



Retention of Staff in Nordic Healthcare— A Literature Review¹

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ABSTRACT

The Nordic healthcare sector faces severe staff shortages. This paper is based on a rapid literature review, including 73 papers published between 2010 and 2020, addressing retention issues in the sector. The aim is to compile and discuss empirical research on retention of staff within Nordic healthcare. The paper fills an existing gap providing a comprehensive picture of crucial factors for retaining staff in the sector. Findings include that most studies were quantitative, often surveys, and mostly focusing on registered nurses and/or physicians/medical doctors. Further, high control, high levels of social support, good leadership, satisfactory opportunities for professional development, organizational continuity, reasonable demands, including absence of heavy physical exertion, were all shown to positively impact retention rates. While the results to some extent were as expected, they highlight key areas for healthcare employers, as well as policymakers at various levels, to concentrate on for improving staff retention within their organizations.

KEYWORDS

Healthcare / literature review / Nordic healthcare / staff retention

Introduction

The Nordic healthcare systems share many similarities; they are characterized by public funding and in some parts also by public ownership, mostly supplied by staff from tuition-free education, high levels of professionalization, and significant inter-country labor market integration (typically, staff move between neighboring countries to work in different hospitals and care facilities). They also face similar difficulties and challenges regarding, for example, the ability to provide equal healthcare in rural and sparsely populated parts of the countries, and the introduction and implementation of, and adaption to, different organizational and financial regimes such as New Public Management (NPM) and Public-Private Partnership (PPP) (see, e.g., Carlson & Hatti 2016) and societal and/or political trends such as digitalization, neoliberalism, professional heterogeneity, and globalization (see, e.g., Susskind & Susskind 2015; Calenda & Bellini 2021; Carlson & Hatti 2016). Further, the Nordic healthcare systems also face similar severe, albeit uneven, staff shortages (see Statistics Sweden 2022; Swedish National Board of Health and Welfare 2022, 2023; OECD 2021 a, b, c, d; NOU 2023; Norwegian Government 2023). Rural areas in the Nordics, which are often located in the Arctic and Subarctic north, are particularly vulnerable to these shortages (see OECD 2021 a, b, c, d; Franzén & Andersson 2021; Giacometti & Cuadrado 2020). As an

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example, in the northernmost Swedish county, Norrbotten, 18 of 22 healthcare professions have staff shortages (Swedish National Board of Health and Welfare 2022).

Access to healthcare staff, or skills supply in the healthcare sector, covers many aspects at different levels, from the individual organization's ability to attract, recruit, and retain staff, to the national education system and its ability to offer adequate education matching the needs of the labor market, as well as full enrolment in educational programs. For example, the national education system is tasked with ensuring an adequate supply of suitably trained staff. However, this objective alone proves insufficient, as each individual organization must also provide satisfactory employment and working conditions to effectively attract, recruit, and retain staff. As a cornerstone of the skills supply issue, the focus of this paper is the employer organizations' capacity to *retain* staff. As such, it is relevant to systematically compile existing knowledge about *how to* retain healthcare staff. To this end, this literature review focuses on the issue of retaining staff within healthcare organizations.

Studies indicate that many healthcare professionals are considering leaving their positions and/or profession due to unsatisfactory working conditions and terms of employment (see Woodward & Willgerodt 2022, for evidence from the United States; for Europe, see Aiken et al. 2013). This is a vicious circle, as staff shortages in the healthcare system result in many problems, including the inability to provide equal healthcare to residents throughout the country as well as work employment environment issues (Swedish National Board of Health and Welfare 2023). Where there is a staff shortage, the work environment is often challenging, due to the workload being handled by a limited number of employees (Swedish Association of Health Professionals 2022). This can even take the expression of a collective flight from employers; midwifery stands as one concrete example of a profession where the work environment is so challenging that clusters of staff resign (Hansson 2021).

These staff-shortage problems also have a great effect on the surrounding society as they lead to some regions being considered as less attractive to live and work in than others (Ejdemo & Parding 2018; Parding et al. 2022). Access to healthcare staff is not just important for individual healthcare organizations but also for society at large, including organizations in other industries and individuals. Add to this the extraordinary situation the healthcare systems experienced due to the COVID-19 pandemic, in various areas, including elderly care, home-based care, emergency and in-patient care, numerous staff members have encountered drastically increased workloads (see Fernemark et al. 2022; Theorell 2020). Theorell, for example, argues that '[t]his situation gives rise to the worst possible work environment for health care staff. All of the bad classical psychosocial risk factors in the work environment are magnified – extremely high demands, complete lack of control, lack of institutional support in many workplaces, and in addition lack of reward' (2020, p. 193). Similar findings emerged from a literature review from the Swedish Agency for Work Environment Expertise (2022), where several challenges in the healthcare sector in relation to the pandemic were uncovered: high workload, complicated tasks, extreme uncertainty, rapid restructuring of organizations, and sudden changes in work methodologies.

The healthcare sector is complex, with many staff and with many types of organizations, such as home care, primary care, elderly care and hospital-based care (with all its different inherent organizations). The sector is also influenced in different ways by new technologies (e.g., digitalization), new knowledge needs, sustainability requirements, systemic changes, and demographic challenges, and the sector includes many professions,

mainly dominated by women. The sector's size and complexity mean that the ability to retain staff can vary as the result of factors influenced by a range of conditions. Many studies focus on work environment and working conditions in the healthcare sector, but these are often in the form of case studies and studies that do not take into account surrounding context. Moreover, many studies focus on problems rather than solutions. This literature review addresses a gap in the literature by reviewing studies on staff retention done across various sectors within the healthcare sector, systematically compiling results, and focusing on solutions (i.e., *how to* retain, rather than *how not to*). We thus provide a comprehensive picture of the crucial factors for retaining staff in the sector.

As such, the aim of this article is to compile and discuss previous empirical research on retention of staff within Nordic healthcare. Specifically, we have three main aims of:

- 1) Compiling the main currents in research on retaining staff in Nordic healthcare in terms of context and objects of study, methodological approaches, and theoretical perspectives.
- 2) Presenting and discussing findings and central aspects in the research with relevance to the ability to retain staff within Nordic healthcare.
- 3) Identifying gaps in the current knowledge and make recommendations for future research on retaining staff in Nordic healthcare.

Method and selection criteria

The applied method and selection criteria are described below, starting with a description of the literature search and then the inclusion and exclusion criteria. This is followed by a description of how the included publications were analyzed, and finally the methodology is discussed.

Literature search

This article is based on a literature review conducted within a project aimed at compiling research from the Nordics on what impacts the ability to attract, recruit, and retain staff within the healthcare system. As the article focuses on retaining staff, the relatively few studies that only focus on attracting and/or recruiting staff have been excluded. The present overview builds on scholarly literature in the form of peer-reviewed articles, that is, 'grey literature' was not included; the focus has been on studies presenting results from primary data and that have undergone revision by academic peers. This to strengthen the quality and robustness of the current study.

This *rapid review* (Grant & Booth 2009) is based on systematic literature searches conducted by two information specialists¹ in consultation with the article authors. A rapid review assesses what is already known on the topic in focus using systematic review methods. In addition, a rapid review analysis provides a general description of the studied material and presents the overall orientation of the same. However, a rapid review is less extensive and uses fewer steps than a traditional literature review (Grant & Booth 2009). For example, a rapid review does not assess the quality of the included studies in detail. Instead, the focus is on compiling and synthesizing the research available in a field and critically discussing the quality of the synthesized research at an overall level (cf. Crawford et al. 2015).

The literature search began by consulting information specialists and the article authors to identify relevant terms and phrases to be used as search terms. The search strategy was designed to capture articles addressing access to healthcare staff in a Nordic context in terms of attracting, recruiting, and retaining staff. The articles were published between 2010 and 2020 and based on empirical studies that investigated what factors influenced the ability to attract, recruit, and/or retain healthcare staff in one or more Nordic countries. We included publications focusing on staff within the healthcare sector. In some studies, the professional categories were unspecified, as in ‘hospital employees’, others were more precise, focusing on professional categories such as assistant nurses², nurses, doctors, and psychologists, as well as publications addressing other relevant healthcare professional groups such as lab personnel or cleaners (the full list of professions are to be found in Table 1).

To identify as many relevant studies as possible, we used the databases *Scopus* and *Web of Science*; *All databases*, as these databases are both large and comprehensive, and give good access to peer-reviewed research (at least publications from Europe and North America, which was not seen as a problem when reviewing research done on Nordic healthcare sectors). Still, this approach might have limited the scope of the study, and one cannot rule out that the literature search missed some relevant publications. The search process and inclusion and exclusion process are described in Figure 1. The search strategy was based on the criteria for inclusion and exclusion (see Appendix 1) and the final search strategy is presented in Appendix 2 for each database. The final search was conducted in September 2020.

The search strategy was initially built around the *Scopus* database by gradually combining the different search paths in the strategy. The search strategy was then adapted by changing the field tags³ and by adapting the search for use of the *Web of Science* database. All identified publications were screened twice in Rayyan, and then imported into the RefWorks reference management system.

Screening articles using inclusion and exclusion criteria

The final search identified studies based on the inclusion and exclusion criteria and was done in two steps. In the first step, each article author separately evaluated the relevancy of the articles and read all the abstracts with support of the online tool Rayyan (www.rayyan.qcri.org).⁴ A total of 4,664 abstracts were excluded and 116 were included. If we were unsure of whether to include or exclude an abstract, such as whether or not the study on empirical grounds answered a question about what impacted the ability to retain staff, the authors discussed the abstract’s relevancy jointly. Based on this discussion, the authors formed a consensus about whether to include the publication or not; if included, a full version of the article was ordered. In step two, the authors screened the relevance of the full texts based on the inclusion and exclusion criteria. The screening was conducted in the RefWorks reference management system, and the publications that did not fulfil the inclusion criteria were excluded.

A relatively large number of publications were identified—116 abstracts were screened. Of the 116 full text articles, 43 were ultimately excluded, as they lacked relevance for the present article’s purpose. Since the main aim of the search was for research on attracting, recruiting, and retaining healthcare staff and therefore broader than just focusing on retaining staff, the exclusion process—for this particular paper—consisted of yet another round of exclusion. In the first round, 33 were excluded, of which 27 were excluded for lack of relevance. They simply did not deal with attracting, recruiting, or

retaining staff. For example, some focused on the health effects of changing jobs. Two publications were excluded because they were conducted in a non-Nordic country, and one publication was excluded because the study was conducted in multiple countries where the results for the Nordics could not clearly be discerned. Three articles were excluded because they were not scholarly articles but rather project reports with less detail. Some of the 116 articles focused on multiple non-Nordic countries and one or more Nordic countries. These were only included if the results for the Nordic countries could be identified and isolated from the other countries. In the second round, publications that only focused on attracting and/or recruiting staff were also excluded. There were 10 such articles, so the present study ultimately included 73 publications.

Figure 1 Search process

Total number of abstracts for review: 4,664
Total number including abstracts for full text review: 116
Total number including publications: 73

Categorizing and thematizing included publications

All included publications were read in full and systematically categorized. The following categories were used in a matrix to summarize the included publications: author, title, year, journal (vol/nr/p), purpose and research questions, country/countries, sector(s), level (national/regional/local), professional group, theoretical framework/perspective, findings, the focus (attract, recruit and/or retain), if the publications discussed sex/gender, ethnicity/race, class and/or function, and a category for other. As each publication was read, information on each of the above categories was noted in the matrix. Table 1 under Results summarizes this matrix with information relevant for the present study.

Method discussion

Every methodological choice has results; some things might be included, and others excluded. We have attached the search strings to clarify how we searched for publications (Appendix 2). However, different scholarly fields often use different vocabulary for the same phenomenon. That is, publications of relevance for the current overview of knowledge may have been overlooked if those publications used key words that did not match our search terms. Moreover, it should be noted that a rapid review increases the risk of various types of bias, such as increased risk of publication bias in both directions. Therefore, a rapid review could overrepresent articles that publish statistically significant results (i.e., positive results) and underrepresent articles that publish negative results. In the present review, this bias is amplified because the review only includes positive, significant results; moreover, selection bias (i.e., the researcher's interests, opinions, and familiarity with a concept) is also at play (cf. Grant & Booth 2009; Crawford 2015). The former risk is not limited to rapid reviews, as it always exists when compiling research; however, selection bias can be reduced by clearly reporting the used method and having clear and consistent screening criteria. In both the abstract review and full text reading, we countered these biases by including only empirical studies that focus on staff retention in relevant sectors in one or more Nordic countries.



