



ELSEVIER

Contents lists available at ScienceDirect

NursingPlus Open

journal homepage: www.elsevier.com/locate/npls

Research article

The ‘magnetic forces’ of Swiss acute care hospitals: A secondary data analysis on nurses' job satisfaction and their intention to leave their current job



Annette Biegger^{a,*}, Sabina De Geest^c, Maria Schubert^c, Dietmar Ausserhofer^{b,c}

^a Ente Ospedaliero Cantonale, Ticino, Switzerland

^b College of Health-Care Professionals Claudiana, Bozen, Italy

^c Institute of Nursing Science, University of Basel, Switzerland

ARTICLE INFO

Article history:

Received 16 November 2015

Received in revised form

28 January 2016

Accepted 29 January 2016

Keywords:

Nursing

Job satisfaction

Job leaving intention

Acute care hospitals

Switzerland

ABSTRACT

Aims: (1) To describe nurses' job satisfaction and intention to leave their current employer; and (2) to explore the associations between nine aspects of job satisfaction (i.e., motivators and hygiene factors) and nurses' intentions to leave their current employer.

Background: Increasing nurse shortages and accelerating personnel turnover are global healthcare issues. Improving nurses' job satisfaction and reducing their intentions to leave are crucial to nurse workforce stability.

Methods: Secondary analysis of nurse survey data from the Swiss arm of the Nurse Forecasting in Europe (2009/2010) study. Associations between aspects of nurses' job satisfaction and intentions to leave were analyzed via multiple logistic regression analyses.

Results: Overall, nurses reported being very satisfied with their jobs and with 'independence at work', but less satisfied with the possibility for 'study leave'. A total of 27.4% intended to leave their current jobs, with lower ratings of 'opportunities for advancement' as the most relevant factor explaining these intentions.

Conclusion: In view of predicted nurse shortages, Swiss acute care hospitals' might improve their success regarding nurse job satisfaction and retention by offering nursing career models with more opportunities for clinical advancement.

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Background

Introduction

Increasing nurse shortages and accelerating personnel turnover are global healthcare issues (Oulton, 2006). In Switzerland, the demand for nurses is expected to increase dramatically until 2030. Despite observed increases in the number of registered nurses working in Swiss hospitals—from 48,000 to 54,000 between 2002 and 2008—this will result in nurse shortages (Jaccard Ruedin, Weaver, Roth, & Widmer, 2010). In fact, Swiss hospitals already rely heavily on foreign-trained nurses. To limit this dependency and provide a nurse workforce sufficient for future demands, the Swiss healthcare system has introduced allied healthcare assistants (Lacher, De Geest, Denhaerynck, Trede, & Ausserhofer, 2015). However, increasing the

number of nurses is only a partial solution. In order to recruit and retain sufficient nursing staff and thus to ensure safe, high quality care, hospital administrators need to recognize and focus on pivotal organizational factors of the nurse work environment, such as adequate staffing and skill-mix levels, the quality of the work environment, and indicators of nurses' well-being (e.g., job satisfaction, emotional exhaustion and intention to leave) (Aiken et al., 2014; Ausserhofer et al., 2014; Schubert et al., 2013).

In the U.S., Magnet[®] designated hospitals are known to be highly successful in attracting and retaining nurses, as they provide nurses excellent work environments, resulting in high job satisfaction, low emotional exhaustion and low intention to leave (Kelly, McHugh, & Aiken, 2011). In Switzerland, after surveying a national sample of 35 Swiss acute-care hospitals, Desmedt, Schubert, Schwendimann and Ausserhofer (2012) observed that nurses appraised the quality of their work environments (e.g., staffing and resource adequacy, collaboration with physicians) nearly as highly as those working in Magnet[®] hospitals in other countries. Still, despite these high ratings, the levels of these nurses' job satisfaction and which aspects of job satisfaction correlated with

* Correspondence to: Ente Ospedaliero Cantonale, Viale Officina 3, 6501 Bellinzona.

E-mail address: annette.biegger@eoc.ch (A. Biegger).

