7.02	3.70	5.35	0.78	16
Belarus	4.27	14.04	3.29	2.61	7.83	0.34	14
Chile	7.20	34.80	4.83	7.31	14.14	0.77	14
Colombia	5.69	25.16	4.42	5.05	11.22	0.48	15
Czech Republic	2.28	14.37	6.30	3.12	9.60	0.40	15
Finland	10.97	27.54	2.51	4.50	13.65	0.77	14
Germany	13.83	27.55	1.99	4.48	18.34	0.64	14
India	3.00	14.81	4.93	3.70	8.11	0.27	12
Mexico	4.67	16.79	3.60	3.32	9.68	0.30	16
Netherlands	16.68	66.96	4.02	13.35	24.79	0.81	16
Poland	3.35	7.68	2.29	1.33	4.79	0.36	14
Russian Federation	1.37	6.86	5.01	1.59	4.24	0.34	14
South Africa	13.20	56.23	4.26	11.78	23.60	0.66	15
Spain	9.42	29.35	3.11	5.12	15.20	0.55	15
Sweden	14.81	23.45	1.58	2.61	17.99	0.45	11
Ukraine	2.12	7.13	3.36	1.73	4.83	0.13	15
United Kingdom	16.65	57.67	3.46	10.89	25.94	0.68	14
United States	11.38	71.01	6.24	16.82	24.66	0.78	14

Source: WageIndicator data 2008, 2009, 2010, 2011Q, selection 16 health sector occupations in 20 countries. The data are not weighted across or within countries or occupations.

3.2.   Wage dispersion within countries

Research objective 2 aimed to investigate to what extent countries differ with respect to the gap between the highest and the lowest earning occupation in the national HRH workforce. The results are shown in Table 4. Per country, columns 2 and 3 reveal the lowest and highest median standardized hourly wages of the 16 occupations. Column 4 shows the ratio between the highest and lowest wages. This column reveals that the wage gap is largest in Brazil where the median wage of the highest paid HRH occupation is 7.0 times

the median of the lowest paid HRH occupation, followed by Czech Republic, United States and Russian Federation (ratios between 5.0 and 6.3). In contrast, Sweden, Germany, Poland, and Argentina are egalitarian countries as far as the median wages in the HRH workforce is concerned (ratios between 1.6 and 2.5). In another five countries, the ratios are between 3.0 and 3.5 (Spain, Belarus, Ukraine, United Kingdom, and Mexico). In the remaining six countries, the wage differentials are between 4.0 and 4.9 (Netherlands, South Africa, Colombia, Belgium, Chile, and India). One can conclude tentatively that wage dispersion is higher in the larger economies, such as Brazil, United States and Russia, compared to smaller economies, but that in general a diverse pattern is seen.

3.3. Wage levels across countries

Research objective 3 aimed to investigate to what extent the PPP standardized wages within the same HRH occupational groups are comparable across countries. Thus, within an occupational group, how do the wage levels compare international?

Before turning to the overall picture, the median standardized wages for three occupations are shown, namely for the groups of Medical Doctors, the Nursing & Midwifery Professionals and the Personal Care Workers in Health Services (Graph 1). The largest wage differences for the group of Medical Doctors are between the Ukraine on the one hand and the United States on the other hand. The Ukraine doctor earns 19 times less compared to the US doctor, using PPP standardized wages. The Nursing & Midwifery Professionals occupational group exhibits the same pattern, though the differences are smaller. The Ukraine nurses and midwifes earn 9 times less compared to the US nurse, using PPP standardized wages. When it comes to the care worker, the pattern is different. Here, the care worker in Brazil has the lowest earnings and they earn 6 time less compared to the care worker in Mexico, having the highest earnings.
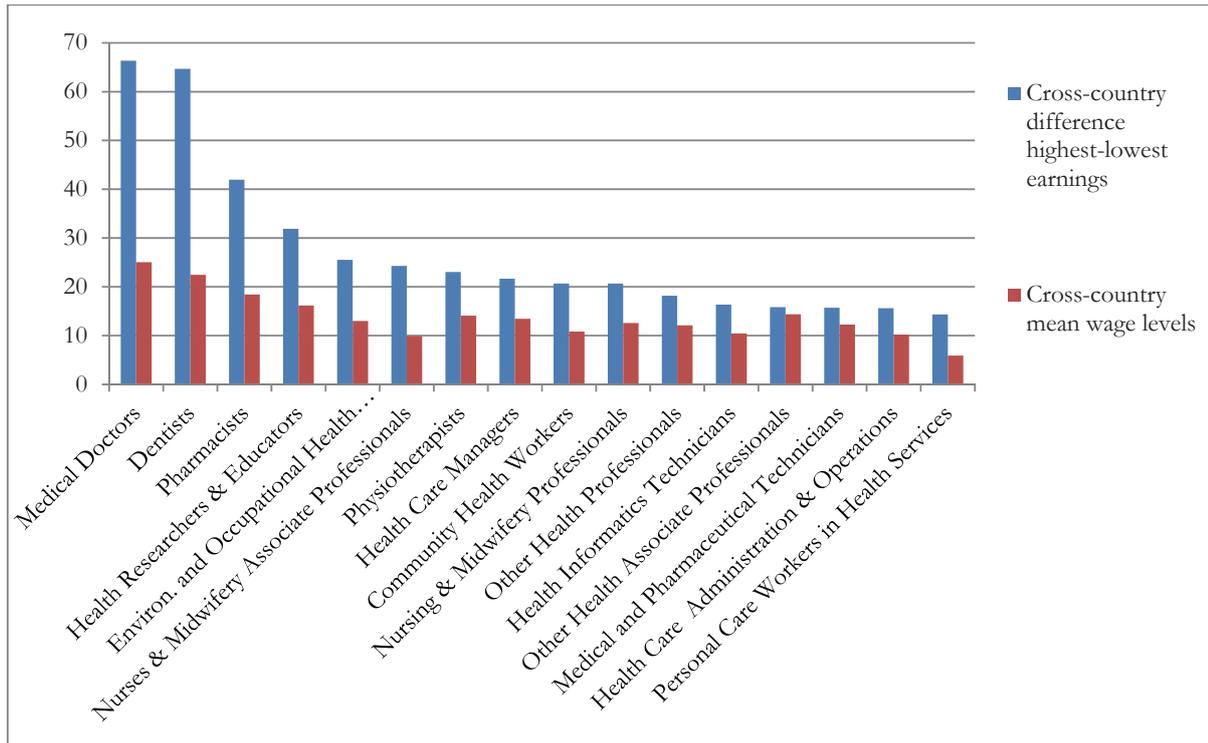
Graph 1   Standardized USD hourly wages in 3 occupations in the HRH workforce in 20 countries
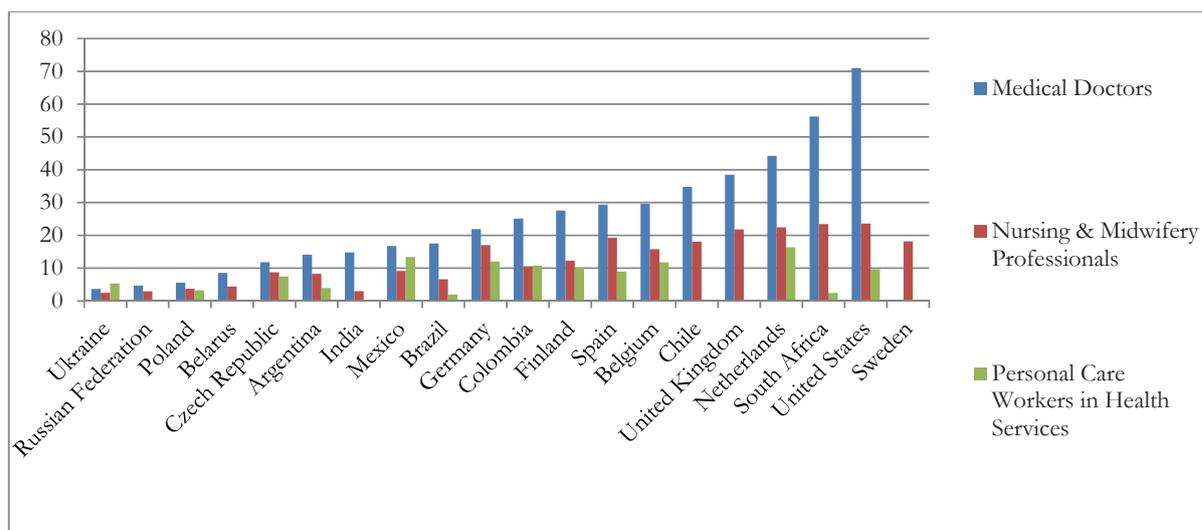
*Source: WageIndicator data 2008, 2009, 2010, 2011Q, selection 2 health sector occupations in 20 countries.
The data are not weighted across or within countries or occupations.*