Table 1 Overview of included publications

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
- Country/ies of study		- Method(s) used, sample		
- Context, and profession				
1	Ahlstedt et al. (2019). What makes registered nurses remain in work? An ethnographic study. <i>International Journal of Nursing Studies</i> , 89, 32–38	To explore registered nurses' workday events in relation to inner work life theory, and to better understand what influences registered nurses to remain in work.	Qualitative - Participant observation and interviews - Hospital; registered nurses	Theory of inner working life, based on the interaction between the person's perceptions, emotions, and work motivation The results show how motivation is linked to interpersonal support, where a friendly atmosphere makes the nurses comfortable asking for help and where the doctor's show respect for and trust the nurses' professional knowledge. The results also show how feedback and autonomy is important, showing how motivation through feedback and autonomy takes place during the working day. Autonomous, motivated employees experience less exhaustion, burnout and illness, previous research shows. Therefore, it is important that management identifies strategies to strengthen nurses' independent and autonomous work on an individual level with a focus on professional tasks and the opportunity to work together with other licensed nurses.

2	Arakelian et al. (2019). I Stay – Swedish Specialist Nurses in the Perioperative Context and Their Reasons to Stay at Workplace. <i>Journal of PeriAnesthesia Nursing</i> , 34(3), 633–644 - Sweden	To investigate the reasons why nurse specialists in perioperative settings choose to stay in the same workplace for 5 years or more.	Qualitative - Interviews - Hospital; registered nurses	Phenomenology (life-world)	Three themes related to reasons to stay more than five years were identified: 1) Organizational stability contributed to low staff turnover with good atmosphere between colleagues which reflects everyone's equal value and resulted in a sense of home, 2) Maintained development of one's profession despite having worked for a long time at the same workplace, 3) A humane head nurse who was available, who was an enabler, who knew the employee and who eliminated the obstacles for him/ her: In a pleasant, non-hierarchical, and stable organization with a nurse who practiced "caritative" leadership, a warm and welcoming work environment is created with opportunities for professional development even after many years in the profession, specialist nurses felt at home and choose to stay.
3	Aronsson & Bejerot (2014). Brist på kollegialt inflytande urholkar lojalitet med chef och organisation... men inte med patienterna. <i>Läkartidningen</i> , 111 (2–13), 553–556 - Sweden	To study the relation between medical doctors' understanding of their possibilities to use their knowledge and experience to influence the planning and structure of the organization and different aspects of leaving protest and loyalty.	Quantitative - Survey - Healthcare; doctors		Strong loyalty to the organization and to the manager is 2–3 times more common among those who have access to arenas for collegial influence. Loyalty between profession and patient is strongly independent of access to these arenas. Those with low access to arenas for collegial influence consider changing employers or professions twice as often as those with high access.
4	Björn et al. (2015A). Prominent attractive qualities of nurses' work in operating room departments: A questionnaire study. <i>Work</i> , 52(4), 877–889. - Sweden	To capture attractive qualities of nurses' work in Swedish operating room departments and take a first step in the process of adapting the Attractive Work Questionnaire for use in a health care context.	Quantitative - Survey - Hospital (operation room); registered nurses		Regarding working conditions, the following factors emerge as important for the attractiveness of nursing work: relationships, leadership, equipment, salary, organization, physical work environment, place, and working hours. Regarding work content: mental work, autonomy, and speed of work. Regarding job satisfaction: status and recognition.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
- Country/ies of study	- Method(s) used, sample	- Context, and profession		
5 Björn et al. (2015B). Significant factors for work attractiveness and how these differ from the current work situation among operating department nurses. <i>Journal of Clinical Nursing</i> , 25(1–2), 109–116	To examine significant factors for work attractiveness and how these differ from the current work situation among operating department nurses. A second objective was to examine the associations between age, gender, length of employment, work engagement, work ability, self-rated health indicators and attractiveness of the current work situation.	Quantitative - Survey - Healthcare; registered nurses	Attractive work model	The results show that the nurses rate all factors linked to work attractiveness higher than they rate these factors in the current work situation. Several factors should be taken into account in an effort to increase work attractiveness in the wards and thereby increase the possibility of retaining nurses. Positive aspects of work seem to unite work engagement and attractive work, while work ability and self-rated health indicators are other important dimensions in the retention of nurses.

6	Bratt & Gautun (2018). Should I stay or should I go? Nurses' wishes to leave nursing homes and home nursing. <i>J Nurs Manag.</i> 26(8), 1074–1082	To investigate the prevalence of nurses' wishes to leave work in elderly care services and to explain differences between younger and older nurses.	Quantitative - Survey - Elderly care; registered nurses	One in four wanted to quit, just as many were insecure. More young nurses wanted to quit and the will decreased markedly after the age of 30 for wanting to quit and the age of 40 for insecure. More people wanted to quit nursing homes than home nursing. The clearest difference between younger (under 40) and older (over 40) was the link between poor working conditions (e.g. high physical workload, mental workload, and time pressure) and the willingness to quit; it was three times as strong for young nurses as for older nurses. A reasonable explanation is that those over 40 who wanted to quit have already quit. Measures against high staff turnover among nurses should be age-specific in order to be more effective.
7	Brinegaard et al. (2017). Organizational change, psychosocial work environment, and non-disability early retirement: a prospective study among senior public employees. <i>Scand J Work Environ Health</i> , 43(3): 234–240	To examine the impact of organizational change and psychosocial work environment on non-disability early retirement among senior public service employees, and to investigate how the psychosocial work environment affects early retirement and the association between organizational change and early retirement.	Quantitative - Register data - Healthcare sector (86% of some social workers not included in this review); healthcare sector employees	Change in management, merger or relocation of unit, poor psychosocial work environment such as lower social capital, low organizational justice, and poor management, all increased the risk of early retirement. Organizational change adjusted for psychosocial work environment showed no significant differences, psychosocial work environment adjusted for organizational change increased the risk. This indicates that perceived changes in the psychosocial environment are part of the effect that organizational changes have.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
- Country/ies of study		- Method(s) used, sample - Context, and profession		
8	Carlsson et al. (2014). Registered nurses' perceptions of their professional work in nursing homes and home-based care: A focus group study. <i>International Journal of Nursing Studies</i> , 51 (5), 761–767	To illuminate how nurses, working in nursing homes and home-based care, perceived their professional work	Theories on job satisfaction and professional identity	Three categories emerged from analysis: (1) establishing long-term relationships, (2) nursing beyond technical skills, and (3) balancing independence and a sense of loneliness. The nurses described the work as characterized by long-term relationships, the opportunity to perform independent work and to provide holistic and complex care. (One problem linked to independence and autonomy was the loneliness of working with many patients and few nursing colleagues. They worked more as supervisors for assistant nurses and assistants.) Nursing education should highlight the positive aspects of nursing work in geriatric care to counteract the image of work as depressing and non-challenging in order to give nursing students a positive image of geriatric care, and employers might find them helpful when recruiting and retaining nurses.



9	Carson et al. (2015). The 'rural pipeline' and retention of rural health professionals in Europe's northern peripheries. <i>Health Policy</i>, 119(12), 1550–1556 - Iceland, Norway and Sweden	To investigate the relationship between the rural pipeline and retention in parts of sparsely populated Europe, with a view to contributing to the debate about the extent to which government in particular can effectively intervene in workforce distribution.	Quantitative - Survey - Healthcare; doctors and registered nurses (and allied employees)	The theory of rural pipeline	Significant relationship between having a rural background and training in a rural area and wanting to stay in the organization. Doctors and nurses with "rural training" were more likely to have the ambition to stay than allied professionals. Similar results for older participants and for men, than for younger participants and for women respectively. Doctors were more often men and older; allied professionals more often women and younger. The conclusion is that the rural pipeline has an impact on retention as well as recruitment, but that there are demographic, geographical, and professional differences in the pipeline's impact on retention.
10	Clausen et al. (2011). Return to work among employees with long-term sickness absence in eldercare: a prospective analysis of register-based outcomes. <i>International Journal of Rehabilitation Research</i>, 34(3), 249–254 - Denmark	To investigate whether RTW (return to work) is predicted from a series of psychosocial work characteristics (emotional demands, role conflicts, quality of leadership and influence) and work-related psychological states (affective organizational commitment and experience of meaning at work) among staff in the Danish eldercare sector who have been absent from work for 8 or more consecutive weeks.	Quantitative - Survey and register data - Elderly care; elderly care employees	Biopsychosocial model and The Phase Model of Disability	379 participants returned to work during the period (64%). The only thing that had a significant effect on the returning to work in the event of long-term sick leave was the experience of meaningful work. Low meaning reduced the returning significantly. Psychosocial factors (emotional demands, role conflicts, leadership quality and the ability to influence) had no significant effect. Nor did the employee's organizational commitment to the work have a significant effect. Only leadership quality was close to significance. The results show that the returning to work is not necessarily predicted by the same factors that predict long-term sick leave.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
11	Clausen et al. (2012), job demands, job resources and long-term sickness absence in the Danish eldercare services: a prospective analysis of register-based outcomes. <i>Journal of Advanced Nursing</i> , 68(1), 127–136	To investigate associations between psychosocial job demands, job resources and cases of registered long-term sickness absence among nursing staff in the eldercare services.	The job demands-resource model	Both work requirements (emotional demands, quantitative demands, and role conflicts) and work resources (influence, quality of leadership and group climate) could predict long-term sick leave. The former increased the risk, and the latter reduced it. High work resources were found to reduce the risk of long-term sick leave more than high work demands increased it, which indicates that the former can compensate for the latter.
-	Denmark			
12	Clausen et al. (2014). Why are they leaving? Causes of actual turnover in the Danish eldercare services. <i>Journal of Nursing Management</i> , 22(5), 583–592	To investigate reasons for actual turnover among eldercare staff and to investigate changes in job design that could prevent turnover.	Quantitative	Employees who resigned had better health and lower BMI but experienced higher physical workload, higher emotional demands, and more role conflicts than those who remained. They cited conflicts, low influence, high demands, and difficulty in having the opportunity to develop professionally as reasons for quitting. Retired employees had poorer health and more of them had back problems than those who stayed. They stated high demands and health as well as retirement age as reasons why they quit.
-	Denmark			



13	De Cuyper et al. (2011). The role of job resources in the relation between perceived employability and turnover intention: A prospective two-sample study, <i>Journal of Vocational Behaviour</i> 78(2), 253–263 - Finland	To test if the relationship between perceived employability and turnover intention is stronger when job resources (job control, social support from the supervisor and colleagues) are low.	Quantitative - Survey - Hospital (and university); mostly assistant nurses (85%)	The relationship between self-rated employability and intention to change jobs was only positive at low job control, not significant at high. The intention to change jobs was higher among employees with high employability but low job control. If those with high employability are high-performing, then: the best are the first to leave at low job control. The main result is that the intention to change jobs is not caused by self-rated employability, but that job control affects the intention to change jobs.
14	Enroth et al. (2017). Threats of violence from patients was associated with turnover intention among foreign-born GPs – a comparison with attitudes of wanting to quit one's job as a GP. <i>Scandinavian Journal of Primary Care</i>, 35(2), 208–213 - Sweden	To explore how four work factors: patient-related stress, threats or violence from patients, control of work pace and empowering leadership related to turnover intentions among foreign-born GPs in Sweden.	Quantitative - Survey - Healthcare; doctors (general practitioners)	The foreign-born general practitioner's more often reported patient-related stress, compared to Swedish-born GPs, while they were less positive about the leadership. Foreign-born GPs had more often experienced threats or violence from patients (22% versus 3%) and they reported a higher intention to quit. The level of control over the pace of work was the same. Strengthening leadership and control over the pace of work was related to decreased intention to quit, while threats or violence from patients were related to increased intention to quit. When all was said and done, threats or violence emerged as a significant predictor of the intention to quit among foreign-born GPs.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
15 Flinkman & Salanterä (2015). Early career experiences and perceptions – a qualitative exploration of the turnover of young registered nurses and intention to leave the nursing profession in Finland. <i>Journal of nursing management</i> , 23(8), 1050–1057	To describe why registered nurses have left a work organization and why they have an intention to leave the profession.	Qualitative - Interviews - Health and social care; registered nurses		The following factors affect the nurses' choice to leave a work organization and their intention to leave the profession: poor working environment, absence of support, orientation and mentorship, and the nursing profession as a random or 'second' choice.
16 Gaski & Abelsen (2017). Designing medical internships to improve recruitment and retention of doctors in rural areas. <i>International Journal of Circumpolar Health</i> , 76(1), 1314415	To report on the effects of the early sign-up for medical internship.	Quantitative - Register data - Healthcare; doctors		Women were overrepresented among those who signed up early. Approximately twice as large a proportion of those who signed up early worked in Finnmark compared with those who got a place through the regular system. Among those who signed up early and later still working in the study area, 33% had grown up in this area. Of those who signed up early, 75% chose to do an internship in the more densely populated areas in Finnmark, i.e. the system does not seem to be effective in recruiting to the most sparsely populated areas. The program thus worked for the region but not for the areas that had the biggest recruitment problems.