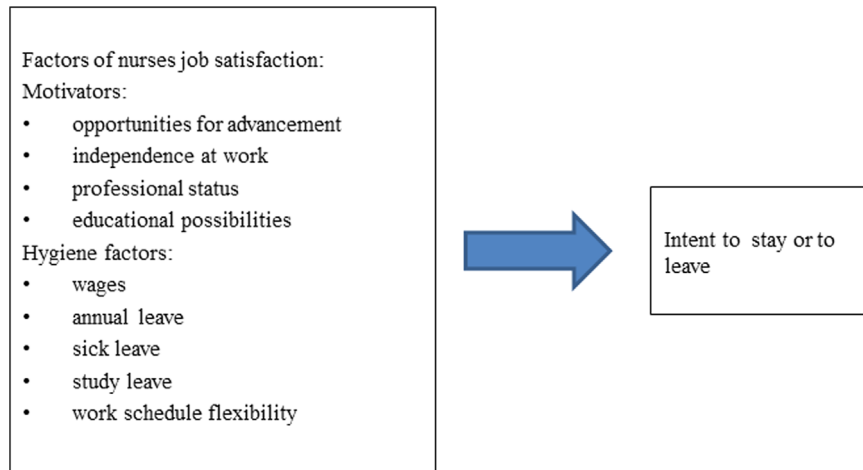


Fig. 1. Conceptual model of our study.

increased intentions to leave their current jobs remained unclear (Desmedt et al., 2012).

Nurses' job satisfaction

In the Nurse Forecasting in Europe (RN4CAST) study, which surveyed more than 33'000 hospital medical/surgical nurses employed by 488 hospitals in 12 European countries, one in five nurses (11–56%) reported dissatisfaction with his/her job. Varying remarkably across and within European countries (Aiken, Sloane, Bruyneel, Van den Heede, & Sermeus, 2013), job satisfaction is a complex phenomenon depending on the expectations a nurse has on the nature of the job. According to Lu, Barriballb, Zhanga and Whileb (2011), job satisfaction reflects individuals' affective orientation towards the work roles they presently occupy.

In a concept analysis on nursing job satisfaction, Castaneda and Scanlan (2014) concluded that "job satisfaction is an affective reaction to a job that results from the incumbent's comparison of actual outcomes with those that are desired, expected and deserved". This concept comprises the three central attributes for nursing job satisfaction: autonomy, interpersonal relationships, and patient care (Castaneda & Scanlan, 2014). Indeed, a meta-analysis including studies on registered staff nurses in hospital settings only showed that job satisfaction was most strongly associated with job stress, followed by nurse-physician collaboration and job autonomy (Zangaro & Soeken, 2007). Similarly, in Lu et al.'s (2011) systematic review, the factors demonstrating significant relationships with job satisfaction were job stress, organizational commitment, depression, cohesion of the ward nursing team, structural empowerment, organizational citizenship behaviors, job rotation, role stress and respect. A low composite perception of these factors, i.e., job dissatisfaction, has been suggested as important factor for nurses' intention to leave (Ellenbecker, Samia, Cushman, & Porell, 2007; Larrabee et al., 2003; McCarthy, Tyrrell, & Lehane, 2007). This is relevant because high intention to leave predict leads to important consequences for hospital administration and the healthcare environment, including higher turnover, high costs and loss of knowledge (Hayes et al., 2005; O'Brien-Pallas, Murphy, Shamian, Li, & Hayes, 2010).

Nurse intention to leave the job

Thus, in the context of predicted nurse shortages, a deeper understanding of nurses' intentions is critical. In the European RN4CAST study, considerable percentages (19%–49%) of nurses intended to leave their jobs, though the percentage who thought

finding a new job would be easy varied greatly across countries (16–77%) (Aiken et al., 2013).

The literature describes numerous reasons why nurses leave their jobs. Lynn and Redman (2005) found that intention to leave correlated with professional dissatisfaction, dissatisfaction with workload, dissatisfaction with colleagues and dissatisfaction with administrative support. Other factors apparently directly related to intention to leave nursing are individuals' lack of professional socialization, lack of interest in employment, and a need for a higher salary, particularly as the primary earner for a family (Lynn & Redman, 2005).