Table 3 in the Appendix presents the findings with respect to the standardized wages earned in the 16 HRH occupations in each of the 20 countries. It shows that the maximum median earnings are highest in Belgium, South Africa, the United Kingdom, the Netherlands, and United States. The maximum median earnings are lowest in Poland, the Russian Federation and Ukraine. When focusing on the minimum median wages paid in the 20 countries, Table 3 shows that these are lowest in the Russian Federation, Ukraine, Czech Republic, Brazil, India, and Poland. They are highest in Germany, Sweden, the United Kingdom, and the Netherlands. Across countries, the wage differentials within occupations are highest for the group of Medical Doctors and lowest for the group of Personal Care Workers (Graph 2). Across countries, the mean wages within-occupations – thus the sum of the median wages in this occupational group divided by the number of countries with valid wage data for this group - are highest for the group of Medical Doctors and lowest for the group of Personal Care Workers (Graph 2). The correlation between the within-occupation wage differentials and the within-occupation mean wages is high (r=.9), indicating that the wage distributions in the health workforce reveal similar patterns across countries.

Graph 2   Within-occupation wage differences in 16 occupational groups across 20 countries

Source: *WageIndicator data 2008, 2009, 2010, 2011Q, selection 2 health sector occupations in 20 countries.*
          The data are not weighted across or within countries or occupations.

Assuming that workforce mobility across countries is driven by wage differentials, provided that these wage differentials are perceived to be controlled for PPP, one can expect the groups of Medical Doctors and Dentists to migrate from the former Eastern European countries to the UK, US, South-Africa and the Netherlands. Based on the wage differentials in Graph 2, lower workforce mobility though still substantial can be expected for the remaining occupational groups. The lowest mobility can be expected for the occupational group of the Personal Care Workers.

4. Discussion

This study certainly has limitations. The first one relates to the definition of wages. *WageIndicator* applies a standard definition to all countries and occupations, as explained in section 3. However, wage structures may vary across countries. It may include non-financial remunerations such as housing or food, may include financial remunerations probably not reported as wage such as transportation cost reimbursement, may include social benefit or pension contributions, or may include in part cash rewards not reported. Thus, whereas the web-survey has a standardized approach of calculating hourly wages, there may be variation across countries which are not taken into account. Possibly this would explain the finding that median wages for Associate Nurses and Midwives wages are higher than Nurses and Midwives in the United Kingdom and South Africa.

A second limitation relates to the occupational titles. In this study, it is assumed that the same occupational titles to refer to the same job content across countries. Thus, the occupational group of Nursing & Midwifery Professionals is assumed to have the same set of tasks across the world, otherwise the wages of apples and pears would be compared. However, the job content of the HRH occupational groups is not empirically tested on a worldwide scale. The *WageIndicator* web-survey does allow for a worldwide testing of job content, but this would require a separate project for developing such testing.

A third limitation relates to the diploma credentials in the HRH occupations. In most countries for most HRH occupations credentials are required. Depending on the supply and demand ratio in the local labor market, these credentials will or will not be required for entry into the job. In most workplaces credentials will lead to higher earnings. However, the current dataset does not allow controlling for credentials. Thus, the dataset does not control for wages of accredited versus not-accredited jobholders in the same occupational group.

