



Nurse migration in Europe—Can expectations really be met? Combining qualitative and quantitative data from Germany and eight of its destination and source countries

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ABSTRACT

Background: While nurse migration has received considerable political attention since the EU enlargements in 2004 and 2007, most research concentrated on the specific migration motives and the impact on health care systems, while little research focused on the experiences of nurses abroad or combined these experiences with research on working conditions in hospitals.

Objectives: To test whether the combination of qualitative and quantitative data on motives to migrate and to leave the current hospital, respectively, provides sufficient information (1) to analyse working conditions in Germany compared to five destination and three source countries, (2) to verify or falsify the assumption that working conditions in destination countries are better than in source countries, and (3) to identify sound strategies for workforce planning.

Design and data sources: (a) Relevant push factors for migrating from Germany were identified via an online survey, focus groups, and telephone interviews. (b) Eight factors were operationalised using items selected from the revised Practice Environment Scale of the Nursing Work Index (PES-NWI) and the Maslach Burnout Inventory (MBI). (c) The impact of these push factors on the stated “intention-to-leave” of 1508 hospital nurses in Germany was assessed using multivariate data analysis. (d) Descriptive statistics were used to illustrate comparisons across all countries using a total sample of 27,451 nurses from 328 hospitals.

Results: (1) All push factors show a positive association with the risk for nurses to leave their current jobs, with “poor working environment” having the most pronounced relationship (OR 3.235, 95% CI 2.434–4.301). (2) On average, four out of five destination countries receive better ratings than Germany (with 5/5 for “sufficient nursing staff”, “recognition”, “decision-making power”, and “collaboration between nurses and physicians” but only 1/5 for “advanced training prospects”), while two out of three source countries receive worse ratings than Germany. (3) Results suggest that the way to retain and attract nurses on the short-term is to invest in better working environments. **Conclusions:** By successfully linking qualitative and quantitative research, new insights about factors for the movement of nurses can be gained. German nurses would indeed find more satisfying conditions abroad in most cases—findings which encourages a revision of work-related aspects in German hospitals.

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What is already known about the topic?

- Much is known about the underlying motives (“push and pull factors”) for international nurse migration, as well as the impact of such migration on health care systems.

- A poor work environment for nurses seems to be associated with the intent-to-leave the job among nurses.

What this paper adds

- The combination of qualitative and quantitative data from the research strands on migration and work environment shows that the same push factors which are relevant for nurse migration may also be responsible for increased rates of intention-to-leave hospitals in Germany.
- The analysis of push factors across respective destination and source countries reveals that nurse migration in general correlates well with differences in assessed working conditions between countries. However, not every destination country offers improvements over Germany for all examined push factors, nor does Germany fair better than all of its source countries.

1. Background

Since an increasing number of nurses cross borders every year in search of better working and living conditions, career prospects, or even just new experiences, they have become important actors in a growing, competitive global labour market. Due to the EU enlargements in 2004 and 2007 and the accession of less wealthy countries, such as Poland, Romania or Bulgaria, which created greater socio-economic diversity, the movement of nurses between European countries has grown significantly and has finally brought the debate on the impact of migration on European health care systems into the political agenda (Aiken et al., 2004; Kingma, 2006). In Germany, the extent of nurse migration to the country is relatively limited compared to other major European destination countries and, despite other initial expectations, the EU enlargements have until now not had the expected influence in bringing more nurses into the country. In fact, the number of foreign nurses and midwives in Germany decreased from 3.7% in 2003 (42,000) to 3.4% in 2008 and the share of nursing assistants fell from 7.6% to 7.0% (Ognyanova, 2011). Data on the outflow from Germany are scarce, but according to estimates of the German Nurses Association, not more than 1000 nurses leave the country each year. This, however, could change in the future as there has been some recent movement in the debate on academic education as a possible pathway into the nursing profession, which would finally follow European and international trends and could better enable increasing outbound migration. Additionally, in view of the fact that nurse-related working conditions have measurably deteriorated in Germany's hospitals and a critical shortage of nurses already exists in Germany, which is likely to worsen in upcoming years, the approaches that workforce planning take to attract and retain nurses need to be thoroughly reviewed (Zander et al., 2012).