In a recent study of newly licensed registered nurses in Florida, Lynn and Ning (2014) found that this group's socio-demographic characteristics, expectations of work, and work characteristics influenced their job satisfaction, commitment and intention to stay or leave the job. In summary, overall job dissatisfaction has been confirmed as a precursor to intentions to leave a job; yet it remains unclear which specific aspects of job satisfaction are key regarding the development of these intentions (Lynn & Ning, 2014). In 1959, Herzberg et al. proposed that an employee's motivation to work is best understood when this attitude can be understood. To comprehend this internal concept of attitude, Herzberg et al. developed two list of factors, one causing positive feelings (motivators) and other causing negative feelings (hygiene factors) about one's job.

Conceptual model

To identify how motivators and hygiene factors are linked to nurses' job satisfaction and intention to leave the job (see Fig. 1), this study's conceptual model was based on Herzberg's Motivation-Hygiene Theory (Herzberg, Mausner, & Snyderman, 1959). Based on the premise that one set of job characteristics or incentives (motivators/satisfiers/intrinsic factors) leads to job satisfaction, while another, separate set leads to dissatisfaction (hygiene factors/maintenance factors/dissatisfier), Herzberg et al. (1959) proposed a two-factor model of motivation to work. Work-related or intrinsic factors are achievement, recognition, perceptions of the work itself, responsibility, and advancement. Therefore, instilling a lasting increase in satisfaction would involve developing a strong interest in one's work and its value, strengthening one's sense of responsibility, and fostering a reasonable expectation of advancement. In contrast, dissatisfaction factors reflect poor interaction with the work context or environment, e.g., inefficiencies within the organization, inadequate technical supervision, poor working

conditions, unproductive interpersonal relations with supervisors, low salary, and lack of recognition (House & Wigdor, 1968).

Study aims

Nurse retention is an urgent issue. Still, despite a wealth of literature and consistent findings on nurses' job satisfaction, relatively little is known about the impacts of motivators and hygiene factors either on job satisfaction or on job-leaving intentions. Therefore the aim of the study was to explore which motivators and hygiene factors in Swiss acute-care hospitals correlate significantly with nurses' job satisfaction and indicate significant implications of intention to leave the current job, this study addresses an important knowledge gap.

Methods

This study is a secondary analysis of nurse survey data from the Swiss arm of the RN4CAST study conducted between October 2009 and June 2010 (Ausserhofer et al., 2013; Ausserhofer et al., 2012; Sermeus et al., 2011).

Sample and setting

The Swiss arm of the RN4CAST study used a multi-stage sampling approach to survey nurses ($n=1647$) from 35 (30.2%) of Switzerland's 150 acute care hospitals. The 35 selected hospitals were selected using quota sampling by canton and geographical region. They were located across the German, French and Italian speaking regions of Switzerland, with each containing at least 60 beds. All registered nurses working in direct patient care on these selected hospitals' medical, surgical or mixed surgical-medical units were invited to participate. The overall response rate to the nurse survey was 72% (Desmedt et al., 2012).

Variables and measurements

Data for this study were derived from RNs' responses to the RN4CAST nurse questionnaire (Sermeus et al., 2011), which was based on instruments designed for the International Hospital Outcomes Study (IHOS) regarding in-patient nursing care organization and its impact on patient outcomes (Bruyneel, Van den Heede, Diya, Aiken, & Sermeus, 2009). The English version of the RN4CAST questionnaire was systematically translated into German, French, and Italian using a forward-backward process and an expert panel review (Desmedt et al., 2012; Sermeus et al., 2011).

Data were extracted regarding two single RN4CAST questionnaire items—the first on RNs' sociodemographic and professional characteristics, the second on their job satisfaction and intention to leave the current job.

Nurse outcomes

Overall *job satisfaction* was measured using a single question ("How satisfied are you with your current job in this hospital?"). The response was a 4-point Likert scale rating ("very dissatisfied" (1), "a little dissatisfied" (2), "moderately satisfied" (3) and "very satisfied" (4)). In accordance with previous studies' methods, we dichotomized responses into "dissatisfied" (very and moderately dissatisfied) or "satisfied" (moderately and very satisfied) (Aiken et al., 2013).