Finally, this study does not take into account the public or private provision of health care, which is assumed to affect wage setting. It also does not take into account regional wage differentials in large countries. Nevertheless these limitations, being the first study on wages in a wide range of HRH occupations and a wide range of countries in four continents, it certainly increases the understanding of wage levels and wage dispersion in the HRH field.

5. Conclusions

This paper breaks new ground by investigating for the first time the wage levels and the wage distribution of 16 occupational groups in the Human Resources for Health (HRH) workforce for 20 countries. Cross-country worldwide wage comparisons have not been undertaken for such a great detail in occupational breakdown. This data is needed for understanding cross-country mobility in the HRH workforce, for understanding the national settings of health care provision, and for understanding wage setting processes and credentialism within countries.

For the investigations, the data of the worldwide, continuous *WageIndicator* web-survey for 2008, 2009, 2010, and 2011 until April was pooled. The web-survey has detailed information about wages and about occupations, allowing for a break down into the 16 occupational groups in the HRH workforce in 20 countries. For the analyses, the wages were first controlled for purchasing power parity in the respective years, and then these wages were set to the 2011 level. In total, the analyses included38,799 observations.

Research question 1 assumed that the ranking of median wages in the 16 occupational groups was similar across the 20 countries. The study reveals that in the majority of the countries the wage ranking is indeed fairly similar across countries, particularly for higher income countries. In 7 of the 20 countries, the national ranking correlates at least .7 with the overall 20-country ranking. The findings show that the Medical Doctors have overall the highest median wages and they have so in 11 of 20 countries, while the Personal Care Workers have overall median lowest wages and they have so in 9 of 20 countries. Health Care Managers lower earnings than Medical Doctors, but in 5 of 20 countries they have higher earnings (BLR, CZE, POL, RUS, UKR). The wage levels of Nursing & Midwifery Professionals vary largely across countries.

Research question 2 assumed that the wage distribution among the 16 occupations was similar cross countries. This assumption did not hold. The wage dispersion is defined as the ratio of the highest to the lowest median earnings in an occupation in a country. It is highest in Brazil (7.0), whereas Sweden, Germany, Poland, and Argentina are egalitarian countries as far as the median wages in the HRH workforce is concerned.

Research question 3 assumed that the wage levels within the same occupational groups in the HRH workforce were comparable across countries, using standardized PPP wages. The largest wage differences are found for the Medical Doctors: the Ukraine doctor earns 19 times less compared to the US doctor. Correlation between country-level earnings and wage differentials across countries, the data reveal that the

higher the median wages in an occupation, the higher the wage difference across countries (r=.9).

In conclusion, the data of the WageIndicator web-survey allows for the mapping and comparison of wage structures between countries, making visible a complex and diverse landscape of wage rankings, dispersions, and standardized wages. The findings illustrate that the assumption of similarity in cross-country wage ranking, wage dispersion, and purchasing power adjusted wage levels does not hold. These findings may help to explain the complexity of migratory paths observed.

Abbreviations

HRH = Human Resources for Health

ILO = International Labour Organisation

ISCO = International Standard Classification of Occupations

OWW= October Inquiry and the Occupational Wages

PPP = Purchasing Power Parity

WHO = World Health Organisation

USD = US dollars

References

Couper M, Miller P: Web-survey methods - Introduction. Public Opinion Quarterly 2008, 72: 831-835.

Couper M: Web-surveys: a review of issues and approaches. Public Opinion Quarterly 2000, 64: 464-481.

Dal Poz MR, Gupta N, Quain EE, Soucat ALB: Monitoring and evaluation of human resources for health: challenges and opportunities. In *Handbook on Monitoring and Evaluation of Human Resources for Health*. Edited by Dal Poz MR, Gupta N, Quain EE, Soucat ALB. Geneva: World Health Organization; 2009: 3-12.

De Vries DH, Tijdens KG: *Using the WageIndicator web-survey to monitor Human Resources for Health*. Paper presented at the International Conference on Research in Human Resources for Health, Rio de Janeiro, June 09 to 11; 2010.

Dovlo D: *Retention and deployment of health workers and professionals in Africa. Report for the Consultative meeting on Improving Collaboration between Health Professions and Governments in Policy Formulation and Implementation of Health Sector*. Addis Ababa, Ethiopia. January 28 – February 1, 2002.

Dräger S, Dal Poz MR, Evans DB: *Health workers wages: an overview from selected countries. Background paper prepared for The world health report 2006 - working together for health*. Geneva: World Health Organization; 2006.

Ferrinho P, Van Lerberghe W, Julien M, Fresta E, Gomes A, Dias F: How and why public sector doctors engage in private practice in Portuguese-speaking African countries. Health Policy and Planning 1998, 13: 332-338.

Grimshaw D, Carroll M: Improving the Position of Low-Wage Workers Through New Coordinating Institutions: The Case of Public Hospitals. In *Low-Wage Work in the United Kingdom*. Edited by Lloyd C, Mason G, Mayhew K. New York: Russell Sage Foundation; 2008: 168-210.

Groves R: *Survey Errors and Survey Costs*. Wiley - Interscience: Haboken; 2004.

International LabourOrgnisation: *Updating the International Standard Classification of Occupations (ISCO) Draft ISCO-08 Group Definitions: Occupations in Health*. Geneva, Switzerland: ILO, 2009 [http://www.ilo.org/public/english/bureau/stat/isco/docs/health.pdf]

Jaehrling K: The Polarization of Working Conditions: Cleaners and Nursing Assistants in Hospitals. In *Low-Wage Work in Germany*. Edited by Bosch G, Weinkopf C. New York: Russell Sage Foundation; 2008: 177-213.

Lee S, Vaillant R: Estimation for volunteer panel web-surveys using propensity score adjustment and calibration adjustment. Sociological Methods Research 2009, 37: 319-343.