2. Objectives

Since attracting young people to join the nursing workforce is an insufficient means of meeting future

workforce challenges, the interest in both decreasing outbound nurse migration and increasing inbound migration is expected to grow, which demands a careful analysis of working conditions in both attractive destination countries and source countries. So far, most research on European nursing migration has largely concentrated on the specific migration motives and the impact migration has on health care systems, whereas there is limited research on the actual experiences of nurses in their destination countries. Analysing the situation for nurses in Germany and in some of its most important destination and source countries in comparison may be a promising approach to both identifying efficient strategies to be implemented in Germany and also refuting wrong expectations of better working conditions elsewhere. Therefore, the purpose of this study is:

- to analyse and compare the working conditions for nurses in Germany and some of its most popular destination and source countries;
- to verify or falsify the general presumption of better working conditions in destination countries and poorer working conditions in source countries; and finally
- to identify ideas and strategies for German workforce planning.

3. Methods

The methodology includes two major steps. First, a relevant database has been identified by linking and validating the research results of two large EU studies using multivariate data analysis. Second, descriptive statistics have been used to illustrate comparisons across countries.

Data source: Two EU workforce projects (PROMeTHEUS and RN4Cast).

The study is based on the research output of two recent EU projects funded through the Seventh Framework Programme (7FP), namely PROMeTHEUS (Health Professional Mobility in the European Union study) and RN4Cast (Registered Nurse Forecasting). The PROMeTHEUS study was conducted between 2009 and 2011 in 17 European countries and provided qualitative data on the dimensions of health professional mobility, the dynamics emerging from EU enlargement, the balance of losing and receiving health professionals, the motives and drivers of mobility, and the impacts on health systems. As part of the study, one online survey, two focus groups and 20 standardised telephone interviews were conducted with nurses of various nationalities to provide information on the motives for nurses to migrate to and from Germany. RN4Cast is a representative multi-country, cross-sectional study which was conducted in 15 countries also between 2009 and 2011. One of the study's major goals was to significantly link workforce planning methods in inpatient nursing to patient safety, and quality of nursing care, as well as to focus on self-reported characteristics of the nurse work environment, such as adequate resources, job satisfaction, emotional exhaustion, and intention to leave. Therefore, a total of 33,541 nurses from 486 hospitals were included to assess and compare the situation for nurses across all

countries. The theoretical background and methods for both studies are discussed in Wismar et al. (2011) (PROMeTHEUS) and Sermeus et al. (2011) (RN4Cast).

PROMeTHEUS identified the push factors responsible for outbound migration from Germany: bad working conditions such as a poor working environment, low recognition, low remuneration, limited decision-making power, lack of collaboration between nurses and physicians, as well as heavy workloads and poor advanced training opportunities. Major destination countries were also identified and include Switzerland, Scandinavian countries, the Netherlands, Austria, and the United Kingdom (Ognyanova and Busse, 2011). Migration flows into Germany come mainly from Austria, Eastern Europe, Southern Europe, and African countries, mostly due to reasons such as remuneration, difficult working and living conditions in their home countries, low recognition, limited possibilities for professional development, as well as private and family reasons (Kautsch and Czabanowska, 2011; Buchan and Perfilieva, 2006; Leśniowska, 2005).

With the exception of Austria, the identified destination and source countries overlapped in both projects, which gave us a solid database. We therefore included 27,451 nurses from 328 hospitals in Germany (DE) and five of its destination countries (United Kingdom [UK], the Netherlands [NL], Sweden [SE], Norway [NO], and Switzerland [CH]) as well as three of its source countries (Poland [PL], Greece [GR], and South Africa [ZA]) (Table 1).