Moreover, to provide greater detail, nurses were asked about nine aspects of job satisfaction relating to motivation and occupational hygiene: *work schedule flexibility, opportunities for advancement, independence at work, professional status, wages, educational possibilities, annual leave* (days of vacation per year),

sick leave and *study leave* (possibilities to take days off for further education). To simplify and clarify the results, nurses' ratings regarding each of the nine selected job aspects were also dichotomized as either dissatisfied or satisfied ("very dissatisfied" and "moderately dissatisfied" = dissatisfied, "moderately satisfied" and "very satisfied" = satisfied).

Intention to leave was assessed using a single item asking nurses "If possible, would you leave your current hospital within the next year as a result of job dissatisfaction?" (Sermeus et al., 2011). Only two answer options were given for this question: "yes" and "no".

Nurse characteristics

The RN4CAST study gathered information on gender (male or female), age (in years), country where the respondent's nursing certificate was awarded (Switzerland or other), professional experience (number of years working as a nurse, and number of years working in the current hospital/ward) and percentage of full-time employment (10–100%) to describe the nurse sample. These were treated as possible confounding variables.

Data collection and ethical aspects

Between October 2009 and June 2010, on a date specified for each participating hospital, local study coordinators distributed nurse survey questionnaires to all nurses who met the inclusion criteria. Each hospital's questionnaire set was allotted a number, allowing the research team to identify where it was administered; however, the name of the hospital remained confidential (Sermeus et al., 2011). For the RN4CAST study, ethical approval was obtained from the cantonal ethics committees responsible for the participating hospitals (Ausserhofer et al., 2013; Schubert et al., 2013).

Data analysis

Descriptive statistics relating to central tendency (mean, median) and distribution (standard deviation and interquartile range) were used to describe the characteristics of the surveyed nurses. Due to the low number of missing values on the included variables (ranging from 2.7% to 6.1%) missing data were excluded listwise for all statistical analyses.

Logistic regression models were fitted to explore the association between each of the nine selected aspects of nurses' job satisfaction (motivators and hygiene factors) and their intention to leave the job. Adjustments were made for 'hospital' and 'nurse age', as these two variables were significantly associated with the explanatory and outcome variables. Multicollinearity between explanatory variables was tested using correlation analyses prior to building regression models. All analyses were performed using IBM SPSS[®] statistics (Version 20.0; IBM Inc, NY, USA). The level of significance was set at $\alpha \leq 0.05$.

Results

Nurse sample

Table 1 presents the characteristics of nurses working in the 35 hospitals of the RN4CAST Study. The majority were female and 20–30 years old. More than half had received their primary nursing education in Switzerland, with a similar proportion employed part-time. Respondents reported a mean of 11 years of experience in their current nursing roles.

Table 1
Nurse characteristics (n = 1647 nurses).

Nurses characteristics	n (%)
Sex (female) – n (%)	1483 (90)
Age – categories-n (%)	
20–30 years	711 (43.2)
31–40 years	416 (25.3)
41–50years	315 (19.1)
51–60 years	127 (7.7)
Education in CH (yes) – n (%)	1258 (76.4)
Years working-mean (SD)	
As a nurse	11.0 (9.5)
In the same hospital	8.0 (8.0)
Employment	
Full time (100%) – n (%)	771 (46.8)

Table 2
Nurses satisfaction with 4 motivators and 5 hygiene factors of job satisfaction on 35 hospitals of the RN4CAST study (n = 1647).

Aspects	Satisfied (N= 1647)
Motivators:	
Opportunities for advancement- n (%)	1123 (68.2)
Independence at work-n (%)	1543 (93.7)
Professional status- n (%)	1410 (84.4)
Educational possibilities- n (%)	1267 (76.9)
Hygiene factors:	
Wages – n (%)	1076 (65.3)
Annual leave – n (%)	997 (60.5)
Sick leave – n (%)	1362 (82.7)
Study leave – n (%)	971 (58.9)
Work schedule flexibility – n (%)	1293 (78.5)

Job satisfaction and intention to leave

Across the 35 analyzed hospitals, 78% of the 1647 respondents reported overall job satisfaction. Of the remainder, 20.6% reported dissatisfaction, with only 1.3% leaving the job satisfaction questions unanswered.

