

Social support from manager and co-workers in relation to registered nurses' work motivation in three healthcare settings: *A cross-sectional study of a Swedish national sample*

Carina Ahlstedt¹  | Linda Moberg^{1,2} | Emma Brulin³ | Anna Nyberg⁴

¹Department of Public Health and Caring Sciences, Health Services Research, Uppsala University, Uppsala, Sweden

²Department of Government, Uppsala University, Uppsala, Sweden

³Institute of Environmental Medicine, Unite of Occupational Medicine, Karolinska Institutet, Stockholm, Sweden

⁴Department of Public Health and Caring Science, Health Equity and Working Life, Uppsala University, Uppsala, Sweden

Correspondence

Carina Ahlstedt, Department of Public Health and Caring Sciences, Health Services Research, Uppsala University, BMC, Box 564, 751 22 Uppsala, Sweden.
Email: carina.ahlstedt@uu.se

Abstract

Background: Having more registered nurses (RNs) leave their workplace, with a shortage of RNs in healthcare as a consequence, might pose a risk to patient safety. According to the Job Demands Resource model, social support is a resource that can enhance work motivation, and if RNs are motivated at work, their willingness to remain in the workplace may increase.

Objective: The aims were to explore (1) differences in RNs' experiences of social support from their immediate manager and co-workers between different healthcare settings, (2) associations between RNs' experiences of social support and aspects of work motivation, and (3) if these associations differed in strength between healthcare settings.

Design: A cross-sectional study design.

Methods: A stratified population of Swedish RNs, $n=2290$, working in either hospitals, primary care, or home healthcare, responded to a survey in 2022. Chi-squared tests and linear and logistic regression analyses were used to analyze the data. Interaction was measured by adding an interaction term to the fully adjusted regression models. The findings' generalizability was strengthened by including calibrating weights in all analyses.

Results: RNs in primary care reported higher social support from their immediate manager than RNs in hospitals and home healthcare. RNs in home healthcare reported lower social support from co-workers than RNs in hospitals and primary care. There were statistically significant associations between higher levels of social support from the immediate manager and co-workers, respectively, and higher ratings in all aspects of work motivation: work engagement (manager: beta coefficient [b]=0.08, confidence interval [CI] 95%=0.05; 0.10; co-workers: $b=0.12$, CI 95%=0.08; 0.16), job satisfaction (manager: $b=0.24$, CI 95%=0.21; 0.27; co-workers: $b=0.22$, CI 95%=0.16; 0.28), opportunities to provide high-quality care (manager: $b=0.15$, CI 95%=0.11; 0.18; co-workers: $b=0.19$, CI 95%=0.13; 0.24), satisfaction with the employer (manager: $b=0.46$, CI 95%=0.42; 0.50; co-workers: not statistically significant)

Details regarding NCPD can be found following the References section.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2024 The Author(s). *Journal of Nursing Scholarship* published by Wiley Periodicals LLC on behalf of Sigma Theta Tau International.

and intention to remain at the workplace (manager: odds ratio = 1.89, CI 95% = 1.69; 2.13; co-workers: odds ratio = 1.42, CI 95% = 1.17; 1.72). The associations differed in strength between hospitals, primary care, and home healthcare.

Conclusions: Strengthening social support from the immediate manager and co-workers appears to be a way to increase RNs' work motivation, including their intention to remain at the workplace. This may be important, particularly in primary care and home healthcare.

Clinical Relevance: To strengthen RNs' work motivation and willingness to stay in the workplace, it appears important for healthcare organizations to provide RN social support.

KEYWORDS

healthcare organizations, motivation, registered nurse, social support, work environment

INTRODUCTION

The global issue of a shortage of registered nurses (RNs) and the growing prevalence of agency nurses, who are only temporarily assigned to a workplace and lack familiarity with colleagues or routines to the same extent as permanent staff, could lead to adverse effects on patient safety (Ball et al., 2018; Dall'Ora et al., 2020; Simpson & Simpson, 2019; WHO, 2021). Addressing work motivation, which might influence RNs' decisions to remain as permanent staff in a workplace, therefore appears important (Deci et al., 2017). According to the Job Demands Resource model (JD-R), social support is a resource that buffers against demands and is a crucial factor in strengthening the motivational process (Bakker et al., 2023). The link between social support and motivation has been established in empirical studies on healthcare personnel (Blanco-Donoso et al., 2019; Chen et al., 2016; Hu et al., 2017; de Lange et al., 2008). However, previous research is based on small non-representative samples with imprecise definitions of both population groups and the concept of social support. To fill this research gap, we use a large national sample of Swedish RNs and explore associations between social support from the immediate manager and co-workers, respectively, and various aspects of work motivation.