17	Giver et al. (2010). Psychological well-being as a predictor of dropout among recently qualified Danish eldercare workers. <i>Scandinavian Journal of Public Health</i> , 38(3), 239–245 - Denmark	To investigate if a low level of psychological well-being at the time of graduation predicts dropout among eldercare workers two years later: - Elderly care; social and healthcare helpers and social and healthcare assistants	Quantitative - Survey and register data - Elderly care; social and healthcare helpers and social and healthcare assistants	Of those with medium or low levels of psychological well-being, the risk was significantly greater that they worked in other sectors or were outside the labor market. The difference was not significant in other parts of health care or education. Therefore, the first hypothesis was confirmed but not the second. It is noteworthy that over a third had left elderly care (however, some were in education to become “social and healthcare assistants”).
18	Grønstad et al. (2019). Organizational change and the risk of sickness absence: a longitudinal multilevel analysis of organizational unit-level change in hospitals. <i>BMC Health Services Research</i> , 19(1), 895 - Norway	To examine the different relationships between six unit-level changes (upsizing, downsizing, merger, spin-off, outsourcing and insourcing) and sickness absence among hospital employees.	Quantitative - Register data - Hospital; hospital employees	Employees who experienced upsizing had a reduced risk of sick leave during and immediately after the change, those who participated in downsizing had reduced risk before but increased risk during and immediately after the change. The latter also applied to mergers, although not as statistically significant. Out- and insourcing entailed a reduced risk of sick leave. The results show the complexity of the relationship between organizational changes and sick leave and that different types of changes can have different effects on sick leave.
19	Grønstad et al. (2020). Work-related moderators of the relationship between organisational change and sickness absence: a longitudinal multilevel study. <i>BMC Public Health</i> , 20(1), 12 18 - Norway	To examine if and how the relationship between unit-level downsizing and sickness absence is moderated by three salient work factors: temporary contracts at the individual-level, and control and organizational commitment at the work-unit level.	Quantitative - Survey and register data - Hospital; hospital employees	During the quarter before the cut, short-term sick leave decreased significantly, and it increased significantly during the quarter for the cut and the quarter afterwards. No significant effect on long-term sick leave could be identified. Temporary contracts risk increasing sick leave due to cuts. Organizational commitment seems to be a more positive reason for attendance. Job security is a prominent disciplinary factor in cuts, commitment a positive motivator. This is relevant for creating healthy organizations with presence.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study		Method(s) used, sample		
Context, and profession				
20 Halldorsdottir et al. (2018). Effects of cutbacks on motivating factors among nurses in primary health care. <i>Scandinavian Journal of Caring Sciences</i> , 32(1), 397–406	To examine the effects of cutbacks on motivating factors among nurses in primary health care.	Qualitative - Interviews - Healthcare; registered nurses	The Vancouver school's Ricoeur-inspired phenomenology; Hertzberg's motivation theory; and Kovac's theory of employee motivation complements it	Internal factors identified were: work itself, autonomy and independence as well as the opportunity for learning and development. Stress, insecurity, growing fatigue and understaffing had a negative effect on them. External factors identified were: interaction and consultation with management, job security, salary, professional training and rewards. Cuts affected the morale of the organization negatively but increased solidarity between nurses and cooperation within the organization increased. It is not clear how cuts affected job security, but the nurses were now more satisfied with having a job. Wages were now a stronger motivator than before the cuts, but they were considered too low. The results are close to Herzberg's and Kovac's classic motivation theories. To strengthen motivation, management needs to inform and consult the nurses. They also need to secure diversified tasks and secure learning and development, as well as communicate financial reasonings and discuss financial solutions.



21	Hathela et al. (2015). Nurses' perceptions of workplace culture in primary health care in Finland. <i>International Nursing Review</i> , 62(4), 470–478 - Finland	To describe nurses' perceptions of workplace culture, especially in regard to stress levels, job satisfaction and the practice environment in primary health care.	Quantitative - Survey - Primary care; registered nurses	Theory of workplace culture	Management needs to relate to employees differently depending on their age, and need to consider that shift work affects nurse management, empowerment, and commitment. The management needs to relate to that what affects the workplace culture in order to pay attention to and develop these and thereby increase the possibility of attracting and retaining nurses.
22	Heinen et al. (2013). Nurses' intention to leave their profession: A cross sectional observation study in 10 European countries. <i>International Journal of Nursing Studies</i> , 50(2), 174–184 - Finland and Norway	To determine factors associated with nurses' intention to leave the profession across European countries.	Quantitative - Survey - Hospital; registered nurses		Of the Finnish nurses, 49% stated that they had intentions to leave the workplace and 10% to leave the profession altogether. Of the Norwegians, the corresponding results were 25% and 9%, respectively. 22% of the Finnish nurses and 24% of the Norwegian nurses reported high burnout. Burnout was associated with nurses' intention to leave the profession. This did not apply to the nurse-patient ratio, the size of the hospital, the nurses' perception of how adequate the staffing was, how good the quality of the care was or their level of education.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study		Method(s) used, sample		
Context, and profession				
23 Hellesløv Søbstad et al. (2020). Predictors of turnover intention among Norwegian nurses: A cohort study. <i>Health Care Manage Rev</i> , 46(4), 367–374	To investigate whether symptoms of psychological distress mediated the impact of age, gender, workplace bullying, job satisfaction, and hardness on turnover intention when controlling for living with children, marital status, percentage of full-time equivalent, and number of night shifts last year and whether the same variables (except full-time equivalent and number of night shifts last year) could predict real turnover.	Quantitative - Survey - Healthcare; registered nurses		Symptoms such as insomnia, anxiety and alcohol consumption can mediate the effects of working conditions and personality traits in connection with turnover intention of nurses. Efforts aimed at counteracting bullying, improving job satisfaction, and relieving fatigue can reduce the intention for turnover and real turnover.

24	Heponiemi et al. (2013). Can organisational justice help the retention of general practitioners? <i>Health Policy</i>, 110(1), 22–28 - Finland	To examine the effects of leaving public sector general practitioner (GP) work and taking up a public sector GP position on the changes of job satisfaction, job involvement and turnover intentions. In addition, we examined whether organizational justice in the new position would moderate these associations.	Quantitative - Survey - Primary care; doctors (general practitioners)	Theory of organizational justice and job involvement	Those who had started as new general practitioners (GPs) and those who changed from another position to general practitioner had a higher intention to change jobs (turnover intention). New GPs had 2.6 times higher intention to change job (turnover intention), and those who changed from another position to GP had 1.6 times higher intention, than the control group (those who did not work as general practitioners). If organizational justice was low, job involvement and job satisfaction were low. If organizational justice was high, it acted as a buffer. Therefore, organizational justice is important to attract and retain GPs.
25	Heponiemi et al. (2014). The prospective effects of workplace violence on physicians' job satisfaction and turnover intentions: the buffering effect of job control. <i>BMC Health Services Research</i>, 14(1), 19 - Finland	To examine the associations of work-related violence (physical violence and bullying) with turnover intentions and job satisfaction in a four-year follow-up among Finnish physicians. Specifically, we were interested to see whether job control would modify these associations.	Quantitative - Survey - Healthcare; doctors		61% had experienced violence during their career and 19% had experienced bullying. The interaction between bullying and work control was significant for the intention to leave (turnover intentions). Physical violence turned out to lead to an increased intention to leave, both physical violence and bullying led to reduced job satisfaction. Work control was not related to the intention to leave for those who did not experience bullying but for those who experienced bullying. Work control turned out to act as a buffer against the intention to leave due to workplace violence, in accordance with previous research. This is one reason that doctors' control over their work should be strengthened.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
26 Heponiemi et al. (2016). On-call work and physicians' turnover intention: the moderating effect of job strain. <i>Psychology, Health & Medicine</i> , 21(1), 74–80	To investigate, in a large representative random sample of Finnish physicians, (a) the direct association between being on-call and turnover intention and (b) whether job strain or its components would moderate this association.	Quantitative - Survey - Healthcare; doctors	Demand-control-social support model	On-call duty was not related to the intention to quit after being adjusted for the control variables. Demands, control and job stress were significantly associated with the intention to quit. There was a significant interaction between on-call duty and requirements for intention to quit, as well as for on-call duty and stress. Those who had on-call duty and the highest level of stress had the highest level of intention to quit.
27 Heponiemi et al. (2019). The turnover intentions and intentions to leave the country of foreign-born physicians in Finland: a cross-sectional questionnaire study. <i>BMC Health Services Research</i> , 19(1), 624	To examine the turnover intentions and intentions to leave the country of foreign-born physicians in Finland.	Quantitative - Survey - Healthcare; doctors		High levels of discrimination and employment barriers were significantly associated with a higher intention to leave work. High levels of satisfaction with life in Finland and with the group climate were significantly associated with a reduced intention to leave work. Satisfaction with life in Finland had less strength compared to other variables. High level of language problems was significantly associated with higher intention to leave the country. A high level of satisfaction with life in Finland was significantly associated with a lower intention to leave the country. Discrimination was thus significantly associated with the intention to leave the workplace but not with the intention to leave the country, which probably was due to the fact that it was discrimination in the workplace that was measured. The conclusion is that it is important for management to work for a good group climate through communication, feedback, and conflict management to make foreign-born medical doctors want to stay. It also applies that they receive language training and good living conditions.

28	Hildingsson & Fenwick (2015). Swedish midwives' perception of their practice environment – A cross sectional study. <i>Sexual & Reproductive Healthcare</i> , 6(3), 174–181 - Sweden	To explore the practice environment of Swedish midwives and factors associated with the perception of an unfavorable work environment.	Quantitative - Survey - Maternity care; midwives	Factors related to the midwives' background (e.g. fatigue syndrome, academic qualifications) as well as to the internship environment were associated with perceiving the work environment as unfavorable / disadvantageous. Internal factors such as high quality of life and high self-efficacy were associated with a positive view of the work environment. Ensuring that midwives can enjoy both professional and private life can prevent them from leaving the profession.
29	Hildingsson et al. (2013). Burnout in Swedish midwives. <i>Sexual & Reproductive Healthcare</i> , 4(3), 87–91 - Sweden	To investigate Swedish midwives' levels of burnout and their attitudes towards leaving the profession.	Quantitative - Survey - Maternity care; midwives	Nearly 40% of midwives scored high on personal burnout, around 15% on work burnout and client burnout. Personal burnout was higher in younger midwives (under 40) with less experience in the profession (less than 10 years). Of the 169 who answered why they were considering leaving the profession, 32.5% answered "lack of staff and resources and a stressful work environment" and 24.9% "conflicts with colleagues and managers". The regression analysis shows that "Lack of staff and resources and a stressful work environment" was a powerful explanatory variable to explain the variation in all the mentioned forms of burnout. Midwives' work environment is important to take into account in order to make them stay in the profession.
30	Hogh et al. (2011). Bullying and employee turnover among healthcare workers: a three-wave prospective study. <i>Journal of Nursing Management</i> , 19(6), 742–751 - Denmark	To investigate employee turnover in relation to bullying, and to examine factors which may predict and/or have an impact on the turnover process.	Quantitative - Survey - Healthcare; healthcare helpers and healthcare assistants	Employees who experienced workplace bullying were at higher risk of wanting to leave the workplace, and of actually leaving it. Working conditions and health had no effect on the relationship between bullying and staff turnover, and bullied and non-bullied stated different reasons for leaving. The above, plus the harm bullying has on the bullied, are reasons managers in nursing should work to keep their organization free from bullying.

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Table 1 (Continued)

Reference - Country/ies of study	Research objective(s)	Research design - Method(s) used, sample - Context, and profession	Theoretical framework	Summary of relevant findings and conclusions
31 Hognestad Haaland et al. (2020). The association between supervisor support and ethical dilemmas on Nurses' intention to leave: The mediating role of the meaning of work. J Nurs Manag. 29(2):1–8 - Norway	To examine the association between supervisor support and ethical dilemmas on nurses' intention to leave health care organizations, both directly and through the mediating role of the meaning of work.	Quantitative - Survey Healthcare; registered nurses	The job demands- resources model	Social support from the supervisor, and ethical dilemmas were related to the intention to leave the organization or profession, both directly and indirectly through the experience of meaningfulness in the work. Healthcare organizations should therefore improve managerial support and meaningfulness in the work, as well as reduce ethical dilemmas in the work. Thus, healthcare organizations should continuously develop and offer training in nurse manager skills in the form of, for example, empathic ability, understanding the needs of employees and how to communicate and deal with ethical dilemmas. Supervisors should evaluate staff contributions, encourage staff involvement in ethical issues and highlight how nurses' work affects the well-being of others.
32 Holmberg et al. (2018). Job satisfaction among Swedish mental health nursing personnel: Revisiting the two-factor theory. <i>International Journal of Mental Health Nursing</i> , 27(2), 581–592 - Sweden	To describe and give a deeper understanding for how Swedish mental health nursing personnel within inpatient psychiatric care experience how the factors in Herzberg's theory influence their job satisfaction.	Qualitative - Interviews Psychiatric outpatient care; registered nurses	Herzberg's two- factor theory of job satisfaction (motivation- hygiene theory)	Three main categories with two subcategories each. A theme that fell under all categories. Categories: The work is satisfying in itself but demanding and stressful; Satisfactory relationships with colleagues are essential and provide a safe haven; The professional role is ambiguous and unclear. When the result is set against Herzberg's two-factor theory, the latter is contradicted as interpersonal relationships, collaboration and interprofessional working groups at work are motivating and contribute to job satisfaction (i.e. they are not just hygiene factors). As there is a shortage of psychiatric nurses, it is extra relevant to understand what increases their personal development and job satisfaction in order to strengthen recruitment and retention of employees. Employers need to work with career programs and rewards for both good work and good cooperation, mentorship, and supportive action.