As Table 2 indicates, of the nine aspects of job satisfaction, nurses were most satisfied with ‘independence at work’ (93.7%). Large majorities also reported satisfaction with their ‘professional status’ (84.4%) and ‘sick leave’ (82.7%). They reported less satisfaction with the possibilities for “study leave” (58.9%) or “annual leave” (60.5%).

A total of 27.4% of the sample intended to leave their current job within one year; 71.9% had no intention to leave their job; and 0.7% left the relevant question unanswered.

Associations between job satisfaction and intention to leave

Findings relating to the simple and multiple logistic regression models are summarized in Table 3. The fit for the logistic regression yielded a Nagelkerke R-squared of 0.188 for the unadjusted and 0.191 for the adjusted model, indicating an acceptable effect. After adjusting for hospital characteristics and nurses' age, six of the nine investigated aspects (work schedule flexibility, opportunities for advancement, independence at work, professional status, wages and sick leave) correlated significantly with intention to leave the current job. The strongest predictor for intention to leave was ‘Opportunities for advancement’. Compared with nurses reporting satisfaction with this aspect, those reporting dissatisfaction were 2.59 times more likely to intend to leave their current job within one year.

Table 3
Dimensions of job satisfaction related to intention to leave in 35 hospitals (RN4CAST Study). A multivariate analysis. n = 1647.

	Unadjusted model			Adjusted model ^a		
	OR	(CI 95%)	P-value	OR	(CI 95%)	P-value
Motivators:						
Opportunities for advancement- n (%)	2.59	(1.93–3.48)	0.000	2.6	(1.93–3.50)	0.000
Independence at work – n (%)	1.84	(1.11–3.05)	0.018	1.88	(1.12–3.15)	0.017
Professional status – n (%)	1.48	(1.04–2.12)	0.031	1.49	(1.03–2.14)	0.033
Educational possibilities – n (%)	1.02	(0.73–1.42)	0.919	1.02	(0.73–1.43)	0.904
Hygiene factors:						
Wages – n (%)	1.43	(1.09–1.87)	0.009	1.41	(1.08–1.86)	0.013
Annual leave – n (%)	1.09	(0.83–1.44)	0.530	1.07	(0.81–1.43)	0.608
Sick leave – n (%)	1.83	(1.30–2.59)	0.001	1.88	(1.32–2.68)	0.000
Study leave – n (%)	1.12	(0.84–1.50)	0.443	1.13	(0.84–1.53)	0.409
Work schedule flexibility – n (%)	1.92	(1.44–2.57)	0.000	1.88	(1.40–2.53)	0.000

^a In the adjusted model the OR are adjusted for “hospital” and “age” of the surveyed nurses.

Discussion

In the context of a national sample of Swiss acute-care hospitals offering high-quality nurse work environments (Desmedt et al., 2012), this study explored how various motivator- and occupational hygiene-related aspects of nurse job satisfaction correlated with intention to leave the current job. Our secondary data analysis revealed overall high job satisfaction, but also a considerable proportion of nurses intending to leave their current jobs. Dissatisfaction with ‘opportunities for advancement’, ‘work schedule flexibility’ and ‘independence at work’ were the strongest factors explaining intention to leave.

Overall, three-quarters of the surveyed nurses were satisfied with their current job—a rather high proportion compared with other European countries (Aiken et al., 2012). Indeed, Swiss acute-care hospitals' excellent working conditions propagate high nurse job satisfaction, an important ‘pull factor’ to attract foreign-trained nurses. Currently, 38% of the Swiss nurse workforce received training outside Switzerland (Jaccard Ruedin & Widmer, 2010). However, while the inflow of foreign-trained nurses maintains a stable nurse workforce in Switzerland, it also raises important questions regarding both the ‘brain drain’ of healthcare professionals from these nurses' home countries and Switzerland's need for greater self-sufficiency regarding its national nurse workforce.

As noted above, the majority of our nurse sample indicated high satisfaction with ‘professional status’ and ‘independence at work’. However, in line with international studies, they registered lower satisfaction with ‘opportunities for advancement’, ‘study leave’ and ‘educational possibilities’ (Ellenbecker et al., 2007; Hegney, Plank, & Parker, 2006; Hoffman & Scott, 2003; Milisen, Abraham, Siebens, Darras, & Dierckx de Casterle, 2006).