Lee S: Propensity Score Adjustment as a weighting scheme for volunteer panel web-surveys. Journal of Official Statistics 2006, 22: 329-349.

Loosveldt G, Sonck N: An evaluation of the weighting procedures for online access panel surveys. Survey Research Methods 2008, 2: 93-105.

McQuide P, Settle D, Abubaker W, Mustafa AG, Pierantoni CR, Turlington S, De Vries DH: Use of administrative data sources for health workforce analysis: multicountry experience in implementation of human resources information systems. In *Handbook on Monitoring and Evaluation of Human Resources for Health*. Edited by Dal Poz MR, Gupta N, Quain EE, Soucat ALB. Geneva: World Health Organization; 2009: 113-127.

Nguyen LR, Nderitu S, Zuyderduin E, Luboga AS, Hagopian A: Intent to migrate among nursing students in Uganda: Measures of the brain drain in the next generation of health professionals, Human Resources for Health 2008, 6:5.

Pillinger J: *Pay and the gender wage gap in health and social care. Report of EPSU Study on pay in the care sector in relation to overall pay levels and the gender pay gap in different countries in the European Union.*Brussels, EPSU; 2010.

Schonlau M, Van Soest A, Kapteyn A, Couper M: Selection bias in web-surveys and the use of propensity scores. Sociological Methods Research2009, 37: 291-318.

Smigelskas K, Padaiga Z: Do Lithuanian pharmacists intend to migrate? Journal of Ethnic and Migration Studies 2007, 33: 501-509.

Steinmetz S, Tijdens KG, De Pedraza P: *Comparing different weighting procedures for volunteer online panels - Lessons to be learned from German and Dutch WageIndicator data.* Amsterdam: University of Amsterdam, AIAS Working Paper 76; 2009 [www.uva-aias.net/files/aias/wp76.pdf]

Steinmetz S, Tijdens KG: Can weighting improve the representativeness of volunteer online panels? Insights form the German WageIndicator data. Concepts and Methods 2009, 5: 7-11.

Tijdens KG, De Vries D: *HRH Remuneration: Comparing Wage Levels, Ranking and Dispersion of 16 Occupational Groups across the Health Workforce in 20 Countries.* Amsterdam: University of Amsterdam, AIAS Working Paper 111; 2011 [www.uva-aias.net/files/aias/wp111.pdf]

Tijdens KG, Van Zijl S, Hughie-Williams M, Van Klaveren M, Steinmetz S: *Codebook and explanatory note on the WageIndicator dataset, a worldwide, continuous, multilingual web-survey on work and wages with paper supplements.* Amsterdam: University of Amsterdam, AIAS Working Paper 102; 2010 [www.uva-aias.net/files/aias/wp109.pdf]

Tijdens KG: *Measuring occupations in web-surveys the WISCO database of occupations.* Amsterdam: University of Amsterdam, AIAS Working Paper 86; 2010 [www.uva-aias.net/files/aias/wp86.pdf]

Vujicic M, Zurn P, Diallo K, Adams O, Dal Poz, M: The role of wages in the migration of health care professionals from developing countries, Human Resources for Health 2004, 2:3.

World Health Organization: *Global Health Atlas.* Geneva, Switzerland: WHO, 2009 [http://apps.who.int/globalatlas/default.as]

Appendix

Table 1   Crossover table WageIndicator occupations into HRH health occupations

code	HRH occupations label	ISCO-08 code	ISCO-08 label	*WageIndicator* label
1	Medical Doctors	2211	Generalist medical practitioners	Company doctor
1	Medical Doctors	2211	Generalist medical practitioners	General Practitioner
1	Medical Doctors	2211	Generalist medical practitioners	Toxicologist
1	Medical Doctors	2212	Specialist medical practitioners	Anaesthetist
1	Medical Doctors	2212	Specialist medical practitioners	Cardiologist
1	Medical Doctors	2212	Specialist medical practitioners	Gastroenterologist
1	Medical Doctors	2212	Specialist medical practitioners	Geneticist
1	Medical Doctors	2212	Specialist medical practitioners	Gynaecologist
1	Medical Doctors	2212	Specialist medical practitioners	Medical practitioner, all other specialists
1	Medical Doctors	2212	Specialist medical practitioners	Optical specialist
1	Medical Doctors	2212	Specialist medical practitioners	Pathologist
1	Medical Doctors	2212	Specialist medical practitioners	Plastic surgeon
1	Medical Doctors	2212	Specialist medical practitioners	Psychiatrist
1	Medical Doctors	2212	Specialist medical practitioners	Radiologist
1	Medical Doctors	2212	Specialist medical practitioners	Skin specialist
1	Medical Doctors	2212	Specialist medical practitioners	Surgeon
1	Medical Doctors	2212	Specialist medical practitioners	Urologist
2	Nursing & Midwifery Professionals	2221	Nursing professionals	Charge nurse
2	Nursing & Midwifery Professionals	2221	Nursing professionals	Children's nurse
2	Nursing & Midwifery Professionals	2221	Nursing professionals	District nurse
2	Nursing & Midwifery Professionals	2221	Nursing professionals	Hospital nurse
2	Nursing & Midwifery Professionals	2221	Nursing professionals	Intensive care, recovery nurse
2	Nursing & Midwifery Professionals	2221	Nursing professionals	Nurse, all other
2	Nursing & Midwifery Professionals	2221	Nursing professionals	Psychiatric nurse
2	Nursing & Midwifery Professionals	2221	Nursing professionals	Surgical nurse
2	Nursing & Midwifery Professionals	2222	Midwifery professionals	Professional midwife
3	Traditional & Complementary Medicine (Associate) Professionals	2230	Traditional and complementary medicine professionals	Homeopathic practitioner
3	Traditional & Complementary Medicine (Associate) Professionals	3230	Traditional and complementary medicine associate professionals	Faith healer
3	Traditional & Complementary Medicine (Associate) Professionals	3230	Traditional and complementary medicine associate professionals	Traditional or complementary medicine associate professional
4	Paramedical Practitioners	2240	Paramedical Practitioners	Paramedical practitioner, all other
6	Dentists	2261	Dentists	Dentist
6	Dentists	2261	Dentists	Dentist, dentist surgeon
7	Pharmacists	2262	Pharmacists	Pharmacist in hospital or factory
7	Pharmacists	2262	Pharmacists	Retail pharmacist