33	Ingelsrud (2014). Reorganization increases long-term sickness absence at all levels of hospital staff_ panel data analysis of employees of Norwegian public hospitals. <i>BMC Health Services Research</i> , 14:411 - Norway	To investigate the effects of reorganization on long- term sickness absence among different levels of hospital staff.	Quantitative - Register data - Hospital; hospital employees	Demand-control- social support model	Long-term sick leave increases for each step down the education scale. The lowest educated group had on average 39 days long-term sick leave per year; for medical doctors the average was 9,4 days. Employees in hospitals that increased their degree of reorganization from low to moderate increased sick leave by 9%. The analysis shows that an increase in the degree of reorganization increases sickness absence and is thus in line with previous research. The analysis cannot show an effect on employees with the lowest training. Worth noting here is that MDs have a low level of sick leave to begin with, and those with the lowest training a high level, which can affect how much effect of a reorganization can be seen. The theoretical assumption is that increased demands, reduced sense of control, increased job uncertainty, or a combination of these increases sick leave (but this could not be studied within the framework of the study).
34	Ingelsrud (2017). Hospital Mergers in Norway: Employee Health and Turnover to Three Destinations. <i>Nordic journal of working life studies</i> , 7(1), 107–123 - Norway	To investigate the probability of turnover to three destinations following hospital mergers: within the hospital sector; out of the hospital sector; and out of work.	Quantitative - Register data - Hospital; hospital employees	Psychological and social- psychological theoretical models (of mergers).	Low health was more common among women and among them with lower level of education. Going to unemployment was twice as common among them with low health than for those with good health. Level of leaving the workplace (turnover) was higher the second year after merging than before it, and then as transitions to other parts of the hospital sector. There was no difference in the effect of mergers on turnover between those with good compared to those with poor health. The exception is the merging year when those with poor health are less likely to change the workplace. The result shows that increased staff turnover is a result of mergers.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
35	Jensen et al. (2018). Dual impact of organisational change on subsequent exit from work unit and sickness absence: a longitudinal study among public healthcare employees. <i>Occup Environ Med</i> , 75(7), 479–485	To examine the impact of various types of organizational change on subsequent employee exit from the work unit, total sickness absence and long-term sickness absence among public healthcare employees in Denmark.	Quantitative - Survey and register data - Hospital: hospital employees (mostly nurses but also e.g. doctors, dentists, administrative staff; and technical staff)	Reorganization was associated with subsequent exit from the workplace / unit in subsequent years. This was particularly associated with merging, demerger and change of management. Among the employees who remained, reorganization was also associated with more cases of long-term sick leave, and then especially in relation to the merging and dismissal of employees. The results thus show that organizational change has a double effect on subsequent exit (from the workplace) and sick leave. In summary, the results indicate that higher levels of exit and sick leave appear to be related to specific types of changes rather than a response in relation to the number of changes performed simultaneously.
36	Jensen et al. (2019). Longitudinal associations between organizational changes and change, work-unit social capital, and employee exit from the work unit among public healthcare workers: a mediation analysis. <i>Scand J Work Environ Health</i> , 45(1), 53–62	To examine the associations between organizational changes and subsequent employee exit from the work unit and mediation through social capital.	Quantitative - Survey - Healthcare employees	Exposure to reorganization was higher in work units with lower social capital and in those with more employees. Male employees, units with more employees and lower income were most represented in units with low social capital. The opposite was true for female employees, units with fewer employees and employees with higher incomes. Units had an increased risk of lower social capital after reorganization (except in the event of relocation). The higher the social capital, the less risk of employees leaving, i.e. inverted dose-response relationship. No convincing indications that social capital mediates between organizational change and employees leaving.

37	Jonsson et al. (2020). Organizational Hindrances to the Retention of Older Healthcare Workers. <i>Nordic journal of working life studies</i> , 10(1), 41–57 - Sweden	To learn about the obstacles to and opportunities for retaining older employees in the Swedish healthcare sector.	Qualitative - Interviews - Healthcare; healthcare employees	Theory of push and pull factors	In line with the human capital hypothesis, the interviewees appreciated older employees, e.g. for their experience and how they passed it on to younger employees. New technology also constituted an opportunity as a tool to maintain employees, even if it was not always used. Obstacles were that there were missing tools and strategies at organizational level to justify and maintain older employees. It was up to individual middle managers. Standardized HR solutions were also blunt when working with individual employees. A 'vicious circle' was identified where labor shortage leads to high workload for line managers, which in turn leads to the absence of strategies for "AGE management", which in turn leads to the absence of tools for "Manage Diversity", which finally leads to more of labor shortage.
38	Kärkkäinen et al. (2019). Return-to-Work Coordinators' Practices for Workers with Burnout. <i>Journal of Occupational Rehabilitation</i> , 29(3): 493–502 - Finland	To describe RTW (return to work) coordinators' activities in supporting workers with burnout during the RTW process, and their experiences with factors influencing the support.	Qualitative - Interviews - Hospital (and university); Return to work- coordinators		Factors influencing the RTW coordinators' support included an understanding of burnout, e.g. combination with illness, personality traits, workplace conflicts and the unpredictability of recovery. The authors conclude that the complexity of the burnout problem challenges RTW coordinators' ability to support. It is important that the coordinators understand the causes and consequences of burnout in order to provide adequate and well-timed support. In order to prevent and reduce negative consequences in case of burnout, work, individual and burnout-related factors need to be taken into account during RTW coordination.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
39 Karlsson et al. (2019). Registered nurses' perspectives of work satisfaction, patient safety and intention to stay – A double-edged sword. <i>J Nurs Manag.</i> , 27(7): 1359–1365	To describe job satisfaction in registered nurses, their intention to stay at their current workplace and in the profession and to explore patient safety in relation to these.	Qualitative - Interviews - Healthcare; registered nurses		The analysis resulted in five themes: 1) The nurses feel satisfied when they can perform person-centered care; 2) The nurses appreciate the variety in the work but want control; 3) The nurses feel frustrated when care is delayed or left undone; 4) The nurses depend on teamwork and work environment to accommodate patient safety; and; 5) Intention to stay depends on work environment and opportunity for renewal. A supportive and attractive work environment is needed to strengthen registered nurses' intention to stay. The intention to stay can increase if management communicates and listens to the nurses' needs, but also if they improve the work environment and the conditions for evidence-based care. There is a need to encourage shared governance and decision-making where nurses are involved, informed, and have a voice in strategic decisions.
40 Kjekshus et al. (2014). The effect of hospital mergers on long-term sickness absence among hospital employees: a fixed effects multivariate regression analysis using panel data. BMC Health Services Research (2014), 14:50	To analyze the effect of mergers on long-term sickness absence among hospital employees.	Quantitative - Panel, register data - Hospital; hospital employees		The risk of long-term sick leave increases in the year before the merger (year 0), goes towards normal in the first year (year 1), but then increases again and becomes even higher than the year before in the following years. For women, the risk is much higher than for men. The study shows that mergers have a significant effect on long-term sick leave. The effect of the merger wears off five years after it takes place. If mergers take place to improve production, distribution, and organization, then mergers appear to be counterproductive.
- Norway				

41	Kuusio et al. (2010). Organizational commitment among general practitioners: A cross-sectional study of the role of psychosocial factors. <i>Scandinavian Journal of Primary Health Care</i>, 28(2), 108–114 - Finland	To examine whether general practitioners working in primary health care have lower organizational commitment (intention to change jobs and low affective commitment) compared with physicians working in other health sectors. In addition, to test whether psychosocial factors (high job demands, low job control, and poor colleague consultation) explain the potential differences between general practitioners and other physicians.	Quantitative - Survey - Primary care; doctors (general practitioners)	Demand-control-social support model	More general practitioners in primary care thought about changing jobs compared to other doctors. Doctors who experienced high demands, low control and poor consultation with colleagues were more likely to express the intention to change jobs. General practitioners in primary care were also less committed to their jobs. However, the link disappeared after adjustment for psychosocial factors. Lower commitment and higher willingness to change jobs were mediated by psychosocial work factors such as high demands, low control and poor collegial consultation. Therefore, it is likely that the reduction of requirements and the increase of control leads to an increased organizational commitment of general practitioners.
42	Kuusio et al. (2013). Psychosocial stress factors and intention to leave job: differences between foreign-born and Finnish-born general practitioners. <i>Scandinavian Journal of Public Health</i>, 41(4), 405–411 - Finland	To examine whether there are differences in intention to leave between foreign-born and Finnish general practitioners; to investigate the associations of potential psychosocial factors (high job demands, high job control, patient-related stress, and stresses related to teamwork) with intention to leave among general practitioners; and to study whether there are differences in these associations between foreign-born and Finnish general practitioners.	Quantitative - Survey - Healthcare; doctors	Demand-control-social support model	Cultural differences regarding psychosocial factors can promote or discourage job involvement among physicians. The study therefore shows that a new way of thinking is needed in the organizational development of general practitioner work in order to better understand the specific needs of foreign-born doctors. This study also suggests that a lighter workload can help attract more doctors, both foreign and Finnish, to primary care.

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Table 1 (Continued)

Reference	Research objective(s)	Research design - Method(s) used, sample - Context, and profession	Theoretical framework	Summary of relevant findings and conclusions
43 Kiuusio et al. (2014). Inflows of foreign-born physicians and their access to employment and work experiences in health care in Finland: qualitative and quantitative study. <i>Human Resources for Health</i> , 12:41	To examine, based on register information, the numbers of foreign-born physicians migrating to Finland and their employment sector; to examine, based on qualitative interviews, the foreign-born general practitioners' experiences of accessing employment and work in primary health care in Finland; and to compare experiences of the psychosocial workplace environment among foreign-born physicians working in various health care sectors (primary health care, hospitals, and private sector).	Mixed methods - Survey, register data and (qualitative) interviews - Healthcare; doctors	Demand-control-social support model	Physicians in primary care experienced high demands and high patient-related stress; higher than privately employed doctors. Improvements are necessary to retain general practitioners regardless of whether they were born in Finland or in another country. In order to get more foreign-born physicians into work, the pace of the licensing process can be increased by simplifying access to internships and language studies.

44	Lagerlund et al. (2015). Intention to leave the workplace among nurses working with cancer patients in acute care hospitals in Sweden. <i>European Journal of Oncology Nursing</i> , 19(6) 629–637 - Sweden	To examine associations between perceived leadership and intention to leave the workplace due to job dissatisfaction among registered nurses who care for patients with cancer; and also to examine intention to leave in relation to proportion of cancer patients, length of time in practice, perceived adequacy of cancer care education, and burnout.	Quantitative - Survey - Hospital (all Swedish hospitals with emergency care); registered nurses	Intention to leave is greater among those who are relatively new to the profession, who do not feel they have adequate training and who have higher scores regarding burnout. There is a strong relationship between the experience of leadership and the intention to leave the workplace, with a higher probability of leaving among those who report a less favorable leadership. This association is stronger among more experienced nurses, nurses who experienced adequate training, and nurses who had lower burnout scores. No other variables (when controlling for) changed this. That only 20–40% report adequate education “is cause of great concern”.
45	Leineweber et al. (2016). Nurses’ practice environment and satisfaction with schedule flexibility is related to intention to leave due to dissatisfaction: A multi-country, multilevel study. <i>International Journal of Nursing Studies</i> , 58, 47–58 - Finland and Norway	To investigate how aspects of the nurse practice environment and satisfaction with work schedule flexibility measured at different organizational levels influenced the intention to leave the profession or the workplace due to dissatisfaction.	Quantitative - Survey - Hospital; registered nurses	Intention to leave was mainly explained by factors at the individual level, but also factors at the organizational level (e.g. work environment and satisfaction with flexibility in the work schedule) were important explanations. Being a man was the strongest individual factor behind leaving the profession; being older in the profession increased the probability of wanting to leave the profession but decreased the likelihood of wanting to leave the workplace. Subjective experience of adequate staffing and adequate resources seems to be essential to keep nurses in the workplace and in the profession. Both individual and group level are important to meet. Good leadership, good working relationships between doctors and nurses, and nurses’ influence play a role in being able to retain nurses.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study		Method(s) used, sample		
Context, and profession				
46 Lindqvist et al. (2014). Organization of nursing care in three Nordic countries: relationships between nurses' workload, level of involvement in direct patient care, job satisfaction, and intention to leave. <i>BMC Nursing</i> , 13:27	To explore associations between registered nurses' patient workload and level of involvement in direct patient care, and registered nurses' job satisfaction and intention to leave their current hospital or the nursing profession in Finland, Norway and Sweden.	Quantitative - Survey - Hospital; registered nurses		Almost half of the Finnish nurses, about a third of the Swedish and a quarter of the Norwegian nurses reported that they would leave the current hospital within the next year due to dissatisfaction with the work. The percentage of nurses who state that they want to leave the profession is more similar between the countries: 10% of the Finnish, 9% of the Norwegian and 7% of the Swedish. Statistically significant associations between level of involvement in direct patient care and intention to leave were found among the Swedish nurses. Among them, the intention to leave was highest among those who reported the highest involvement and those who reported the lowest, i.e. a U-curve. Swedish nurses were more satisfied in roles where they had greater opportunity for direct patient care. In Norway and Finland, nurses are more involved in such care than in Sweden. When wanting to increase the retention of nurses, not only workload and mix of patients are relevant, but also the role of nurses in patient care should be taken into account.