Despite their overall high job satisfaction, roughly 30% of the respondents indicated that they intended to leave their current job. Six of the nine items on selected aspects of job satisfaction yielded significant results. While multiple logistic regression analysis revealed that the three aspects nurses afforded their least satisfaction— ‘study leave’, ‘annual leave’ and ‘educational possibilities’—were not significantly associated with intention to leave,

job-leaving intentions were amply explained by data from other items. Specifically, satisfaction with 'opportunities for advancement' was the most important predictor of nurses' intentions to stay in the job. This suggests that nurses working in Swiss acute-care hospital settings have particularly high expectations of their hospital leaders regarding innovation career models (e.g., Advanced Practice Nursing) that facilitate lifelong learning and greater involvement in hospital policies and decisions, (implying increased opportunities for advancement) (Aiken et al., 2013; Coomber & Barriball, 2007; Rambur, Palumbo, McIntosh, & Mongeon, 2003). However, further qualitative research is necessary to further understand nurses' perceptions of opportunities for advancement in Swiss acute-care hospitals.

Strengths and limitations of the study

As this study is a secondary data analysis, its greatest strength is its data source: the largest national nurse survey study yet conducted in Swiss acute care hospitals. However, three major limitations also affect it. First, the cross-sectional nature of the data precludes any causal inferences. Second, although the survey items regarding the nine aspects of job satisfaction have been used in previous international studies, such as RN4CAST, so far only the content validity of these items has been confirmed. Third, as this is a secondary data analysis, factors explaining nurses' job satisfaction and intention to leave may have gone unmeasured. Indeed, Kovner et al. argued compellingly that job satisfaction depends on factors related not only to the work and the individual, but also to geography (Kovner, Brewer, Wu, Cheng, & Suzuki, 2006; Ma, Samuels, & Alexander, 2003).

Implications for clinical nursing practice, research and health care policy

Analysis of this study's data indicate that, even as nurses in Swiss acute care hospitals reported overall high job satisfaction, one-quarter intended to leave their jobs. As not all of the surveyed aspects of job satisfaction correlated significantly with intention to leave, the success of any interventions based on this study's results will depend largely on careful definition of their objectives. However, one principle is clear: if the objectives include nurse retention, then nurse satisfaction with opportunities for advancement has to be enhanced.

On grouping responses by hospital, we noticed that both intention to leave and satisfaction with working conditions varied sharply from one institution to the next, which complicates the search for a universally beneficial approach. Such broad inter-hospital variation is a cause for concern: until such disparities are minimized, even at the cantonal level, no rapid or broadly applicable solutions to emerging problems will be possible. For these reasons, it will be necessary to analyze in greater detail the disparate working conditions in individual Swiss hospitals.

The majority of the included nurses was relatively young (20–30 years) and had 10–11 years of experience, more than one-quarter of whom had completed their education abroad. Such a high proportion of foreign nurses reflects Switzerland's outstanding reputation (based largely on its excellent work environments and high remuneration) in the international nursing community. Regarding healthcare policy, it is advantageous that nursing in Switzerland remains attractive to nurses abroad, as foreign-trained nurses offer a temporary solution to the shortage of Swiss-trained personnel. However, for long-term human resource planning, it would be advisable to increase the number of locally trained nurses while actively promoting nursing as an attractive profession. Still, for the foreseeable future, given the coming demographic shift and shortage of healthcare workers it will precipitate, any

reasonable scenario will include Switzerland's continued dependence on nurses from abroad.

Conflict of interest

The authors declare no conflict of interest.

Ethical approval

This study is a secondary analysis of nurse survey data from the Swiss arm of the RN4CAST study conducted between October 2009 and June 2010. For this study, ethical approval was obtained from the cantonal ethics committees responsible for the participating hospitals.

Role of funding source

The corresponding Author wrote this article in collaboration with the Institute of Nursing Science at the University of Basel.

Funding Source: Institut für Pflegewissenschaften, Universität Basel, Bernoullistrasse 284056 Basel.