3.1. Combining the results

The underlying hypothesis for linking and validating the identified push factors for migration of German nurses (PROMeTHEUS) by the survey data collected in hospitals (RN4Cast) was that work-related reasons that drive nurses out of a country would be the same as why nurses leave hospitals. Thus, we matched the above-listed push factors emerging from PROMeTHEUS with corresponding items from the RN4Cast survey (Table 2). The push factor “high workload” was not an explicit item of the RN4Cast survey so it was operationalised by using the items “perceived staff shortage” and “high emotional exhaustion”. Perceived staff shortage was measured using the revised Practice Environment Scale of the Nursing Work Index (PES-NWI), which consists of 32 Likert-type questions (from “Strongly Disagree” to “Strongly Agree”) representing five sub-scales focusing

on perceived staffing adequacy, nurse–physician relationship, leadership, nurse foundations for quality of care, and participation in hospital affairs. Emotional exhaustion describes the nurses’ feelings of psychological depletion due to work burden and was measured using the Emotional Exhaustion subscale of the Maslach Burnout Inventory (MBI) (Poghosyan et al., 2010). The remaining push factors were parameterised using items of the PES-NWI (decision-making power, recognition, and collaboration between nurses and physicians) or single ratings, all measured by a four-point answering scale, such as work environment (1 = poor, 2 = fair, 3 = good, and 4 = excellent), satisfaction with remuneration, and advanced training opportunities (both 1 = very dissatisfied to 4 = very satisfied).

3.2. Statistical analysis

As a dependent variable for the validation we used the survey item “intent-to-leave” (the hospital) as an approximation to estimate the risk for German nurses to leave the country. Binary logistic regression was used to estimate the odds ratios for the stated intention to leave. Therefore, the explanatory variables (push factors) were dichotomised into “poor” and “fair” or “very dissatisfied” and “dissatisfied”, versus “good” and “excellent” or “satisfied” and “very satisfied”, and recoded into binary variables. Age, years of nursing, and gender – also established through the RN4Cast survey – were added as control variables. We included the responses of $n = 1512$ German nurses in the analysis. All analyses were performed using SPSS Statistics version 20.

4. Results

All eight explanatory variables show a positive association with the risk for nurses to leave the country, only with the predictors “decision-making power” and “remuneration” not being statistically significant (Table 3).

4.1. Results across countries

After the successful validation of push factors, we were able to conduct the comparison of the working conditions for nurses across all countries regarding the tested push factors. Even though push factors for foreign nurses coming to Germany might differ from the German ones,

Table 1
Characteristics of nurse respondents across Germany and its destination and source countries ($n = 328$ hospitals).

Variable	DE $n = 49$	Destination countries (number of hospitals)					Source countries (number of hospitals)		
		UK $n = 46$	NL $n = 26$	SE $n = 79$	NO $n = 35$	CH $n = 35$	PL $n = 30$	GR $n = 24$	ZA $n = 4$
Number of respondents	1512	2990	2217	10,133	3752	1632	2605	367	2243
Age (years)									
Mean	38.8	39.6	36.9	39.7	35.4	34.8	40.6	35.9	41.4
Years in nursing									
Mean	16.5	13.9	14.1	11.4	8.5	11.1	18.8	12.9	15.2
Gender (%)									
Male	10.7	7.8	8.1	6.9	6.2	8.2	0.4	11.0	5.2

Table 2
Operationalisation of push factors.