8	Environmental and Occupational Health and Hygiene Professionals	2263	Environmental and Occupational Health and Hygiene Professionals	Hygienist, health officer
8	Environmental and Occupational Health and Hygiene Professionals	2263	Environmental and Occupational Health and Hygiene Professionals	Occupational health or safety inspector
8	Environmental and Occupational Health and Hygiene Professionals	2263	Environmental and Occupational Health and Hygiene Professionals	Occupational health or safety officer
8	Environmental and Occupational Health and Hygiene Professionals	2263	Environmental and Occupational Health and Hygiene Professionals	Sanitary inspector
9	Physiotherapists	2264	Physiotherapists	Occupational therapist
9	Physiotherapists	2264	Physiotherapists	Physiotherapist
9	Physiotherapists	2264	Physiotherapists	Psychomotor therapist
9	Physiotherapists	2264	Physiotherapists	Remedial gymnast
9	Physiotherapists	2264	Physiotherapists	Respiratory therapist
10	Optometrists and Ophthalmic Opticians	2267	Optometrists and Ophthalmic Opticians	Contact lens specialist
10	Optometrists and Ophthalmic Opticians	2267	Optometrists and Ophthalmic Opticians	Ophthalmic optician
10	Optometrists and Ophthalmic Opticians	2267	Optometrists and Ophthalmic Opticians	Optometrist
11	Other Health Professionals	2131	Pharmacologist	Pharmaceutical chemist
11	Other Health Professionals	2131	Pharmacologist	Pharmacologist
11	Other Health Professionals	2265	Dieticians and nutritionists	Dietician
11	Other Health Professionals	2265	Dieticians and nutritionists	Nutrition information officer
11	Other Health Professionals	2266	Audiologists and speech therapists	Audiologist
11	Other Health Professionals	2266	Audiologists and speech therapists	Speech therapist
11	Other Health Professionals	2269	Health professionals not elsewhere classified	Foot therapist, podiatrist
11	Other Health Professionals	2269	Health professionals not elsewhere classified	Recreational therapist
11	Other Health Professionals	2269	Health professionals not elsewhere classified	Therapist or health professional, all other
11	Other Health Professionals	N.A.	Clinical counsellor	Addictions counsellor
11	Other Health Professionals	N.A.	Clinical counsellor	Psychologist
11	Other Health Professionals	N.A.	Clinical counsellor	Social work or counselling professional, all other
12	Medical and Pharmaceutical Technicians	3211	Medical imaging and therapeutic equipment technicians	Electrocardiograph equipment operator
12	Medical and Pharmaceutical Technicians	3211	Medical imaging and therapeutic equipment technicians	Electroencephalograph equipment operator
12	Medical and Pharmaceutical Technicians	3211	Medical imaging and therapeutic equipment technicians	Medical radiation therapist
12	Medical and Pharmaceutical Technicians	3211	Medical imaging and therapeutic equipment technicians	Nuclear medicine technologist
12	Medical and Pharmaceutical Technicians	3211	Medical imaging and therapeutic equipment technicians	Sonographer

12	Medical and Pharmaceutical Technicians	3211	Medical imaging and therapeutic equipment technicians	X-ray assistant
12	Medical and Pharmaceutical Technicians	3212	Medical and pathology laboratory technicians	Laboratory technician biology, biotechnology
12	Medical and Pharmaceutical Technicians	3212	Medical and pathology laboratory technicians	Medical laboratory technician
12	Medical and Pharmaceutical Technicians	3212	Medical and pathology laboratory technicians	Ophthalmic laboratory technician
12	Medical and Pharmaceutical Technicians	3212	Medical and pathology laboratory technicians	Pathology laboratory technician
12	Medical and Pharmaceutical Technicians	3213	Pharmaceutical technicians and assistants	First line supervisor process controllers industrial production, manufacture, metal
12	Medical and Pharmaceutical Technicians	3213	Pharmaceutical technicians and assistants	Pharmaceutical process controller
12	Medical and Pharmaceutical Technicians	3213	Pharmaceutical technicians and assistants	Pharmaceutical technician
12	Medical and Pharmaceutical Technicians	3213	Pharmaceutical technicians and assistants	Pharmacology laboratory technician
12	Medical and Pharmaceutical Technicians	3213	Pharmaceutical technicians and assistants	Pharmacy assistant (skilled)
12	Medical and Pharmaceutical Technicians	3213	Pharmaceutical technicians and assistants	Quality inspector pharmaceutical products
12	Medical and Pharmaceutical Technicians	3214	Medical and dental prosthetic technicians	Dental prosthesis technician
12	Medical and Pharmaceutical Technicians	3214	Medical and dental prosthetic technicians	Medical prosthetic technician
13	Nurses & Midwifery Associate Professionals	3221	Nursing associate professionals	Company nurse
13	Nurses & Midwifery Associate Professionals	3221	Nursing associate professionals	Nursing aide (clinic or hospital)
13	Nurses & Midwifery Associate Professionals	3221	Nursing associate professionals	Nursing associate professional
13	Nurses & Midwifery Associate Professionals	3221	Nursing associate professionals	Private nurse
13	Nurses & Midwifery Associate Professionals	3221	Nursing associate professionals	School nurse
13	Nurses & Midwifery Associate Professionals	3222	Midwifery associate professionals	Assistant midwife
14	Community Health Workers	3253	Community Health Workers	Community health worker
14	Community Health Workers	3253	Community Health Workers	Community service worker
15	Other Health Associate Professionals	3251	Dental assistants and therapists	Dental assistant
15	Other Health Associate Professionals	3251	Dental assistants and therapists	Dental hygienist