References

- Aiken, L. H., Sermeus, W., Van den Heede, K., Sloane, D. M., Busse, R., McKee, M., ... Kutney-Lee, A. (2012). Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*, 344, e1717. <http://dx.doi.org/10.1136/bmj.e1717>.
- Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., Griffiths, P., Busse, R., ... Sermeus, W. (2014). Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. *Lancet*, 383(9931), 1824–1830. [http://dx.doi.org/10.1016/S0140-6736\(13\)62631-8](http://dx.doi.org/10.1016/S0140-6736(13)62631-8).
- Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., & Sermeus, W. (2013). Nurses' reports of working conditions and hospital quality of care in 12 countries in Europe. *International Journal of Nursing Studies*, 50(2), 143–153.
- Ausserhofer, D., Schubert, M., Desmedt, M., Blegen, M. A., De Geest, S., & Schwendimann, R. (2013). The association of patient safety climate and nurse-related organizational factors with selected patient outcomes: a cross-sectional survey. *International Journal of Nursing Studies*, 50(2), 240–252. <http://dx.doi.org/10.1016/j.ijnurstu.2012.04.007>.
- Ausserhofer, D., Schubert, M., Engberg, S., Blegen, M., De, G., & Schwendimann, R. (2012). Nurse-reported patient safety climate in Swiss hospitals: a descriptive-exploratory substudy of the Swiss RN4CAST study. *Swiss Medical Weekly*, 142(0), <http://dx.doi.org/10.4414/smw.2012.13501>.
- Ausserhofer, D., Zander, B., Busse, R., Schubert, M., De Geest, S., Rafferty, A. M., ... consortium, Rn4Cast (2014). Prevalence, patterns and predictors of nursing care left undone in European hospitals: results from the multicountry cross-sectional RN4CAST study. *BMJ Quality and Safety*, 23(2), 126–135. <http://dx.doi.org/10.1136/bmjqs-2013-002318>.
- Bruyneel, L., Van den Heede, K., Diya, L., Aiken, L., & Sermeus, W. (2009). Predictive validity of the International Hospital Outcomes Study questionnaire: an RN4CAST pilot study. *Journal of Nursing Scholarship*, 41(2), 202–210. <http://dx.doi.org/10.1111/j.1547-5069.2009.01272.x>.
- Castaneda, G. A., & Scanlan, J. M. (2014). Job satisfaction in nursing: a concept analysis. *Nursing Forum*, 49(2).
- Coomber, Billie, & Barriball, K. (2007). Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: a review of the research literature. *International Journal of Nursing Studies*, 44(2), 297–314.
- Desmedt, M., De Geest, S., Schubert, M., Schwendimann, R., & Ausserhofer, A. (2012). A multi-method study on the quality of the nurse work environment in acute-care hospitals: positioning Switzerland in the Magnet hospital research. *Swiss Med Wkly*, 142(13733).
- Ellenbecker, C. H., Samia, L., Cushman, M. J., & Porell, F. W. (2007). Employer retention strategies and their effect on nurses' job satisfaction and intent to stay. *Home Health Care Services Quarterly*, 26(1), 43–58.
- Hayes, L. J., O'Brien-Pallas, L., Duffield, C., Shamia, J., Buchand, J., Hughes, F., ... Stone, P. W. (2005). Nurse turnover: a literature review. *International Journal of Nursing Studies*, 43(2006), 237–263.
- Hegney, D., Plank, A., & Parker, V. (2006). Extrinsic and intrinsic work values: their impact on job satisfaction in nursing. *Journal of Nursing Management*, 14(4), 271–281. <http://dx.doi.org/10.1111/j.1365-2934.2006.00618.x>.
- Herzberg, F., Mausner, B., & Snyderman, B. (1959). *The Motivation to Work*. (Vol. 2. Aufl.). New York.