47	Lindqvist et al. (2015). Structural characteristics of hospitals and nurse-reported care quality, work environment, burnout and leaving intentions, <i>Journal of Nursing Management</i> , 23(2), 263–274	To investigate whether hospital characteristics not readily susceptible to change (i.e. hospital size, university status, and geographic location) are associated with specific self-reported nurse outcomes (i.e. burnout and intention to leave the profession).	Quantitative - Survey - Hospital; registered nurses	The conclusion is that structural factors that are difficult to change such as size, university status and geographical location are not strongly related to nurses' self-reported outcomes such as burnout, quality of care and job satisfaction or their intention to leave. Management should not consider such structural factors as primary factors behind nurse turnover and job satisfaction but focus on factors they can change such as improving the work environment
48	Loft & Jensen (2020). What makes experienced nurses stay in their position? A qualitative interview study, <i>J Nurs Manag.</i> , 28(6), 1305–1316	To explore which factors are important in experienced nurses' intention to stay in the clinical setting and to learn which factors affect their job satisfaction.	Qualitative - Interviews - Hospital; registered nurses	Seven themes were developed around seven factors that affected the desire to stay: To be an experienced nurse; The importance of one's specialty; Management; Professional challenges; Good colleagues; Balance between family and working life; and external factor changes in the organization. No single factor could be identified as the most important. However, family and work balance were important for many of the interviewees. Level of specialty and department's status had no effect. Management must pay attention to these factors in their strategies with the aim of maintaining an experienced workforce of legitimated nurses. The closest manager's central role also appears as a red thread throughout themes.

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Table 1 (Continued)

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Country/ies of study		Method(s) used, sample		
Context, and profession				
49 Lögde et al. (2018). I am quitting my job. Specialist nurses in perioperative context and their experiences of the process and reasons to quit their job. <i>International Journal for Quality in Health Care</i> , 30(4) 313–320	To describe reasons why specialist nurses in perioperative care chose to leave their workplaces and to describe the process from the thought to the decision.	Qualitative - Interviews - Hospital; registered nurses	Phenomenology (life-world)	Four themes were identified, which describe why the nurses had left their workplace: 1) Head nurses' betrayal and dismissive attitude and not feeling needed. Many were dissatisfied with their pay and felt rejected by the head nurse. 2) Inhumane working conditions (such as few breaks, no daylight and high work pace, several evening shifts a week and on-call) lead to negative health effects and made the interviewees think about how this would last until retirement and several reported sleep difficulties, e.g. as an effect of night shifts. 3) Not being free to decide on one's life and family life as more important than work. Difficult to have influence over one's schedule and this was described as being servants in the workplace. 4) Colleagues' belittling behavior: It was expected that one worked for 5–6 years before being accepted into "the old gang". Being treated badly by surgeons in the operating room was also mentioned. Leaving one's job was described as a process and two prominent reasons were the head nurse's dismissive attitude and treatment of employees and the poor and belittling behavior of colleagues.



50	Martinussen et al. (2020). Should I stay or should I go? The role of leadership and organisational context for hospital physicians' intention to leave their current job. <i>BMC Health Services Research</i> , 20(1), 400	To investigate hospital physicians' intention to leave their current job, and to investigate if such intentions are associated with how physicians assess their leaders and the organizational context.	Quantitative - Survey - Hospital; doctors	Younger physicians (under 40) had more than twice as often the intention to change workplace. Physicians whose leaders practiced professional and supportive leadership had a significantly lower risk of wanting to leave the workplace compared to those whose leaders practiced financial-operational leadership. Organizational context (absence of on-site leadership, unit mergers and long decision-making chains) was not linked to intention to leave, but social climate and group commitment were. Mergers appeared to reduce intention to leave.
51	Nilsson et al. (2011). Factors influencing the decision to extend working life or retire. <i>Scand J Work Environ Health</i> , 37(6), 473–480	To evaluate factors within nine identified areas that influence why some older workers want to (or believe they can) work until age 65 years or beyond, whereas others leave the workforce earlier.	Quantitative - Survey - Healthcare; healthcare employees	Financial incentives were the most important factor for wanting and feeling able to work until 65 or longer; health was the second most important. Marital status was also important, as was mental work environment. Since the results provide knowledge about not what acts as a push or pull, but what influences whether employees want or feel they can work longer; they can perhaps provide knowledge useful in the planning of interventions.
52	Norbye & Wolf Skaalvik (2013). Decentralized nursing education in Northern Norway: towards a sustainable recruitment and retention model in rural Arctic healthcare services. <i>International Journal of Circumpolar Health</i> , 72(1)	To investigate whether and to what degree the first DNE program established in Norway has contributed to recruitment and retention of registered nurses in rural healthcare services.	Quantitative - Survey - Healthcare; registered nurses	The respondents had been recruited to the training from 18 rural municipalities (180) and from one city (35). 97,3% of the respondents had completed the training in the prescribed time. The main reason for choosing the education was the opportunity to combine family life and work. The retention rate within municipal care was 81,6%. Of the respondents, 131 had since completed specialist training. The results show that those who completed the decentralized nursing education (DNE) formed a stable workforce in sparsely populated arctic areas.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
53	Numminen et al. (2015). Newly graduated nurses' occupational commitment and its associations with professional competence and work-related factors. Journal of Clinical Nursing, 25(1–2), 117–126	To explore newly graduated nurses' occupational commitment and its associations with their self-assessed professional competence and other work-related factors.	Quantitative - Survey - Healthcare; registered nurses	Theoretical definitions of professional commitment, nurse competence, turnover and job satisfaction Recently graduated nurses showed positive professional commitment, especially in the affective dimension, i.e. the desire to stay in the profession (other dimensions are normative, i.e. duty, accumulated costs – the difficulty of leaving due to costs and limited options). Management needs to pay attention to all dimensions in order to retain nurses.
54	Numminen et al. (2016). Practice environment and its association with professional competence and work-related factors: perception of newly graduated nurses. Journal of Nursing Management, 24(1), E1–E11	To explore newly graduated nurses' perception of their practice environment and its association with their self-assessed competence, turnover intentions and job satisfaction as work-related factors.	Quantitative - Survey - Healthcare; registered nurses	The result indicates that newly graduated nurses who assess their level of competence as high never or rarely consider leaving their employment/job or their profession. A strong significant and positive relationship between practice environment and work-related factors was shown; a positive practice environment thus appears as an important feature/element to support the competence and job satisfaction of newly graduated nurses and to retain them.
	Finland			



55	Nygaard Jensen et al. (2011). Does collective efficacy moderate the associations between physical work load and intention to leave or sickness absence? <i>Journal of Advanced Nursing</i> , 67(11), 2425–2434	To explore whether collective efficacy as a social contextual factor has a moderating effect by providing group members with means to cope with their perceived stressors. More specifically, to investigate whether collective efficacy moderates the associations between physical work-load and intention to leave and sickness absence.	Quantitative - Survey - Elderly care; elderly care employees	When collective efficacy is high, intention to leave is low even when the physical workload is high. The opposite was true when collective efficacy was low. Collective efficacy appears to reduce the impact of high workload on intention to leave. Employers and management in the healthcare sector should thus promote collective efficacy to reduce intention to leave, especially in groups with high workloads.
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Table 1 (Continued)

Reference - Country/ies of study	Research objective(s)	Research design - Method(s) used, sample - Context, and profession	Theoretical framework	Summary of relevant findings and conclusions
56 Öhman et al. (2017). Team social cohesion, professionalism, and patient-centeredness: Gendered care work, with special reference to elderly care – a mixed methods study. <i>BMC Health Services Research</i> , 17(1), 381 - Sweden	To study positive aspects and shifting narratives of elderly care work that might lead to increased work satisfaction and a more sustainable work organisation with less turnover and improved professional development, and to investigate work satisfaction from a gender perspective among Swedish registered nurses, physiotherapists, and occupational therapists, focusing specifically on healthcare services for the elderly.	Mixed methods - Survey and (qualitative) interviews - Elderly care; registered nurses, physiotherapists, and occupational therapists	Gender theory	The survey: Statistically significant difference in job satisfaction between those who worked in elderly care and others, 64% versus 74.4%, however, no significant difference between the professions or between men and women. From the open-ended responses, nine aspects of job satisfaction emerged (in descending order of how many raised them): 1) Well-functioning work group and collaboration; 2) Stimulating tasks and independence; 3) Good leadership; 4) Good working environment and a well-organized workplace; 5) Opportunities for career development; 6) Financial reward (only 5% raised this); 7) Influence and insight into the larger healthcare organization; 8) Humor and joy in the workplace; 9) Good relations with patients/clients (the last two in only about 1% of the surveys). The interviews contributed to four “storylines” where the first three represent the meaning of job satisfaction in elderly care and the last one a hidden aspect of work in elderly care: 1) Cohesion within the work group, 2) Career development and autonomy, 3) Client centrality and 4) Hidden and ignored power structures. Power relations (e.g. gender) lie below/behind other aspects such as cohesion and career development, but consensus orientation and reluctance to talk about power make it more difficult to change in these areas. This, in turn, likely makes it more difficult to attract competent personnel in the long term. Therefore, power needs to be explicitly highlighted and discussed.



57	Peltokoski et al. (2015). The comprehensive health care orientation process: indicators explain hospital organisation's attractiveness: A Bayesian analysis of newly hired nurse and physician survey data, <i>Journal of Nursing Management</i>, 23(7), 954–962. - Finland	To examine the relationship of a comprehensive health care orientation process with a hospital's attractiveness.	Quantitative - Survey - Hospital; registered nurses and doctors	Nurses' and physicians' intention to stay, i.e. the workplace's attractiveness, mainly depends on five process indicators; safe practice environment, knowledge and best practice, commitment and satisfaction contribute to the intention to stay.
58	Rudman et al. (2010). Monitoring the newly qualified nurses in Sweden: the Longitudinal Analysis of Nursing Education (LANE) study, <i>Human Resources for Health</i>, 8:10 - Sweden	To present the LANE study, to estimate representativeness and analyze response rates over time, and also to describe common career pathways (including intention to leave the nursing profession and profession turnover) and life transitions during the first years of working life.	Quantitative - Survey and register data - Healthcare; registered nurses	In all cohorts, intention to leave the profession was higher among young nurses. In both the 2002 and 2004 cohorts, 10% of the nurses considered leaving the profession one year after graduation. For the 2006 cohort, the percentage was double: 20%. This indicates a growing problem.

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Table I (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
- Country/ies of study	- Method(s) used, sample	- Context, and profession		
59 Rudman et al. (2014). A prospective study of nurses' intentions to leave the profession during their first five years of practice in Sweden. <i>International journal of nursing studies</i> , 51(4), 612–624	(1) To investigate the prevalence of new graduates' intentions to leave the nursing profession, (2) to prospectively monitor the development of intention to leave during the first five years of professional life, and (3) to study the impact of sex, age, occupational preparedness and burnout (i.e. exhaustion and disengagement) on the development of intention to leave the profession.	Quantitative - Survey - Health and social care; registered nurses		After five years, 20% indicate a strong intention to leave the profession. The longitudinal analysis of change in intention to leave revealed that levels increased during the first years of employment. Also, high levels of burnout were related to these intentions.
60 Salminen & Miettinen (2019). The Role of Perceived Development Opportunities on Affective Organisational Commitment of Older and Younger Nurses. <i>International Studies of Management & Organisation</i> , 49(1), 63–78	To examine the influence of perceived development opportunities and supervisory support on affective organizational commitment and whether this relationship is moderated by age or career stage.	Quantitative - Survey - Hospital; registered nurses and nursing personnel (e.g. assistant nurses)	Theoretical basis in HRM and the concept of "organizational commitment"	Perceiving oneself as having the opportunity to develop and receiving supervisory support for this was positively and significantly related to affective organizational commitment. Longer tenure in the organization, right skills for current job requirements, positive perception of supervisory support for development, and opportunities to use one's competencies were all positively related to affective organizational commitment. In order to retain nurses, HR strategies should be focused on allowing them to use all their professional skills regardless of their age, to develop these skills through training and education, and to have the opportunity to influence and develop their working methods.