Push factor (PROMeTHEUS)	Dimensions (RN4Cast)	Item	Question in RN4Cast survey	Rating scale	
High workload	Perceived staff shortage (PES-NWI)	A_1_9	“Please indicate the extent to which you agree that each of the following features is present in your current job: Enough registered nurses on staff to provide quality patient care”	1 = strongly disagree to 4 = strongly agree	
	Emotional exhaustion (MBI)		“Please mark the response that best describes how frequently you have each feeling in relation to your current job in this hospital”:		
		A_9_1	“I feel emotionally drained from my work.”	1 = never to 7 = every day	
		A_9_2	“I feel used up at the end of the workday.”	1 = never to 7 = every day	
		A_9_3	“I feel fatigued when I get up in the morning and have to face another day on the job.”	1 = never to 7 = every day	
		A_9_6	“Working with people all day is really a strain for me.”	1 = never to 7 = every day	
		A_9_8	“I feel burned-out from my work.”	1 = never to 7 = every day	
		A_9_13 A_9_14	“I feel frustrated by my job.” “I feel I'm working too hard on my job.”	1 = never to 7 = every day 1 = never to 7 = every day	
A_9_16 A_9_20	“Working directly with people puts too much stress on me.” “I feel like I'm at the end of my rope.”	1 = never to 7 = every day 1 = never to 7 = every day			
Limited decision-making power	Restricted decision-making power (PES-NWI)	A_1_6	“Please indicate the extent to which you agree that each of the following features is present in your current job: Opportunity for registered nurses to participate in policy decisions”	1 = strongly disagree to 4 = strongly agree	
Low recognition	Low recognition (PES-NWI)	A_1_14	“Please indicate the extent to which you agree that each of the following features is present in your current job: Praise and recognition for a job well done”	1 = strongly disagree to 4 = strongly agree	
Lack of collaboration between nurses and physicians	Lack of collaboration between nurses and physicians (PES-NWI)	A_1_17	“Please indicate the extent to which you agree that each of the following features is present in your current job: A lot of team work between nurses and physicians”	1 = strongly disagree to 4 = strongly agree	
Poor working environment	Poor working environment	A_3	“How would you rate the work environment at your job in this hospital (such as adequacy of resources, relations with coworkers, and support from supervisors)?”	1 = poor to 4 = excellent	
Low remuneration	Low remuneration	A_4_5	“How satisfied are you with the following aspects of your job: Wages”	1 = very dissatisfied to 4 = very satisfied	
Poor advanced training opportunities	Poor advanced training opportunities	A_4_6	“How satisfied are you with the following aspects of your job: Educational opportunities”	1 = very dissatisfied to 4 = very satisfied	

we applied the same factors for nurses coming from source countries to offer a comprehensive analysis on the basis of comparable information. Fig. 1 shows the country-specific deviation (%-points) in the characteristics of the push factors related to Germany, which is the baseline. For better understanding and visualisation of the particular results, upwards-pointing bars show when nurses in the specific countries rate a particular factor better than those

in Germany, whereas downwards-pointing bars indicate a worse rating. Table 4 indicates the characteristics of push factors across all examined countries.

4.1.1. Comparison of push factors across destination and source countries

When comparing the characteristics of the push factors, it becomes apparent that not every destination country

Table 3

Odds ratios (OR) with 95% confidence levels for push factors in Germany, adjusted for age, years of nursing, and gender.

Push factors/variables (ref = no/0)	OR	95% CI		p-Value
		Lower	Upper	
Poor work environment	3.235	2.434	4.301	<.001
Emotionally exhausted	2.445	1.860	3.215	<.001
Low recognition	1.769	1.299	2.407	<.001
Poor advanced training prospects	1.686	1.278	2.225	<.001
Lack of collaboration between nurses and physicians	1.647	1.265	2.145	<.001
Perceived staff shortage	1.553	1.048	2.302	.028
Low remuneration	1.326	0.996	1.766	.054
Restricted decision-making power	1.193	0.852	1.670	.305

offers improvements over Germany for all examined push factors, nor does Germany fair better than all of its source countries. With respect to the push factors “sufficient nursing staff”, “decision-making power”, “recognition”, and “collaboration”, the situation in all of the examined destination countries is perceived as better than in Germany. The remaining factors, however, are perceived as partially worse. “Dissatisfaction with remuneration” is rated worse in Sweden (80%) and Norway (78%) compared to Germany (66%). Nurses in Sweden and the UK also rated their “working environment” (57% and 56%) poorer than nurses in Germany (52%) and “emotional exhaustion”, which is 2.5 times as high in nurses with an intent to leave than those without (cf. Table 3), is also more pronounced in the UK (42%) and Sweden (29%). In the case of “advanced training prospects”, nurses’ ratings are worse even in four of the destination countries compared to Germany, where dissatisfaction is rather low at 30%.