In Sweden, as in many other nations, healthcare is predominantly provided through hospitals, primary care facilities, and home healthcare services. Each of these entities operates with distinct organizational logics that can influence the conditions for social support extended to RNs (Janlöv et al., 2023). For instance, RNs in hospital settings often collaborate with a broader array of occupational categories, fostering a more varied professional environment. In contrast, RNs in primary care usually function in smaller workgroups, cultivating closer relationships with a more limited number of colleagues, including physicians, fellow RNs, and assistant nurses. In home healthcare, RNs oversee a significantly larger number of patients compared to those in hospitals, and the care is provided directly in the patients' homes. Notably, RNs in home healthcare also work independently for a significant portion of their professional time, setting it apart from

the collaborative dynamics observed in hospital and primary healthcare settings. Based on these differences, social support may assume varied roles in the motivational processes for RNs across different healthcare settings. Empirically, however, there is a knowledge gap regarding the specific impact of social support on work motivation in different healthcare environments, in Sweden as well as in other countries. Thus, the objective of this study is to address this gap and explore whether associations between RNs' experiences of social support and work motivation differ across healthcare settings. This is further justified by the ambition of many countries to, due to an aging population, provide more healthcare outside of hospitals (Janlöv et al., 2023; WHO, 2022).

Social support

Social support at work generally refers to the help or assistance – whether emotional, psychological, or material – that a person receives from others in the workplace (Jolly et al., 2021). It is a core dimension in several job content models, for example, the JD-R model, which Bakker and Demerouti introduced in the early 2000s (Bakker & Demerouti, 2017). According to the JD-R model, job demands and resources can initiate two different processes: a health impairment process (demands) and a motivational process (resources), where the resources can act as a buffer against demands (Bakker et al., 2023). Job demands can cause employees to deplete their physical, emotional, and cognitive resources, which may result in exhaustion and burnout (Bakker et al., 2023). In contrast, job resources (e.g., social support) can fulfill psychological needs and, by extension, enhance favorable organizational outcomes, such as creativity and performance (Bakker et al., 2023; Bakker & Xanthopoulou, 2013) and counteract the development of poor health (e.g., Adriaenssens et al., 2015; Bakker & Demerouti, 2017; Wu et al., 2021). In the present study, we focus on social support as a resource in the motivational process of RNs and link RNs' perceptions of social support from immediate managers and co-workers, respectively, with work motivation.

Work motivation

Work motivation has been conceptualized in various ways across different theoretical frameworks (Gagné & Deci, 2005; Toode et al., 2011). In their review, Toode et al. (2011) define work motivation among RNs as the willingness or aspiration to work well, exert effort, and perform effectively. They further state that work motivation is driven by the urge to succeed at work and reach goals. Lastly, the Toode et al. (2011) state that work motivation is conditioned by working conditions signified by high levels of job demands and resources. The basic needs for work motivation can be described in terms of a sense of purpose and meaning, competence, and relatedness (Ryan & Deci, 2017). Based on these conceptualizations, we examine work engagement, job satisfaction, opportunities to provide high-quality care, satisfaction with the employer, and intention to remain in the workplace.

Work engagement pertains to a positive and fulfilling mindset that individuals cultivate in relation to their work, characterized by qualities such as energy, enthusiasm, and engagement (Schaufeli et al., 2019) and aligns with the desire to work well (Toode et al., 2011) and feeling a sense of meaningfulness at work (Ryan & Deci, 2017). RNs aspire to give their utmost effort and perform at their best and their sense of relatedness is operationalized as *job satisfaction* (Ryan & Deci, 2017; Toode et al., 2011). Job satisfaction can be described as the positive attitudes and judgments a person has toward their work, which might create conditions that foster enthusiasm for the work (Breugh et al., 2018; Deci et al., 2017). The drive to excel at work and achieve goals is measured as *the opportunity to provide high-quality care* (Ryan & Deci, 2017; Toode et al., 2011). RNs' opportunity to provide quality care has been described as a core driving force in their work (Dill et al., 2016; Kjellström et al., 2017), pertaining to meaningful work and a sense of accomplishment (Amabile & Kramer, 2007; Deci et al., 2017).