15	Other Health Associate Professionals	3254	Dispensing opticians	Dispensing optician
15	Other Health Associate Professionals	3255	Physiotherapy technicians and assistants	Massage therapist
15	Other Health Associate Professionals	3255	Physiotherapy technicians and assistants	Masseur
15	Other Health Associate Professionals	3255	Physiotherapy technicians and assistants	Physiotherapy assistant
15	Other Health Associate Professionals	3256	Medical assistants	Anaesthetist assistant
15	Other Health Associate Professionals	3256	Medical assistants	Medical assistant
15	Other Health Associate Professionals	3256	Medical assistants	Physician assistant
15	Other Health Associate Professionals	3256	Medical assistants	Surgery assistant
15	Other Health Associate Professionals	3258	Ambulance workers	Ambulance driver (non paramedic)
15	Other Health Associate Professionals	3258	Ambulance workers	Ambulance paramedic
15	Other Health Associate Professionals	3258	Ambulance workers	Emergency medical technician
15	Other Health Associate Professionals	3259	Health associate professionals not elsewhere classified	Chiropractor
15	Other Health Associate Professionals	3259	Health associate professionals not elsewhere classified	Creative therapist
15	Other Health Associate Professionals	3259	Health associate professionals not elsewhere classified	Health associate professional, all other
15	Other Health Associate Professionals	3259	Health associate professionals not elsewhere classified	Osteopath
15	Other Health Associate Professionals	3460	Social work associate	Recreation program worker for elderly
15	Other Health Associate Professionals	3460	Social work associate	Recreation program worker for handicapped
15	Other Health Associate Professionals	3460	Social work associate	Social work associate professional, all other
16	Personal Care Workers in Health Services	5321	Health care assistants	First-aid attendant
16	Personal Care Workers in Health Services	5321	Health care assistants	Hospital orderly
16	Personal Care Workers in Health Services	5322	Home-based personal care workers	Elderly aide
16	Personal Care Workers in Health Services	5322	Home-based personal care workers	First line supervisor personal care workers
16	Personal Care Workers in Health Services	5322	Home-based personal care workers	Handicapped aide
16	Personal Care Workers in Health Services	5322	Home-based personal care workers	Home care aide
16	Personal Care Workers in Health Services	5322	Home-based personal care workers	Maternity carer
16	Personal Care Workers in Health Services	5322	Home-based personal care workers	Psychiatric aide
16	Personal Care Workers in Health Services	5329	Personal care workers in health services not elsewhere classified	Pharmacy aide
16	Personal Care Workers in Health Services	5329	Personal care workers in health services not elsewhere classified	Residential warden
17	Health Researchers & Educators	N.A.	Health Researcher Natural Sciences	Bacteriologist
17	Health Researchers & Educators	N.A.	Health Researcher Natural Sciences	Biologist

17	Health Researchers & Educators	N.A.	Health Researcher Natural Sciences	Biotechnologist
17	Health Researchers & Educators	N.A.	Health Researcher Natural Sciences	Clinical research associate
17	Health Researchers & Educators	N.A.	Health Researcher Social Sciences	Demographer
17	Health Researchers & Educators	N.A.	Health Researcher Natural Sciences	Epidemiologist
17	Health Researchers & Educators	N.A.	Health Education Professionals	PhD student health sciences
17	Health Researchers & Educators	N.A.	Health Researcher Natural Sciences	Physical scientists, all other
17	Health Researchers & Educators	N.A.	Health Education Professionals	Post-secondary education teacher health sciences
17	Health Researchers & Educators	N.A.	Health Education Professionals	Researcher health sciences
17	Health Researchers & Educators	N.A.	Health Researcher Social Sciences	Researcher psychology, pedagogic subjects
17	Health Researchers & Educators	N.A.	Health Researcher Social Sciences	Researcher social work, other social sciences
17	Health Researchers & Educators	N.A.	Health Education Professionals	Secondary education teacher health and welfare subjects
17	Health Researchers & Educators	N.A.	Health Researcher Social Sciences	Social scientist, all other
17	Health Researchers & Educators	N.A.	Health Researcher Social Sciences	Sociologist, anthropologist or related professional
17	Health Researchers & Educators	N.A.	Health Education Professionals	University lecturer health sciences
17	Health Researchers & Educators	N.A.	Health Education Professionals	University professor health sciences
17	Health Researchers & Educators	N.A.	Health Education Professionals	Vocational education teacher health and welfare subjects
18	Health Care Managers	1342	Health Services Manager	Handicapped care services manager
18	Health Care Managers	1342	Health Services Manager	Hospital manager
18	Health Care Managers	1342	Health Services Manager	Laboratory department manager
18	Health Care Managers	1342	Health Services Manager	Manager, all other health services
18	Health Care Managers	1342	Health Services Manager	Psychiatric care services manager
18	Health Care Managers	1343	Aged care services manager	Aged care services manager
18	Health Care Managers	N.A.	Social welfare service managers	Child care services manager
18	Health Care Managers	N.A.	Social welfare service managers	Social welfare centre manager
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Bookkeeper
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Buyer
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Catering worker
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Cleaner in offices, schools or other establishments
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Cleaner laboratory equipment

19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Logistics worker
19	Health CareAdministration & Operations	N.A.	Health Marketing Professional	Marketing professional
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Medical secretary or receptionist
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Office clerk
19	Health CareAdministration & Operations	N.A.	Human Resources for Health Officer	Personnel department manager
19	Health CareAdministration & Operations	N.A.	Human Resources for Health Officer	Personnel officer
19	Health CareAdministration & Operations	N.A.	Health Care Public Relations Professional	Public relations department manager
19	Health CareAdministration & Operations	N.A.	Health Care Public Relations Professional	Public relations officer
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Receptionist, telephonist
19	Health CareAdministration & Operations	N.A.	Health Marketing Professional	Sales representative
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Secretary
19	Health CareAdministration & Operations	N.A.	Health Care Support Staff	Staff scheduling clerk
20	Health Informatics Technicians	3252	Medical records and health information technicians	Medical records or health information technician
20	Health Informatics Technicians	N.A.	IT support technician	IT user support technician