The situation for the source countries is similarly inconclusive as they would clearly find improvements in

Germany regarding some of the aspects (Fig. 1). For other aspects, however, their ratings are substantially better, e.g. “perceived staff shortage” in Greece (65%) and South Africa (73%). Also “decision-making power” is perceived to be better in South Africa (61%) and Poland (67%), with South Africa being the country with the best rating across all countries. Greek and South African nurses in search for “recognition” would also not find much of an improvement in Germany.

According to the country-specific results (Fig. 1 and Table 4), all countries can be ranked subject to the levels of “improvement” they offer or receive. Thus, nurses in Germany would be best off in Switzerland with improvement chances in all of the eight factors, followed by the Netherlands with better ratings in seven of the eight factors and Norway in six. With respect to the UK and Sweden, nurses in Germany would still be able to experience equal or slightly better working conditions in five of the eight factors. Viewing the examined source countries in relation to Germany, nurses in Poland and

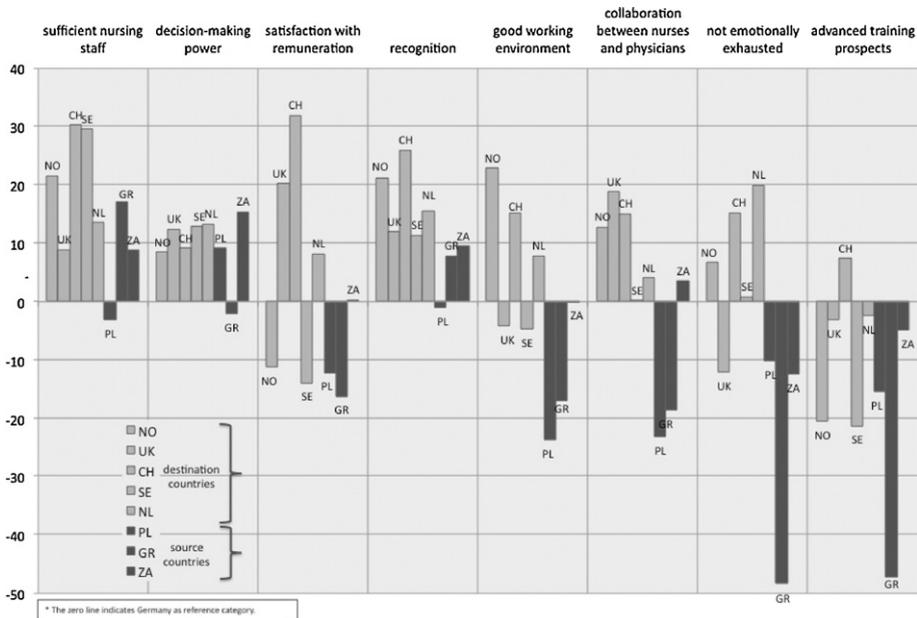


Fig. 1. Nurse-rated performance in source and destination countries, with positive numbers indicating better results than Germany and negative numbers indicating worse results. NB: Factors are sorted by level of negative answers within Germany from left (worst) to right; for actual ratings of factors in the nine countries see Table 4.

Table 4
Characteristics of push factors across Germany and its source and destination countries.

Push factor/variable	DE	Destination countries					Source countries			Mean ± SD
		UK	NL	SE	NO	CH	PL	GR	ZA	
Perceived staff shortage (%)	82.1	73.3	68.6	52.6	60.6	51.9	85.3	65.0	73.4	68.1 ± 11.8
Restricted decision-making power (%)	76.0	63.7	62.8	63.1	67.6	66.9	66.9	78.1	60.7	67.3 ± 6.0
Low remuneration (%)	66.3	46.1	58.2	80.3	77.6	34.4	78.6	82.6	66.1	65.6 ± 16.7
Low recognition (%)	64.8	52.9	49.4	53.5	43.7	38.9	65.9	57.0	55.4	53.5 ± 8.8
Poor working environment (%)	51.8	56.0	44.0	56.6	29.0	36.6	75.6	68.9	51.9	52.3 ± 14.6
Lack of collaboration between nurses and physicians (%)	42.0	23.2	38.0	41.9	29.3	27.0	65.3	60.6	38.5	40.6 ± 14.3
Emotional exhaustion (%)	30.1	42.2	10.2	29.4	23.5	14.9	40.3	78.4	42.6	34.6 ± 18.1
Poor advanced training prospects (%)	29.9	33.1	32.4	51.3	50.5	22.6	45.4	77.3	34.8	41.9 ± 16.4

Greece score worse in seven and six push factors respectively, while nurses in South African do only in three.