61	Seitovirta et al. (2016). Attention to nurses' rewarding – an interview study of registered nurses working in primary and private healthcare in Finland. <i>Journal of Clinical Nursing</i> , 26(7–8), 1042–1052	To identify meaningful types of rewards and the consequences of rewards as expressed by Finnish registered nurses working in primary and private healthcare.	Qualitative - Interviews - Primary care and private care; registered nurses	Reward theory (different classifications of financial and non-financial rewards)	Six meaningful rewards were identified by the nurses interviewed: Financial compensation and benefits; Work-life balance; Work content; Professional Development; Attention, and; Supportive leadership. The consequences of the rewards were that they guide the nurses' work, strengthen professional satisfaction but also create feelings of envy and stress. The study shows that nurses have a broad perspective on rewards (both financial and non-financial) and applying this knowledge when developing reward systems can enhance the recruitment, job satisfaction and retention of nurses.
62	Sejbeak et al. (2012). Work-related factors and early retirement intention: a study of the Danish eldercare sector. <i>European Journal of Public Health</i> , 23(4), 611–616	To investigate whether 12 different work-related factors were associated with early retirement intention of 2444 employees aged 45–57 years in the Danish eldercare sector.	Quantitative - Survey - Elderly care; elderly care employees		The result shows that only 14% wish to retire at normal retirement age (65 or older). High physical effort and low and normal affective organizational commitment show a clear connection with the desired intention of "very early" retirement. None of the other work-related factors were associated with intention/desire for early retirement. Future interventions should focus on reducing physical effort and increasing or maintaining affective organizational commitment among employees in elderly care to postpone retirement.
63	Skagert et al. (2011). A prospective study of managers' turnover and health in a healthcare organization. <i>Journal of Nursing Management</i> , 20(7), 889–899	To (1) assess the rates of managers' turnover (remaining as a manager at each follow-up) and health outcomes (reporting healthy work attendance and no burnout); (2) identify important supporting factors relating to work and individual resources; and (3) explore differences between female and male managers in these respects.	Quantitative - Survey - Healthcare; healthcare employees	Demand-control-social support model and gender perspective	74% of respondents were still managers at the second survey and 60% at the third. The results show that organizations in healthcare do not only need to focus on strengthening managers in their leadership role, but also strengthen the conditions managers must exercise their leadership and ensure that the managers who are most suitable are the ones who remain as managers.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
64 Slater et al. (2020). Challenging and redesigning a new model to explain intention to leave nursing	To examine the impact of predictive work environment factors on nurses' intention to leave their position and to explore contributing factors.	Quantitative - Survey - Hospital; registered nurses		The study found that problems with personal and professional satisfaction and organizational commitment, as well as age and specialty within the profession influenced intention to leave and are therefore important for management to consider.
<i>Scandinavian Journal of Caring Sciences</i> , 35(2), 626–635 - Finland				
65 Slåtten et al. (2019). The role of organisational attractiveness in an internal market-oriented culture (IMOC): a study of hospital frontline employees.	To clarify how the role of organizational attractiveness relates to frontline employees' perception of their internal market-oriented culture (IMOC) as well as their turnover rate, engagement, and service quality.	Quantitative - Survey - Hospital; registered nurses and midwives	Stimulus-Organism-Response model (SOR)	Internal market-oriented culture (IMOC) has a significant positive effect on organizational attractiveness. No significant effect of IMOC on employee engagement or the quality of care provided, but a significant indirect effect via organizational attractiveness. IMOC has a significant indirect effect via organizational attractiveness on intention to quit. Organizational attractiveness thus partially mediates the relationship between IMOC and the turnover rate.
<i>BMC Health Services Research</i> , 19(1), 37 - Norway				

66	Spehar et al. (2012). Clinicians' experiences of becoming a clinical manager: a qualitative study BMC Health Services Research, 12(1), 421 - Norway	To explore clinicians' journeys towards management positions in hospitals, in order to identify potential drivers and barriers to management recruitment and development	Qualitative - Interviews and observations - Hospital; registered nurses and doctors	Theory of cosmopolitans and localists and a phenomenological perspective	Several of the managers interviewed had hesitated before taking the management position they were offered. A path dependency seems to have been the case where they felt trapped and almost forced to accept. Neither the professional sociological theory that clinicians choose managerial positions to protect their business and its logic nor management theories' emphasis on intrinsic motivation to lead seemed to explain much (although there were tendencies for this as well). The managers felt thrown into their role and had to learn on the fly under high stress. Pathways into management should be formalized to recruit the best fit and support functions for managers in their role should be developed to retain managers.
67	Strandell (2020). Care Workers under pressure – A comparison of the work situation in Swedish home care 2005 and 2015. <i>Health Soc Care Community</i> , 28(1), 137–147 - Sweden	To analyze and compare the work situation in the Swedish home care in 2005 and 2015.	Quantitative - Survey - Home health care; home health care employees		The results show that the working conditions for employees in home care (home care workers) were worse in 2015 than in 2005, for example the current number of visits per day (i.e. more visits in 2015 than in 2005), less support from managers/management and less time to discuss difficult situations with colleagues. Employees were also more mentally exhausted in 2015 than in 2005 and experienced more work-related problems. Deteriorating working conditions are discussed as related to downsizing and organizational reforms/ changes and the study shows how employees in home health care pay a high price for “ageing-in-place policies”. The working situation therefore needs to be improved, not only to improve the quality of care for the elderly, but also to secure the well-being and health of the employees and to be able to recruit and retain them.

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Table I (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
68 Suadani et al. (2013). Job satisfaction and intention to quit the job. <i>Occupational Medicine</i> , 63(2), 96–102 - Denmark	To investigate the view on psycho-social working conditions among hospital employees who would quit their job if it was economically possible, and among those who would not.	Quantitative - Surveys - Hospital; hospital employees		Several psychosocial factors were found to have a clear connection with the intention to leave if it was financially possible, and the more unfavorable psychosocial circumstances, the higher the willingness to leave if possible. Among the quantitative work demands, only the fact that the work is irregular and piled up was related to the willingness to leave. Among cognitive and emotional demands there was a relation in all cases, so also for control over the work (especially the meaningfulness of the work). Finally, there was a strong relation with the quality of leadership. The more of the factors that were included, the higher the willingness to resign if financially possible. Reversed, examining the willingness to resign then becomes a simple way to get an indication of the psychosocial work environment.

69	Sulander et al. (2016). Does Organizational Justice Modify the Association Between Job Involvement and Retirement Intentions of Nurses in Finland? <i>Research in Nursing and Health</i> , 39(5), 364–374	To examine whether distributive, interactional, or procedural justice moderated the association between job involvement and retirement intentions among Finnish female nursing staff in care for older persons.	Quantitative - Survey - Elderly care; registered nurses and assistant nurses	Theories about work involvement	Nurses who experienced low organizational justice and low work commitment, respectively, were more likely to have retirement intentions. Distributive justice, procedural justice and work engagement had significant associations with retirement intention. This was not the case for interactional justice. Interactional justice and procedural justice had a moderating effect on retirement intention. This means that when these aspects of justice are low, they tend to strengthen the link between low work engagement and the desire to retire. When work commitment was high, no difference was seen between nurses who reported high or low such justice. It is therefore good that the management (e.g. head nurse) acts fairly towards older nurses in order to keep them longer before retirement. Organizational justice is important to study further to increase the possibility of retaining nurses.
70	Sveinsdóttir & Blöndal (2014). Surgical nurses' intention to leave a workplace in Iceland: a questionnaire study. <i>Journal of Nursing Management</i> , 22(5), 543–552	To explore nurses' reported determinants of intention to leave a workplace with the specific objectives of investigating how nurses' job satisfaction, organizational commitment, perception of workload, managerial praise and the professional practice of nursing are related to intentions to vacate a position.	Quantitative - Survey - Hospital; registered nurses		51.3% of the nurses had considered leaving their workplace. Good leadership is important to retain nurses during drastic organizational changes. Providing positive feedback, providing challenging and professional work situations while ensuring that nurses are not overburdened with tasks separate from patients reduces the risk of nurses considering leaving the workforce. This is not expensive to provide. Rather, it can reduce costs and be simple to implement.

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Table 1 (Continued)

Reference	Research objective(s)	Research design	Theoretical framework	Summary of relevant findings and conclusions
Country/ies of study	Method(s) used, sample	Context, and profession		
71	Van den Bulcke et al. (2020). Ethical climate and intention to leave among critical care clinicians: an observational study in 68 intensive care units across Europe and the United States. <i>Intensive Care Med</i> , 46(1), 46–56	To assess the relationship between the quality of the ethical climate in the ICU and intent to leave after taking country, ICU, and clinician factors into account.	Quantitative - Survey and register data - Intensive care; medical doctors and registered nurses	After adjustment for respondent factors (age, gender, etc.) within intensive care unit and individual country, low organizational ethical climate was linked to higher intention to leave the workplace. To retain clinically active doctors and nurses in intensive care, focus can be placed on strengthening the ethical climate by encouraging mutual respect, open inter-disciplinary reflection, and active decision-making by making senior medical doctors aware of their unique position to enable discussions about decisions about end-of-life care.
72	Wälinder et al. (2018). A supportive climate and low strain promote well-being and sustainable working life in the operation theatre. <i>Upsala Journal of Medical Sciences</i> , 123(3), 183–190	To investigate if the psycho-social work environment, assessed via the job demand-control-support model, is related to well-being, zest for work, and intention to leave for personnel in the operating theatre.	Quantitative - Survey - Hospital; operation room employees (excluding surgeons)	Social support and low effort were linked to employee well-being, desire for work and higher intention to stay in care. Those who wanted to leave the care sector, those who experienced low desire and low well-being experienced lower social support and higher effort. Social support functioned as a buffer against high demands. Job demands affected job satisfaction negatively and social support affected it positively, and high demands plus lower social support increased the intention to leave.
	Sweden			



73	Ylitörmänen et al. (2018). Job satisfaction among registered nurses in two Scandinavian acute care hospitals. <i>J Nurs Manag.</i>, 26(7), 888–897 - Finland and Norway	To explore job satisfaction among registered nurses working in acute care hospitals, and to examine which background factors influence registered nurses' total job satisfaction.	Quantitative - Survey - Hospital; registered nurses	Job satisfaction was stated as relatively high in both Finland and Norway, but there were differences between the countries regarding the subscales, where the nurses in Finland stated lower on all of them (e.g. work environment, leadership, and work environment). Women reported higher on motivational factors than men. Those who had worked less than two years reported higher satisfaction with the leadership than the nurses who had worked longer on the unit. Those who worked day shifts reported higher on e.g. work environment and community than those who worked night shifts. The regression analysis showed that country was most strongly related to job satisfaction. Units for e.g. childcare, youth care and rehabilitation reported higher job satisfaction than acute and critical care. Older nurses (41–51 years) were more satisfied with their work than younger ones (under 30). Management should address these factors to enhance the job satisfaction of nurses.
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Results

This section presents the results of this review by examining the studies' context, participants, methods, theoretical frameworks, and perspectives and their findings about retention of healthcare staff. Finally, several recommendations for healthcare organizations are presented based on the results of the publications and the research gaps identified. In addition, recommendations are made for future research.

Country, context, and level

Studies⁵ from all Nordic countries were represented among the included publications: 26 conducted in Sweden, 21 in Finland, 18 in Norway, 13 in Denmark, and three in Iceland.⁶ Most studies were carried out in Sweden, or partly in Sweden. Iceland is the country with the most studies per capita, followed by Finland, Norway, Sweden, and Denmark.

The included publications focus on different parts of the healthcare system, where the hospital context is most common with 30 articles, followed by healthcare in general (25), elderly care (10), primary care (4), maternity care (2), home healthcare (1), and psychiatric care (1). These studies also focus on different context levels. Some study healthcare in general, others study organizational levels, such as hospital organizations, and others study particular parts of the healthcare system, such as surgery or intensive care.