Table 2   Number of observations by occupational group and country

	Medical Doctors	Nursing & Midwifery Prof.	Dentists	Pharmacists	Environm. and Occ. Health and Hygiene Prof.	Physiotherapists	Other Health Prof.	Medical and Pharmaceutical Technicians
Argentina	114	106	7	20	21	11	55	144
Belgium	50	288	8	44	32	41	214	182
Brazil	188	154	101	100	59	58	152	343
Belarus	164	19	24	9	20	2	19	45
Chile	47	42	14	4	13	20	51	25
Colombia	69	27	15	4	5	19	46	43
Czech Republic	46	253	6	25	32	4	54	112
Finland	36	279	2	4	19	41	117	74
Germany	393	1072	36	59	0	277	2418	432
India	42	13	1	7	7	3	21	27
Mexico	216	34	20	11	7	10	57	72
Netherlands	164	472	21	24	109	185	667	538
Poland	55	23	0	8	12	7	18	14
Russian Federation	123	18	15	7	8	0	9	19
South Africa	33	65	3	10	21	6	80	85
Spain	69	84	3	13	16	23	82	81
Sweden	3	41	0	5	2	3	19	23
Ukraine	73	26	15	12	11	1	22	15
United Kingdom	66	144	15	35	22	17	139	71
United States	37	79	3	6	1	13	39	28
Total	1988	3239	309	407	417	741	4279	2373

	Community Health Workers	Other Health Associate Professionals	Personal Care Workers in Health Services	Health Researchers & Educators	Health Care Managers	Health Care Administration & Operations	Health Informatics Technicians	total
Argentina	8	165	32	30	54	195	549	1554
Belgium	59	164	143	127	207	304	210	2168
Brazil	36	478	66	77	123	926	1094	4072
Belarus	22	87	1	47	21	47	181	719
Chile	20	85	4	18	24	32	183	591
Colombia	8	42	22	12	23	66	159	599
Czech Republic	29	205	25	85	305	501	324	2091
Finland	21	206	214	103	76	166	183	1646
Germany	192	1312	233	583	37	2633	2	10325
India	5	25	2	82	35	136	205	612
Mexico	14	56	13	32	63	75	849	1553
Netherlands	61	1262	827	135	117	1140	465	7375
Poland	10	26	5	30	16	13	33	272
Russian Federation	13	71	4	19	20	42	102	487
South Africa	5	74	5	60	78	203	263	1007
Spain	16	148	30	41	39	52	212	934
Sweden	10	49	3	15	20	32	63	297
Ukraine	15	54	2	25	3	27	78	388
United Kingdom	44	185	148	90	152	202	214	1558
United States	8	93	15	42	52	59	62	551
Total	596	4787	1794	1653	1465	6851	5431	38799

Table 3   Ranking of occupations in 20 countries

	Argentina	Belgium	Brazil	Belarus	Chile	Colombia	Czech Republic	Finland	Germany	India
Medical Doctors	16.0	15.0	16.0	11.4	16.0	16.0	12.8	16.0	13.7	16.0
Nursing & Midwifery Professionals	10.0	10.0	14.0	2.3	13.7	9.6	7.5	9.1	8.0	1.3
Dentists	14.0	16.0	15.0	8.0	14.9	13.9	1.1		14.9	
Pharmacists	13.0	13.0	11.0	16.0			16.0		16.0	5.3
Env. and Occupational Health Professionals	8.0	11.0	9.0	12.6	11.4	14.9	9.6	14.9		4.0
Physiotherapists	11.0	9.0	12.0		9.1	8.5		5.7	2.3	
Other Health Professionals	5.0	4.0	8.0	9.1	8.0	6.4	10.7	6.9	10.3	12.0
Medical and Pharmaceutical Technicians	9.0	8.0	5.0	10.3	5.7	7.5	4.3	8.0	5.7	13.3
Nurses & Midwifery Associate Professionals	3.0	6.0	6.0	1.1	1.1	2.1	2.1	4.6	3.4	
Community Health Workers	6.0	3.0	3.0	5.7	6.9	12.8	5.3	3.4	11.4	2.7
Other Health Associate Professionals	4.0	1.0	4.0	6.9	3.4	5.3	6.4	10.3	4.6	6.7
Personal Care Workers in Health Services	1.0	2.0	1.0			10.7	3.2	1.1	1.1	
Health Researchers & Educators	15.0	12.0	13.0	3.4	12.6	4.3	13.9	13.7	12.6	14.7
Health Care Managers	12.0	14.0	10.0	14.9	10.3	11.7	14.9	12.6	9.1	9.3
Health Care Administration & Operations	2.0	7.0	2.0	4.6	2.3	1.1	8.5	2.3	6.9	8.0
Health Informatics Technicians	7.0	5.0	7.0	13.7	4.6	3.2	11.7	11.4		10.7

	Mexico	Netherlands	Poland	Russian Federation	South Africa	Spain	Sweden	Ukraine	United Kingdom	United States
Medical Doctors	16.0	15.0	12.6	10.3	16.0	16.0		5.3	14.9	16.0
Nursing & Midwifery Professionals	9.0	12.0	5.7	3.4	9.6	12.8	10.2	2.1	6.9	11.4
Dentists	12.0	16.0		6.9			16.0	14.9	16.0	
Pharmacists	2.0	14.0	6.9	12.6	14.9	11.7		12.8	13.7	14.9
Env. and Occupational Health . Professionals	11.0	10.0	8.0	13.7	13.9	14.9		6.4	8.0	
Physiotherapists	1.0	8.0	11.4		8.5	4.3			12.6	12.6
Other Health Professionals	7.0	9.0	4.6	14.9	7.5	5.3	5.8	11.7	5.7	8.0
Medical and Pharmaceutical Technicians	8.0	6.0	10.3	8.0	5.3	9.6	8.7	7.5	2.3	5.7
Nurses & Midwifery Associate Professionals	3.0	3.0		1.1	11.7	8.5	11.6	1.1	9.1	6.9
Community Health Workers	6.0	7.0	3.4	2.3	6.4	10.7	1.5	3.2	10.3	2.3
Other Health Associate Professionals	10.0	4.0	2.3	5.7	4.3	3.2	2.9	4.3	3.4	4.6
Personal Care Workers in Health Services	15.0	1.0	1.1		1.1	1.1		10.7		1.1
Health Researchers & Educators	14.0	11.0	16.0	9.1	10.7	13.9	13.1	8.5	11.4	13.7
Health Care Managers	13.0	13.0	14.9	16.0	12.8	7.5	14.5	13.9		10.3
Health Care Administration & Operations	4.0	5.0	13.7	4.6	2.1	2.1	7.3	9.6	1.1	3.4
Health Informatics Technicians	5.0	2.0	9.1	11.4	3.2	6.4	4.4	16.0	4.6	9.1