As Toode et al. (2011) suggest that motivation is conditioned, we also examine employees' *satisfaction with the employer*, which is also related to work motivation, as experiencing satisfaction might enhance energy and drive (Amabile & Kramer, 2007; Deci et al., 2017). Lastly, we are studying the *intention to remain at the workplace*, as previous research has found that individuals who report low levels of motivation also, to a greater extent, are considering leaving their jobs (Deci et al., 2017; Gagné et al., 2022).

Social support and RNs' work motivation

There is limited research on the link between social support and RNs' work motivation. Below, we present previous studies that include RNs and explore the association between social support and aspects of work motivation included in the present study.

Work engagement and job satisfaction

Previous research has identified a positive association between social support from both managers and colleagues and nurses' work

engagement (e.g., Blanco-Donoso et al., 2019; Vera et al., 2016). However, the links appear to differ depending on the source of social support. Othman & Nasurdin (2013) observed an association between managerial social support and RNs' work engagement, but not between support from colleagues and work engagement. Similarly, previous research has demonstrated that social support from managers was positively associated with higher *job satisfaction* in RNs (Orgambidez & Almeida, 2020; Rodwell & Munro, 2013; Seo et al., 2004). However, regarding social support from co-workers, one study reported a statistically significant association with job satisfaction in nurses (Orgambidez & Almeida, 2020), while another one indicated that there was no such association (Seo et al., 2004). Limitations of these studies are that they either used relatively small and non-representative samples (Blanco-Donoso et al., 2019; Rodwell & Munro, 2013) or did not clarify if the sample included only RNs (e.g., Blanco-Donoso et al., 2019; Orgambidez & Almeida, 2020; Vera et al., 2016).

Opportunity to provide high-quality care, satisfaction with the employer, and intention to remain in the workplace

To the best of our knowledge, there are no previous studies focusing primarily on the social support of RNs and its relationship to RNs' *opportunities to provide high-quality care*. However, research has identified that support from managers and team members (including RNs) is a significant factor in delivering high-quality care (Najafi Ghezleji et al., 2021; Rosen et al., 2018). Furthermore, there appears to be a lack of studies demonstrating a relationship between RNs' perceptions of social support and their reported *satisfaction with the employer*. Moreover, although results from previous studies indicate a positive correlation between social support in healthcare staff, including RNs, and their *intention to remain in the workplace* (Chen et al., 2016; Eltaybani et al., 2018; Masum et al., 2016), the study samples did not exclusively consist of RNs, and the type of support referred to was unclear.

As outlined above, several limitations in previous research on social support and work motivation in RNs justify an investigation of the topic in a large, nationally representative sample. Through this design, we increase the possibility of generalizing the findings to RNs across Sweden. Moreover, several aspects of work motivation that have been largely overlooked in previous research are investigated in relation to social support from managers and co-workers.

Social support and work motivation in different healthcare settings

In many countries, an aging population is driving a shift toward more healthcare services outside hospitals. This necessitates recruiting and retaining more RNs in primary care and home healthcare (WHO, 2021). Exploring whether RNs' perceptions of social

support and work motivation differ across healthcare settings may provide vital information for this transition. Our focus on Sweden as a case study is warranted, given that a substantial portion of healthcare services in the country are already administered in primary care and the home healthcare sector (Janlöv et al., 2023). Examining perceived social support becomes particularly relevant due to the distinct organizational logic inherent in various healthcare settings. Hospitals typically boast greater availability of resources in terms of expertise and material resources. For example, physicians, RNs, and nursing assistants work together with other occupations, such as occupational therapists and physiotherapists, in the same location. Although RNs in primary care settings, for instance healthcare center, work in collaboration with physicians and other occupations, they have more limited access to advanced medical resources if emergency situations occur, compared to RNs working in hospitals. Home healthcare, including nursing homes, presents an even more limited support structure for RNs. With no employed physicians, and even more limited access to advanced medical resources compared to primary care, home healthcare RNs face additional challenges, especially during emergency situations. The logistical complexities are also more pronounced as care is administered and provided within the patient's home (Janlöv et al., 2023). In home healthcare, RNs also work independently for a significant portion of their professional time, and they oversee a large number of patients. Assistant nurses or healthcare assistants, who are the ones spending most time with the patients, are responsible for reporting to the RN if any needs arise. The RN, in turn, can consult with a physician, who is usually employed at the healthcare center. This nuanced differentiation underscores the diverse challenges confronting RNs across varied healthcare settings. To the best of our knowledge, it is unknown to what extent perceived social support from the immediate manager and co-workers, respectively, and associations with work motivation, differ between RNs employed in hospitals, primary care, or home healthcare.