Most publications focus on the national level. In many of these studies, the focus is on a particular hospital or elderly care facility in a specific municipality without explicit focus on local or regional aspects. These studies make a national, or perhaps general, explanatory claim, as the results are not placed in relation to the local or regional context where the studies were conducted (e.g., Slater et al. 2020). Therefore, these studies have been categorized as 'national' in accordance with the implicit explanatory claim. This strategy is not necessarily a problem in an individual study, but the pattern that emerges could become problematic, if it in fact is the specific context that results in a specific result, without the reader having information of what the context is. Interestingly, the studies focusing on certain rural regions, such as northern-most Norway or healthcare in rural areas, claim to say something about these regions, and factors that influence the retention of staff in these specific geographical contexts (e.g., Gaski & Abelsen 2017). Publications studying healthcare in major cities do not consider regional implications but make a national (i.e., general) explanatory claim. Thus, the results from studies of major urban areas risk being given an a priori general applicability, which obscures the conditions and challenges found in, for example, rural areas.

Professional group(s)

Depending on which part of the healthcare sector that is studied, the professional groups studied vary. By far, the most commonly studied professional group is nurses. More than half of the included publications (38) expressly studied solely or in part nurses. Less than one-fourth of the publications (16) focused expressly solely, or in part,

on doctors. Comparatively few publications studied other professional groups such as assistant nurses, orderlies, midwives, lab staff, or medical secretaries. Sometimes the focus is more on the general hospital staff or staff in elderly care (i.e., more general group categories than specific professional categories). This inconsistency makes it difficult to say how many studies that focus on, for example, assistant nurses, as they are likely included in the group elderly care staff. Additionally, what a specific occupation in one country involves jurisdiction-wise, may not always be the same in other countries. This means that the prerequisites for working as an assistant nurse, for instance, may be different in different countries, such as requiring different educational background, or what tasks are included. Still, if we combine the number of studies expressly studying assistant nurses (3) and those studying elderly care staff (5), which would also include assistant nurses, it results in only half as many publications as those that study doctors. Nonetheless, after doctors, assistant nurses are the most studied professional group.

Methods and theoretical frameworks and perspectives

Most of the publications are based on quantitative methods. Of the included publications, 58 are based on quantitative methods, 13 on qualitative, and two on a mixed method approach (i.e., both quantitative and qualitative methods). The most common method for data collection is surveys of staff (often self-assessment studies) followed by the use of registry data, and the two methods that are sometimes used together. Regression analysis is often used to analyze data in survey studies, although sometimes purely descriptive statistics are used. The qualitative studies are often based on qualitative individual interviews and sometimes on focus group data. The analyses are often in the form of thematic analysis or qualitative content analysis, and sometimes the analyses are explicitly phenomenological.

The descriptions of the theoretical perspectives vary in thoroughness, and in some cases, there is no explicit theoretical framework presented, rather casual relations are used as point of entry or even hypothesis-testing, for example. It is therefore not easy to provide a clear picture of the theoretical frameworks, and thus, we have only noted theoretical framework where it is explicit in the publications. Karasek and Theorell's theory on demand, control, and social support (e.g., Kuusio et al. 2014) is relatively common, and Herzberg's two-factor theory also appears in several articles (e.g., Holmberg et al. 2018). Two articles use gender theory or perspective (e.g., Öhman et al. 2017) and one uses a theory of social capital (Jensen et al. 2019). Additionally, there are some theories closely linked to the specific phenomenon being studied, such as the theory of 'the rural pipeline', which is closely linked to retaining staff in rural areas (Carson et al. 2015). Another theoretical perspective is a phenomenological life-world perspective, which is common in the qualitative studies and is well integrated into the method (also often presented in the Methods section; see Lögde et al. 2018). This perspective, as with the social constructivist perspective noted in some studies, is at a more general, onto-epistemological level than many other perspectives.

Very few publications took an expressly gender, ethnic/race, class, or functionality perspective. Three articles discussed gender in more detail, including Öhman et al. (2017) in their study of work satisfaction among nurses, physiotherapists, and occupational

therapists in Swedish elderly care. One article discussed ethnicity, reporting a study of whether or not there are differences between foreign-born and Finnish general practitioners regarding their intention to leave (Kuusio et al. 2013). The one study that focuses on mental health issues takes a functionality perspective (Giver et al. 2010). No publications explicitly discussed class. It was not unusual, however, for the quantitative studies to use gender and some form of socioeconomic status (such as educational attainment) as control variables.

Important factors for retaining healthcare staff

Beyond staff not choosing to change workplaces, retaining staff also involves staff not taking early retirement or being forced to go on sick leave. And if they do go on sick leave, how do they return to work as quickly as possible? Clearly, many factors influence retention of healthcare staff, and the same factors are not equally important for all groups of staff even if the results do not seem to clearly differentiate between the different professional groups. Although some of the findings may appear to be relatively obvious, organizations better able to retain healthcare staff are characterized by good psychosocial working environment where demands, control, and social support are well balanced (e.g., Suadican et al. 2013; De Cuyper et al. 2011; Wälinder et al. 2018), good work-life balance (e.g., Loft & Jensen 2020), reasonable challenges and availability of continuing professional development (e.g., Salminen & Miettinen 2019), a good and well-functioning collegial atmosphere (e.g., good relations between nurses and doctors and absence of discrimination and bullying) (e.g., Heponiemi et al. 2019; Martinussen et al. 2020), low stress levels (e.g., Heponiemi et al. 2016), supportive, fair, and clear leadership (e.g., Hognestad Haaland et al. 2020), few or no major reorganizations or mergers (e.g., Grønstad et al. 2019; Ingelsrud 2017; Kjekshus et al. 2014), colleagues on site to consult, and time to do so (e.g., Kuusio et al. 2010), and absence of heavy physical exertion (e.g., Sejbeak et al. 2012). In the following section, we develop some of the more interesting examples presented above.

Reorganizations

There is a clear connection emerging between reorganizations and reduced ability to retain staff. Jensen et al. (2018) (see also Jensen et al. 2019) show, in a large national registry study of Danish hospital staff, how reorganizations negatively impact the ability of hospitals to retain staff. The years following reorganizations were associated with employees leaving the workplace or unit, a reaction that was particularly associated with mergers, disbanding of units, and changes in leadership. Among the staff who remained, reorganizations were also associated with increased instances of long-term sick leave. This increase was particularly apparent in connection with mergers and dismissal of staff. Several studies had similar results: Ingelsrud (2014) in a national registry study of hospitals in Norway; Kjekshus et al. (2014) in a study of 57 Norwegian hospitals where the effects of mergers on long-term sick leave were analyzed; and Breinegaard et al. (2017) in a study of how organizational changes impact early retirement within Danish healthcare. There seems to be significant support for the idea that reorganizations in

healthcare (where hospitals in particular have been studied) result in staff changing workplaces, going on long-term sick leave, or taking early retirement (see also Grønstad et al. 2019, 2020; Ingelsrud 2017; and Martinussen et al. 2020, who show a somewhat different result for doctors). Interestingly, these studies were conducted in Denmark, Norway, or Iceland, and if our literature search has captured all literature of relevance, it seems there is a lack of studies on reorganization and its relation to retention-rates, in Sweden, and Finland.

Demands, control, and support

Another theme to highlight is how job requirements, control over work, and the social support at the workplace (cf. Karasek & Theorell 1990) impact the psychosocial working environment, and thus the risk of employees leaving the workplace and/or going on long-term sick leave, and ultimately the ability to retain staff. A study of a Finnish hospital shows how the intention of changing work is higher among staff with high employability but low job control than among other staff (De Cuyper et al. 2011). Wälinder et al. (2018) show in a survey study of all staff (excluding surgeons) within operating departments at seven Swedish hospitals that high demands, with accompanying high ambitions, increase the intention of staff to leave the workplace, but that social support can counter this intention. Hognestad Haaland et al. (2020) also show how social support from supervisors can reduce the intention of nurses to leave the organization or profession, and Heponiemi et al. (2016) show in a national survey study of Finnish doctors that high demands and high stress in connection with on-call duty significantly increase the intention of leaving the job. For elderly care, in a longitudinal study based on surveys and registry data involving 7,921 elderly care staff in 35 Danish municipalities, Clausen et al. (2011) show how high work-related demands increase the risk of long-term sick leave, but a high level of work-related resources (e.g., influence, good work atmosphere, and good leadership) seem to compensate for this risk.

To conclude, there seems to be relatively extensive knowledge of what influences retention of staff in healthcare organizations in the Nordic countries. It is reasonable to assume a relatively high degree of transferability of results from one country to another, and there are no apparent reasons to assume that, for example, the knowledge of how organizational changes impact access to qualified staff in Norway and Denmark cannot be applied to Icelandic, Finnish, or Swedish conditions.

Conclusive discussion

We have compiled and described where existing research has been carried out, what country, context, and on what level. Moreover, we have compiled and described which occupational groups have been studied, and what theoretical approaches and methods have been used. Also, we have described what factors influence retention levels, according to the studies reviewed. This is in line with our first aim to 1) compile the main currents in research on retaining staff in Nordic healthcare. As such, the results presented above should be read as the ‘answer’ to the first aim.

To meet our two other aims of 2) presenting and discussing findings and central aspects in the research with relevance for the ability to retain staff within Nordic healthcare, and of 3) identifying gaps in the current knowledge and make recommendations for future research on retaining staff in the same, we below discuss the main findings, and via these findings we identify avenues for future research.

In terms of actual factors impacting on the retention, perhaps unsurprisingly, the included publications show that a good working environment is essential for retention. High control, high levels of social support, good leadership, satisfactory opportunities for professional development, organizational continuity, and reasonable demands, including absence of heavy physical exertion, seem to increase the ability to retain healthcare staff regardless of their intention to leave, actually changing workplaces, taking early retirement, or going on long-term sick leave. This is hardly surprising. These factors rhyme very well with the now seminal work of Karasek and Theorell (1990), showing how a balance between demand, control, and support is essential as to create good conditions for work, and a sustainable work environment. In fact, in a recent policy brief from ETUI, it is emphasized that part of the problems with staff shortage is not staff shortage per se, but unsatisfactory working conditions (Zwysen 2023). This means that a significant part of the solution with staff shortage can be met via offering satisfactory working conditions, something that in the aftermath of the COVID-19 pandemic has been revealed even more clearly (Theorell 2020).

Of particular interest are the various types of reorganizations described, which have been shown to have clear and long-term negative effects on the ability to retain staff. As the knowledge on how staff are retained (or not retained) within Nordic healthcare appears to be good, it is reasonable to question how this knowledge is consulted and utilized within the healthcare sector; either reorganizations as such have negative effects on the ability to retain staff, or those kinds of reorganizations carried out are unhelpful, from the perspective of the ability to retain staff. If, for example, reorganizations appear to have long-term negative effects on the retention of staff, why do the healthcare systems seem to be reorganized so often? Are these negative effects considered and, if so, how should decisions be implemented during reorganization? Or are these connections unknown at the management level? For future research, these kinds of issues need to be addressed. Future research should also focus on actual staff turnover rather than the more easily studied ‘intention to leave the workplace’.

In terms of methods, the included publications are based primarily on quantitative studies. Although this type of data can provide useful information, there seem to be saturation in terms of quantitative methods. Instead, more qualitative studies are needed, as these could be used to examine, for instance, employees’ trajectories and views on retention, and how employers’ reason and act, when it comes to strategies for retaining staff. This would allow for questions such as why do reorganizations cause staff to leave the workplace? What happens in a workgroup during a reorganization? What are employers’ actual strategies and ways of working in order to retain staff? Such studies would be both practically useful and take the knowledge in the field forward.

In terms of theoretical points of departure, many studies do not have any explicit theoretical framework. Moreover, it becomes evident that much of the research lacks theoretical perspectives on social stratification, power, and inequality and few studies examine in detail these aspects to understand how and why staff are convinced to remain in or leave healthcare organizations. Although gender is often used as a background

variable in quantitative studies, no deeper analyses are made, despite the sector being gender segregated, and employment and working conditions can be assumed to be impacted on by this. Including a perspective on social stratification, power and inequality in future studies could assist in examining and explaining broader patterns and their impact.

Moreover, there is also vast literature supporting the importance of staff being offered the opportunity to continuously learn in, at and for work, and that good conditions for learning are key to retention (Cerasoli et al. 2018; Govaerts et al. 2011; Lyons & Bandura 2022; Puhakka et al. 2021). Furthermore, it has even been argued that satisfactory conditions for learning can be a buffer against a problematic work environment (Karasek & Theorell 1990). The relation between retention and conditions for learning in the Nordic healthcare system therefore ought to be studied further.

With regards to professional groups, nurses are the most studied group. In fact, it seems many studies have had a single profession focus. For further studies, comparative and workplace and workgroup case studies examining for instance interprofessional relationships, as they relate to retention, could be a valuable addition to current research. Comparative studies, in the context of professional work, have long been argued to be too few (Adams 2015; Brante 2013).