Across the eight factors and the eight examined flows of migration, the situation in the receiving countries is rated as better in 73% of the cases – 77% for outbound migration from Germany to its destination countries and 67% for inbound migration from its source countries.

4.1.2. Source countries worse than destination countries – theory or reality?

By using the example of Germany, Fig. 2 partly confirms the theory of better situations for nurses in destination countries than in source countries. The three circles indicate average values for the push factors. The middle circle illustrates Germany, the outside circle illustrates destination countries, and the inside circle illustrates source countries. Derived from these average results, German nurses would, on average, indeed be better off in their destination countries except for “advanced training prospects”. When considering Germany as a destination country for Poland, Greece, and South Africa, the situation looks different as German ratings for “decision-making power”, “recognition”, and “perceived staff shortage” are below the average for its source countries.

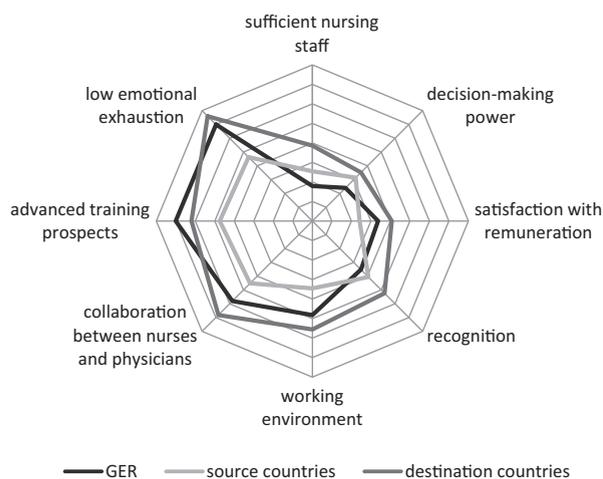


Fig. 2. German push factors in relation to destination and source countries. *NB:* The worst possible results constitute the origin, while the most positive results constitute the outer line.

4.1.3. Lessons learned for workforce planning

The results (Table 4) suggest that in order to retain current nursing staff and attract new nurses, investing better working conditions should be carefully considered, as well as addressing reasons for emotional exhaustion and poor recognition. These results are in line with an increasing amount of recent national and international evidence that significantly associates the nurse working environment and patient-to-nurse ratios with the intent-to-leave the hospital as well as with satisfaction, emotional exhaustion, and quality of care (Aiken et al., 2011; Van den Heede et al., 2011). The increase in and underlying reasons for emotional exhaustion among nurses need to be addressed in Germany, especially since the number of nurses reporting emotional exhaustion has doubled within the last ten years (Zander et al., 2012). Furthermore, it has been even significantly associated with nurses' intent-to-leave their profession due to job dissatisfaction, which was analysed by Heinen and colleagues for nurses within and across European countries (Heinen et al., 2012). The US Magnet Hospital Concept awards the magnet status to those hospitals where nursing care quality is very high, where nurses have a high level of job satisfaction and where there is a low turnover rate among nursing staff. Even though the implementation of such a concept in Germany would fail due to structural and cultural differences between the German and US system, working on the “basis” of the hospitals and thus introducing a business culture based on a positive working environment, which would promote respect, fruitful collaboration, and staff participation, could help to enhance the identification of nurses with the hospital, to decrease intent-to-leave, and to create responsiveness towards the targets of the hospital (Friedrich and Poigné, 2012). Since improving nurse-to-patient ratios, however, is a rather long-term and costly strategy, it could be worthwhile to first examine countries where staffing is rated as adequate, such as in Switzerland or Sweden, or where the nurse work environment received the best ratings, such as in Switzerland or Norway, to see how workforce planning is organised and where strategies could be adapted.