Aim and research questions

The overall aim of the study was to explore RNs' experiences of social support in different healthcare settings in association with work motivation in terms of work engagement, job satisfaction, opportunities to provide high-quality care, satisfaction with the employer, and intention to remain at the workplace.

To address this aim, three specific research questions were investigated:

1. Do the levels of reported social support from the immediate manager and co-workers, respectively, differ between RNs working in hospitals, in primary care, and in home healthcare settings?
2. Is there an association between social support from the immediate manager and co-workers, respectively, and work motivation?

3. Do associations between social support from the immediate manager and co-workers, respectively, and work motivation differ in strength between different healthcare settings?

METHODS

Study design and population

In this study, a cross-sectional study design was employed to address the research aim. The data used for analysis were obtained from the 2022 Longitudinal Occupational Health Survey in Healthcare Sweden. Details regarding the development of the questionnaire can be found in a separate publication by Hagqvist et al. (2022). The survey was administered through a series of invitations sent out by Statistics Sweden between March and May 2022. Four letters were sent to each prospective participant, each containing the information necessary for accessing an electronic version of the questionnaire. In the third letter, prospective participants received a paper version of the survey. The Longitudinal Occupational Health Survey in Healthcare Sweden cohort encompasses a representative sample of physicians, RNs, and nurse assistants between 18 and 69 years old. However, for the purposes of this study, only data from the RNs were used. Statistics Sweden drew the sample from the Register on Participation in Education in 2020–2021 and the Swedish Occupational Register in 2020 (nurse code SSK 222, 223). The population was stratified based on administrative healthcare regions to get a geographical spread. RNs who had not worked in Sweden in the preceding year were removed from the sample. In order to work as an RN within Sweden's healthcare system, an individual must have a bachelor's degree in nursing or medicine and have a license. In total, 2903 participants answered the questionnaire (response rate 37.3%). For the present study, we excluded school nurses, RNs in occupational healthcare, and RNs who indicated more than one workplace since the sample had to be restricted to RNs who reported working in either a hospital, primary care, or home healthcare. For the research question on the immediate manager's social support, we also excluded RNs who reported having responsibility for employees. The final sample included 2290 participants between 23 and 69 years old.

Measures

Social support

Social support from the immediate manager was measured with a single item: 'If needed, do you receive help and support from your immediate manager?' Responses were given on a five-point Likert scale from 'never/almost never' to 'always', and the variable was analyzed as a continuous variable. The respondents also had the option to answer 'not applicable'.

Social support from co-workers was measured with a single item: 'If needed, do you receive help and support from your co-workers?' Responses were given on a five-point Likert scale from 'never/almost never' to 'always', and the variable was analyzed as a continuous variable. The respondents also had the option to answer 'not applicable'. These are two core items from the third version of the Copenhagen Psychosocial Questionnaire (Berthelsen et al., 2020).

Work motivation

We used five measurements of work motivation in this study: work engagement, job satisfaction, opportunities to provide high-quality care, satisfaction with the employer and intention to remain in the workplace.

Work engagement was measured using the Ultra-Short Measure for Work Engagement, a validation scale used in the new Swedish standard version of Copenhagen Psychosocial Questionnaire Version III, developed for workplaces and research in Sweden (Berthelsen et al., 2020; Burr et al., 2019; Schaufeli et al., 2019). The questionnaire comprises three subscales within a single index. RNs were presented the introductory phrase 'How frequently do you encounter the following at your workplace?' followed by the statements 'I experience a surge of energy when performing my job', 'I maintain enthusiasm for my work', and 'I am deeply engaged in my tasks'. Participants responded on a five-point Likert scale ranging from 'never/almost never' to 'always'. Internal consistency was 0.78, and we calculated the work engagement index as the mean sum score. A single item was used to measure *job satisfaction*: 'How satisfied or dissatisfied are you with your job?' Responses were given on a five-point Likert scale from 'very dissatisfied' to 'very satisfied'. *Opportunities to provide high-quality care* were also measured with a single item: 'At my workplace, I have the opportunity to provide high-quality care to all patients'. Responses were given on a five-point Likert scale, ranging from 'to a very low extent' to 'to a very high extent'. Next, satisfaction with the employer was measured using a single item: 'How satisfied or dissatisfied are you with your employer?' Responses were given on a five-point Likert scale from 'very dissatisfied' to 'very satisfied'. All the above variables were analyzed as continuous variables. *Intention to remain at the workplace* was assessed using a single item that has also been used in the Swedish Longitudinal Occupational Survey of Health (Hanson et al., 2018). The item inquired: 'How often in the past 12 months have you contemplated applying for a new job?' Participants responded on a five-point scale: 1=every day; 2=a few times a week; 3=a few times a month; 4=a few times in the last 12 months; 5=not at all in the last 12 months. Due to the unequal intervals in the response options, we decided to dichotomize the item in accordance with Field's methodology (2018). The dichotomized variable was defined as follows: (1) 'Has contemplated applying for a new job in the last 12 months' (1–4) (reference category); (2) 'Has not contemplated applying for a new job in the last 12 months' (5).