- Hoffman, A. J., & Scott, L. D. (2003). Role stress and career satisfaction among registered nurses by work shift patterns. *Journal of Nursing Administration*, 33(6), 337–342.
- House, R. J., & Wigdor, L. A. (1968). Herzberg's dual-factor theory of job satisfaction and motivation: a review of the evidence and criticism. *Personnel Psychology*, 20(4), 369–390.
- Jaccard Ruedin, H., Weaver, F., Roth, M., & Widmer, M. (2010). Gesundheitspersonal in der Schweiz-Bestandesaufnahme und Perspektiven bis 2020. *obsan fact sheet, Schweizerisches Gesundheitsobservatorium, Bundesamt für Statistik*.
- Jaccard Ruedin, H., & Widmer, M. (2010). Ausländisches Gesundheitspersonal in der Schweiz. *Obsan Bulletin*, 4/2010.
- Kelly, L. A., McHugh, M. D., & Aiken, L. H. (2011). Nurse outcomes in magnet A and non-magnet hospitals. *Journal of Nursing Administration*, 41(10), 428–433.
- Kovner, C., Brewer, C., Wu, Y. W., Cheng, Y., & Suzuki, M. (2006). Factors associated with work satisfaction of registered nurses. *Journal of Nursing Scholarship*, 38(1), 71–79.
- Lacher, S., De Geest, S., Denhaerynck, K., Trede, I., & Ausserhofer, D. (2015). The quality of nurses' work environment and workforce outcomes from the perspective of Swiss allied healthcare assistants and registered nurses: a cross-sectional survey. *Journal of Nursing Scholarship*, 47(5).
- Larrabee, J. H., Janney, M. A., Ostrow, C. L., Withrow, M. L., Hobbs, G. R., & Burant, C. (2003). Predicting registered nurse job satisfaction and intent to leave. *Journal of Nursing Administration*, 33(5), 271–283.
- Lu, H., Barriball, K. L., Zhanga, X., & Whileb, A. E. (2011). Job satisfaction among hospital nurses revisited: a systematic review. *International Journal of Nursing Studies*, 49.
- Lynn, M. R., & Redman, R. W. (2005). Faces of the nursing shortage: influences on staff nurses' intentions to leave their positions or nursing. *Journal of Nursing Administration*, 35(5), 264–270.
- Lynn, Y., & Ning, J. Z. (2014). Newly licensed registered nurse job turnover and turnover intent. *Journal for Nurses in Professional Development*, 30(5), 220–230.
- Ma, C., Samuels, M. E., & Alexander, J. W. (2003). Factors that influence nurses' job satisfaction. *Journal of Nursing Administration*, 33(5), 293–299.
- McCarthy, G., Tyrrell, M. P., & Lehane, E. (2007). Intention to 'leave' or 'stay' in nursing. *Journal of Nursing Management*, 15(3), 248–255. <http://dx.doi.org/10.1111/j.1365-2834.2007.00648.x>.
- Milisen, K., Abraham, I., Siebens, K., Darras, E., & Dierckx de Casterle, B. (2006). Work environment and workforce problems: a cross-sectional questionnaire survey of hospital nurses in Belgium. *International Journal of Nursing Studies*, 43(6), 745–754.
- O'Brien-Pallas, L., Murphy, G. T., Shamian, J., Li, X., & Hayes, L. J. (2010). Impact and determinants of nurse turnover: a pan-Canadian study. *Journal of Nursing Management*, 18(8), 1073–1086.
- Oulton, J. A. (2006). The global nursing shortage: an overview of issues and actions. *Policy Politics Nursing Practice*, 7(3).
- Rambur, B., Palumbo, M. V., McIntosh, B., & Mongeon, J. (2003). A statewide analysis of RNs' intention to leave their position. *Nursing Outlook*, 51(4), 182–188.
- Schubert, M., Ausserhofer, D., Desmedt, M., Schwendimann, R., Lesaffre, E., Li, B., & De Geest, S. (2013). Levels and correlates of implicit rationing of nursing care in Swiss acute care hospitals—a cross sectional study. *International Journal of Nursing Studies*, 50(2), 230–239. <http://dx.doi.org/10.1016/j.ijnurstu.2012.09.016>.
- Sermeus, W., Aiken, L. H., Van den Heede, K., Rafferty, A. M., Griffiths, P., Moreno-Casbas, M. T., ... Zikos, D. (2011). Nurse forecasting in Europe (RN4CAST): rationale, design and methodology. *BMC Nursing*, 10(6).
- Zangaro, G. A., & Soeken, K. L. (2007). A meta-analysis of studies of nurses' job satisfaction. *Research in Nursing Health*, 30, 445–458.