When it comes to country, context, and level of analysis, it seems studies focusing on workplaces and/or regional health systems where staff are happy and want to remain are of interest. This is to identify what characterizes workplaces and regions where the retention rate is high, as this could possibly be used to improve other workplaces and regions. What characterizes the workplace/regional healthcare system? How is work organized, on a practical level, in organizations that have succeeded in retaining staff (with high staff satisfaction)? As discussed earlier, the geographical focus of retention studies can also impact the results. It is more difficult to retain staff in certain geographical locations, such as rural areas and areas far from higher education institutions, for example, the Arctic north. This in turn has major effects on the surrounding community and its attractiveness in terms of living and working in them (cf. Parding et al. 2022; Ejdemo & Parding 2018). Studies specifically focusing on these circumstances could provide knowledge that is applicable to the significant challenges in these areas. However, it is also important to understand more in general if and how regional organizations and municipalities (e.g., employers) consult, and utilize, existing knowledge when they organize and lead the work in their individual organizations. Context is also important, as studies need to be contextualized to clarify proposed explanations. For instance, one such study shows that a bundle of measures needs being taken into consideration in order to recruit and retain healthcare staff in the Arctic north (Abelsen et al. 2020). It is reasonable to think that these measures are not easily straight-on applicable in other and different workplace contextual settings. Therefore, instead of making 'general claims', studies no matter if they are situated in sought after and densely populated areas, or more rural or even remote, and perhaps less sought-after areas, contextual factors should be made explicit.

To sum up and conclude, there is vast knowledge available on how to retain healthcare staff, as shown above. However, there are also knowledge gaps; we have identified six different areas in which future research needs to address, as to meet with societal challenges in the healthcare sector.

Practical implications

On a general level, a number of factors have been shown to have a positive impact on retention rates. These factors are—as mentioned previously—high control, high levels of social support, good leadership, satisfactory opportunities for professional development, organizational continuity, reasonable demands, including absence of heavy physical exertion. On a practical level, not only healthcare employers, but also policy makers at various levels, should therefore focus on these factors in order to improve their ability to retain staff within their organizations. One concrete example is recurrent reorganizations of work, which appear to be something that the healthcare system should take on only when absolutely necessary, and employers should include the likely substantial loss of staff when weighing the costs and benefits of a reorganization. By doing so, the employer addresses the aspects of demand, control, support (as emphasized by Karasek & Theorell 1990), and leadership, and in doing so—organizational continuity. Also, due to that the shortage of staff rather could be considered a flight of staff (Zwysen 2023), the perspectives of healthcare staff themselves need to be taken into serious consideration, so that reorganizations meet the need of staff working in healthcare organizations, and not collide with their views and values. This means that employers, using existing knowledge, can choose to improve retention rates.

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Notes

- ¹ The information specialists were Ann-Sofie Nordenskjöld and Nina Hult, University Library at Luleå University of Technology.
- ² Note that assistant nurse is one translation of the Swedish term ‘undersköterska’. Other potential translations are practical nurse, LVN, LPN, and CPN, depending on the country and whether it is a licensed profession.
- ³ The field tags (*field codes* in *Scopus* and *field tags* in *Web of Science*) allow searches in specific fields in the databases bibliographic entries.
- ⁴ For information about Rayyan, see Ouzzani et al. (2016).
- ⁵ In some cases, the included Nordic country was part of a study of multiple European countries. Inclusion of a Nordic country in one of these international studies means that country or countries are included in the present study. For example, in addition to Norway and Finland, Leineweber et al. (2016) also studied Belgium, England, Germany, Ireland, the Netherlands, Poland, Spain, and Switzerland, and this overview counts that study as a study in Norway and in Finland.
- ⁶ Six articles covered more than one Nordic country, and for this reason, the total is higher than the total number of included publications.



Appendix I – Criteria for inclusion and exclusion in review of abstracts

Inclusion

- Explicitly dealt with the context of healthcare
- Empirical study
- Results show factors that affect the competence supply (attract, recruit, and/or retain)
- Study in one or several of the Nordic countries

Exclusion

- Reviews/literature reviews
- Theoretical articles
- Countries outside the Nordics as a study context
- Articles without abstracts
- Articles with such sparse abstracts that it is impossible to determine whether they are relevant
- No or indirect focus on competence supply, e.g., focus on health and well-being, and, e.g., job satisfaction or conditions for learning without a visible connection to competence supply

Appendix 2 – Search strings

Scopus 2020-09-28 Healthcare			
Number	Description	Search string	Number of hits
1	Competence supply	TITLE-ABS-KEY (((talent OR staff OR workforce OR personnel OR "organizational career") W/3 management) OR "skill supply" OR "supply of competence" OR "workforce planning" OR "employment rate")	90,128
2	Attract	TITLE-ABS-KEY ((attract* W/30 (staff OR employee* OR personnel OR work* OR company OR organization)) OR "employ* brand*")	63,913
3	Recruit	TITLE-ABS-KEY ((recruit* W/30 (staff OR employee OR personnel OR workforce OR professional OR worker)) OR "employ* brand*" OR "personnel selection" OR "vacant job" OR hiring OR vacancy)	167,513
4	Develop	TITLE-ABS-KEY (((staff OR employee OR competence OR career OR professional OR workforce) W/3 development) OR ((workplace OR employee OR organizational OR "life long" OR lifelong) W/3 learning) OR ((employee OR inservice OR staff OR personnel OR job OR workforce) W/3 training) OR "qualified staff" OR "learning environment" OR "professional competence" OR (continuing W/3 education) OR (skilled W/3 (employee OR professional OR workforce OR worker)))	399,892
5	Retain	TITLE-ABS-KEY ((retain* W/30 (staff OR employee OR personnel OR professional OR worker)) OR ((staff OR employee OR personnel OR workforce) W/5 retention) OR ((occupational OR job OR worker OR employment OR career) PRE/0 mobility) OR "mobility strategy" OR "labour shortage" OR ((employee OR personnel) PRE/0 loyalty) OR (leav* PRE/3 profession) OR "intent* to leave" OR ((career OR organizational) W/3 change) OR ((organizational OR workplace) W/3 commitment) OR "job satisfaction" OR "work motivation" OR (employee W/3 (satisfaction OR participation OR "well being"))) OR "good working life" OR "female dominated" OR "proactive behavior" OR proactivity OR turnover)	289,424
6	All blocks Competence supply	#1 OR #2 OR #3 OR #4 OR #5	938,391
7	Healthcare	TITLE-ABS-KEY ("health service" OR "health care" OR healthcare OR hospital OR "elderly care" OR nurse OR (nursing PRE/0 (assistant OR staff OR employee OR personnel OR workforce OR professional)) OR doctor OR physician)	4,533,089



Scopus 2020-09-28 Healthcare			
Number	Description	Search string	Number of hits
8	Countries	TITLE-ABS-KEY (swed* OR norway OR norwegian OR denmark OR danish OR finland OR finnish OR iceland* OR nordic OR scandinavia*)	637,786
9	All blocks Competence supply + Healthcare + Countries	#6 AND #7 AND #8	6,176
10	All blocks Competence supply + Healthcare + Countries	#6 AND #7	220,946
11	All blocks Competence supply + Healthcare + Filter for countries (Country/territory)	#6 AND #7 (LIMIT-TO (AFFILCOUNTRY, "Sweden") OR LIMIT-TO (AFFILCOUNTRY, "Norway") OR LIMIT-TO (AFFILCOUNTRY, "Denmark") OR LIMIT-TO (AFFILCOUNTRY, "Finland") OR LIMIT-TO (AFFILCOUNTRY, "Iceland"))	7,073
12	All blocks Competence supply + Healthcare + Countries OR All blocks competence supply + Healthcare + Filter for countries (Country/territory)	#9 OR #11	7,073
13	Filter Year: 2010–2021	#9 OR #11 (LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2012) OR LIMIT-TO (PUBYEAR, 2011) OR LIMIT-TO (PUBYEAR, 2010))	4,237
14	Filter Document type: Article Review	#9 OR #11 (LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2012) OR LIMIT-TO (PUBYEAR, 2011) OR LIMIT-TO (PUBYEAR, 2010)) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re"))	3,861

Scopus 2020-09-28 Healthcare			
Number	Description	Search string	Number of hits
15	Filter Language: English Swedish	#9 OR #11 (LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2012) OR LIMIT-TO (PUBYEAR, 2011) OR LIMIT-TO (PUBYEAR, 2010)) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re")) AND (LIMIT-TO (LANGUAGE, "English") OR LIMIT-TO (LANGUAGE, "Swedish"))	3,819
Web of Science (All databases) 2020-09-28 Healthcare			
Number	Description	Search string	Number of hits
1	Competence supply	TS=(((talent OR staff OR workforce OR personnel OR "organizational career") NEAR/3 management) OR "skill* supply" OR "supply of competence" OR "workforce planning" OR "employment rate*"))	37,129
2	Attract	TS=((attract* NEAR/30 (staff OR employe* OR personnel OR work* OR company OR organization)) OR "employ* brand*"))	46,112
3	Recruit	TS=((recruit* NEAR/30 (staff OR employee OR personnel OR workforce OR professional OR worker)) OR "employ* brand*" OR "personnel selection" OR "vacant job*" OR hiring OR vacancy)	186,406
4	Develop	TS=(((staff OR employee OR competence OR career OR professional OR workforce) NEAR/3 development) OR ((workplace OR employee OR organizational OR "life long" OR lifelong) NEAR/3 learning) OR ((employee OR inservice OR staff OR personnel OR job OR workforce) NEAR/3 training) OR "qualified staff" OR "learning environment*" OR "professional competence" OR (continuing NEAR/3 education) OR (skilled NEAR/3 (employee OR professional OR workforce OR worker))))	294,367



Web of Science (All databases) 2020-09-28 Healthcare			
Number	Description	Search string	Number of hits
5	Retain	TS=((retain* NEAR/30 (staff OR employee OR personnel OR professional OR worker)) OR ((staff OR employee OR personnel OR workforce) NEAR/5 retention) OR "occupational mobility" OR "job mobility" OR "worker mobility" OR "employment mobility" OR "career mobility" OR "mobility strateg*" OR "labor shortage" OR "employee loyalty" OR "personnel loyalty" OR (leav* NEAR/3 profession) OR "intent* to leave" OR ((career OR organizational) NEAR/3 change) OR ((organizational OR workplace) NEAR/3 commitment) OR "job satisfaction" OR "work motivation" OR (employee NEAR/3 (satisfaction OR participation OR "well being"))) OR "good working life" OR "female dominated" OR "proactive behavior" OR proactivity OR turnover)	301,117
6	All blocks Competence supply	#1 OR #2 OR #3 OR #4 OR #5	823,990
7	Healthcare	TS=("health service*" OR "health care" OR healthcare OR hospital OR "elderly care" OR nurse OR "nursing assistant*" OR "nursing staff" OR "nursing employee*" OR "nursing personnel" OR "nursing workforce" OR "nursing professional*" OR doctor OR physician)	4,216,866
8	Countries	TS=(Swed* OR Norway OR Norwegian OR Denmark OR Danish OR Finland OR Finnish OR Iceland* OR Nordic OR Scandinavia*)	633,724
9	All blocks Competence supply + Healthcare + Countries	#6 AND #7 AND #8	5,759
10	All blocks Competence supply + Healthcare	#6 AND #7	189,049
11	All blocks Competence supply + Healthcare + Filter for countries (Countries/Regions)	#6 AND #7 Refined by: COUNTRIES/REGIONS: (SWEDEN OR ICELAND OR NORWAY OR FINLAND OR DENMARK)	5,325
12	All blocks Competence supply + Healthcare + Countries OR All blocks Competence supply + Healthcare + Filter for countries	#9 OR #11	8,010

(Continued)



Web of Science (All databases) 2020-09-28 Healthcare			
Number	Description	Search string	Number of hits
13	Filter Publication Years: 2010–2021	#9 OR #11 Refined by: PUBLICATION YEARS: (2020 OR 2019 OR 2018 OR 2017 OR 2016 OR 2015 OR 2014 OR 2013 OR 2012 OR 2011 OR 2010)	3,916
14	Filter Document Types: Article Review	#9 OR #11 Refined by: PUBLICATION YEARS: (2020 OR 2019 OR 2018 OR 2017 OR 2016 OR 2015 OR 2014 OR 2013 OR 2012 OR 2011 OR 2010) AND DOCUMENT TYPES: (ARTICLE OR REVIEW)	3,800
15	Filter Languages: English Swedish	#9 OR #11 Refined by: PUBLICATION YEARS: (2020 OR 2019 OR 2018 OR 2017 OR 2016 OR 2015 OR 2014 OR 2013 OR 2012 OR 2011 OR 2010) AND DOCUMENT TYPES: (ARTICLE OR REVIEW) AND LANGUAGES: (ENGLISH OR SWEDISH)	3,740