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AIAS is a young interdisciplinary institute, established in 1998, aiming to become the leading expert centre in the Netherlands for research on industrial relations, organisation of work, wage formation and labour market inequalities. As a network organisation, AIAS brings together high-level expertise at the University of Amsterdam from five disciplines:

- Law

- Economics

- Sociology

- Psychology

- Health and safety studies

AIAS provides both teaching and research. On the teaching side it offers a Masters in Comparative Labour and Organisation Studies and one in Human Resource Management. In addition, it organizes special courses in co-operation with other organisations such as the Netherlands Centre for Social Innovation (NCSI), the Netherlands Institute for Small and Medium-sized Companies (MKB-Nederland), the National Centre for Industrial Relations 'De Burcht', the National Institute for Co-determination (GBIO), and the Netherlands Institute of International Relations 'Clingendael'. AIAS has an extensive research program (2004-2008) on Institutions, Inequalities and Internationalisation, building on the research performed by its member scholars. Current research themes effectively include:

- Wage formation, social policy and industrial relations

- The cycles of policy learning and mimicking in labour market reforms in Europe

- The distribution of responsibility between the state and the market in social security

- The wage-indicator and world-wide comparison of employment conditions

- The projects of the LoWER network
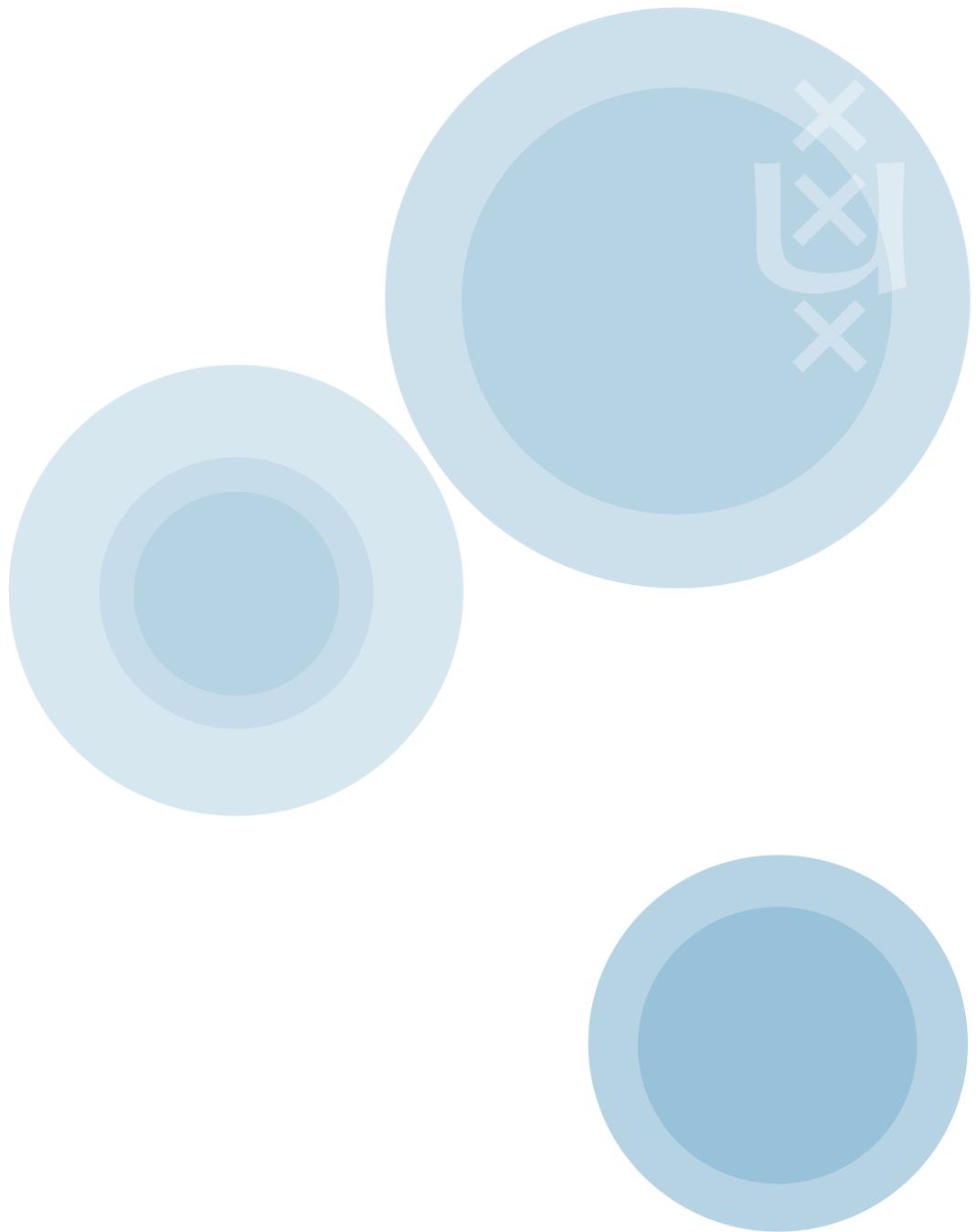
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