Many of the problems identified by German nurses have also been reported in PROMeTHEUS' focus groups by foreign nurses who migrated to Germany. Moreover, foreign nurses reported the initial difficulties that they faced when they first began nursing in Germany, for

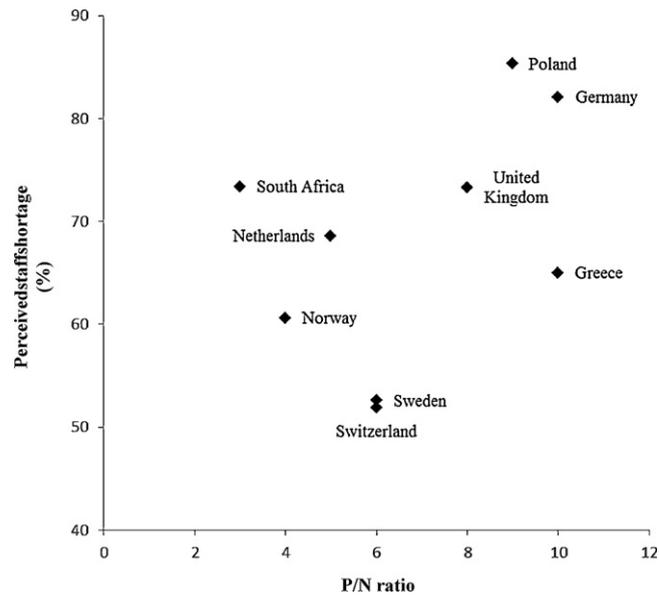


Fig. 3. Perceived staff shortage and patient-to-nurse ratio.

example, regarding language skills, recognition of qualifications, and nursing tasks, as well as different responsibilities. Assisting foreign nurses with the first steps to establishing a career in Germany might also pay off in terms of higher migration numbers.

5. Discussion

Since the results of this study are based on subjectively measured data only, interpretation and discussion of the individual push factors should take differing country-specific aspects into careful consideration. For example, with respect to the satisfaction rates for “advanced training prospects”, it seems that Switzerland and Germany are among those countries with a rich infrastructure for advanced training prospects, since dissatisfaction is relatively low (23% and 30%), compared to countries such as Sweden where dissatisfaction is rather high with 51% (Table 4). However, Sweden offers a bachelor’s degree as basic training and degree-holding nurses have different career options to decide upon graduation, e.g. whether they would like to work in a hospital, in an educational setting, or hold a management position. Compared to Germany where a nurse’s education usually only requires the completion of secondary school (10th grade) and takes place outside the university framework in nursing schools (theoretical and practical training) and hospitals (on-the-job training) with fewer prospects of career advancement, it seems astonishing that Swedish nurses are so dissatisfied. The answer might be found in differing expectations of nurses towards advanced training due to the level of basic training they receive. Accordingly, the comparably high satisfaction rate in Germany may suggest that the majority of nurses expect less from their advanced training prospects and are also less demanding. Instead they concentrate on working and

not on life-long learning, though advanced training is fairly accessible for nurses in Germany who are interested. However, there has been a trend in recent years towards academic education for nursing in Germany and currently there are 37 higher education institutions offering bachelor degree programmes in which students earn a bachelor’s degree in addition to the professional title (Stöcker and Reinhart, 2012). Furthermore, the role of nurses in health care, which has been long debated, is slowly changing. This implies that new roles are arising and task-shifting from physicians to nurses is being reviewed. Together with the reform of nursing education, which suggests that the education be introduced at the university level as a second pathway into the profession, it remains to be seen if these developments will influence the satisfaction and expectations of German nurses of their advanced training. Poor ratings of advanced training may also be due to the mismatch between expectations that managers have upon the work and the qualifications of a nurse and what training opportunities they are prepared to offer them. In this respect, nurses often need to get further training outside of the hospital, such as in universities, in many cases without funding.

To further analyse and strengthen the information of the item “perceived staff shortage”, we linked ratings with patient-to-nurse ratios (Fig. 3), also measured by the RN4Cast survey. Accordingly, the best patient-to-nurse ratio is offered in South Africa with only 3 patients per nurse, followed by Norway with 4, the Netherlands with 5, Switzerland and Sweden with 6, the UK with 8, Poland with 9, and finally Germany and Greece with 10 patients per nurse. With the exceptions of Switzerland, the Netherlands, and South Africa, the patient-to-nurse ratios support the perceptions of staffing adequacy in the examined countries. While in Switzerland, a moderate patient-to-nurse ratio of 6 is associated with the highest

number of nurses being satisfied with their staff resources, nurses in South Africa and the Netherlands rate their staffing adequacy as insufficient, despite their comparatively advantageous patient-to-nurse ratio of 3 and 5, respectively. This leads into the discussion of whether nursing personnel are put to the best possible use in hospitals.

To validate statements regarding remuneration, we linked the nurse's perception of her/his own salary with average wages for nurses in particular countries. According to OCED^{2,3} data for 2009 (OECD, 2011), the remuneration for nurses in most of the countries is above the average wage of all workers in their country. Thus, in Germany⁴ a nurse's income is 17% higher, in Poland 15%, in the UK 10%, in Sweden⁵ 8% (2010), in Greece 4%, and in Norway 3%. In Switzerland and South Africa, the remuneration is just at the average of all workers, while nurses in the Netherlands earn 3% less than average wage. The comparatively low satisfaction rate in Germany when contrasted with its relatively high average income for nurses in comparison to Switzerland can be explained by considerably higher average incomes in Switzerland which even outweigh higher living expenses. In Norway and Sweden, the average wages for all workers are on about the same level as in Switzerland (Statistics Sweden, 2012; Öffentliches Personal Schweiz, 2012); however, nurses in both countries rate their remuneration far from appropriate (Table 4). To explain these huge discrepancies, the VAT could be used as a possible indicator, since the level of VAT is influencing the particular purchasing power and VAT differences between Switzerland on the one hand (8%) and Norway/Sweden on the other (25%) are pronounced.

6. Conclusions/recommendations

The present study successfully linked qualitative and quantitative research results from two recent EU funded studies that had initial aims which were independent from each other. By linking the information gathered in both studies we were thus able to demonstrate how to make best use of both research results and public money spending. Furthermore, this study allowed us to introduce an innovative approach to current migration research, as we validated our assumption that push factors relevant for nurse migration can also be held responsible for increased intent-to-leave hospitals.

We analysed the question whether or not expectations and hopes nurses have for certain destination countries are based on real improvement chances regarding specific working conditions. According to

our findings, nurses in Germany would, on average, indeed find more satisfying conditions abroad with the exception of advanced training prospects. This result underlines a general lack of understanding of the potential benefit of better qualified nurses for health outcomes in Germany. However, country-specific aspects and political developments need to be considered carefully, as nurse ratings may not fully reflect the actual situation in a country. Moreover, we showed that the nurse work environment has the strongest impact on intent-to-leave. This suggests that investing in the working environment is a key strategy in workforce planning, particularly as attracting qualified and motivated nurses might be hampered by the upcoming reform of the German education system which will offer new career prospects outside of the hospital in the near future.

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Ethical approval: Depending on national legislation, the study protocols for RN4Cast and PROMeTHEUS were approved by either central ethical committees (e.g. nation or university) or local ethical committees (e.g. hospitals). The consortia of both studies have developed strict criteria (included in the project proposals and additional internal documents) regarding the sampling, the storage, flows and access of the data to safeguard the security, privacy and confidentiality.

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² No OECD data are available for Sweden and Switzerland – for data on Sweden refer to Statistics Sweden (2012) and for data on Switzerland refer to Öffentliches Personal Schweiz (2012).

³ The remuneration of nurses refers to average gross annual income of nurses working full-time, including social security contributions and income taxes payable by the employee. It should normally include all extra formal payments, such as bonuses and payments for night shifts, and overtime.

⁴ OECD data for Germany refer to year 2006.

⁵ This excludes compensation for shift work, etc.

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