Healthcare settings

The RNs' workplaces were divided into three categories based on healthcare settings: hospitals, primary care, and home healthcare. The category *hospital* was used for RNs who reported working in a hospital with inpatient care. *Primary care* included RNs employed in primary healthcare centers or specialized outpatient clinics. Lastly, *home healthcare* included RNs who worked with healthcare in patients' residences or special housing with home-like environments, such as nursing homes. The patients who need home healthcare are usually elderly individuals or persons with functional impairments.

Covariates

In the analyses, we adjusted for sex (male/female) and age (categorized as 30 years or less, 31–40 years, 41–50 years, 51–60 years, and 61 years or more). Further, we adjusted for variables associated with experience: years working as an RN (categorized as less than 5 years, 10–15 years, and more than 15 years) and specialist education (yes or no) (Table 1).

Sex is included because previous studies in the field indicate potential differences between women and men, for example, regarding the experience of work motivation (Jungert et al., 2018; Karkkola et al., 2018). Age and work experience theoretically might hold significance both for individuals' perceptions of their ability to receive social support when needed and in relation to work motivation. For example, research indicates that older nurses and those with more years of experience as RNs are more likely to stay at the same workplace longer than their younger colleagues and those with specialized education (de Vries et al., 2023). In the analyses of associations between social support from the immediate manager and co-workers, respectively, and each work motivation measurement, we also adjusted for the workplace (hospital, primary care, or home healthcare) (Table 3 and Table 4). An individual's perception of social support and its relationship with their experience of work motivation might be influenced by their overall life satisfaction. Therefore, we incorporated an additional control variable of RNs' assessment of general life satisfaction in all regression analyses, measured by a single item: 'In general, how satisfied are you with your life?' The responses were rated on an eight-point Likert scale from 'very dissatisfied' to 'very satisfied'.

Analytical strategy

Descriptive statistics were used to depict the sample's characteristics, stratified by healthcare setting. Differences between healthcare settings were assessed through chi-squared analysis, as displayed in Table 1.

We used linear regression to analyze whether levels of reported social support from the immediate manager and co-workers differed between RNs working in hospitals, primary care, and home

TABLE 1 Descriptive statistics for the RN sample stratified by healthcare setting, i.e., hospital, primary care, or home healthcare ($n=2290$).

Variable	Total sample without calibrating weights % (n)	Total sample with calibrating weights % ^a	RN within hospital% ^a	RN within primary care % ^a	RN within home healthcare % ^a	Statistical significance between types of healthcare setting (chi-squared ^a)
Sex						
Male	9.8 (224)	11.2	14.2	4.9	8.0	<0.001
Female	90.2 (2064)	88.8	85.8	95.1	92.0	
Age (years)						
≤30	13.3 (303)	15.0	20.2	4.7	9.0	<0.001
31–40	24.5 (561)	27.0	28.6	24.6	23.5	
41–50	21.5 (492)	22.1	20.4	26.1	23.2	
51–60	23.3 (534)	21.2	18.1	26.5	26.1	
>61	17.4 (398)	14.6	12.7	18.1	18.1	
Years as an RN						
<5	18.8 (430)	20.9	25.6	9.5	19.0	<0.001
5–10	14.9 (342)	16.6	19.1	12.0	13.2	
10–15	15.3 (349)	15.8	14.1	20.7	15.5	
>15	50.8 (1163)	46.5	41.3	57.8	52.3	
Missing	0.2 (4)	0.2				
Specialist education						
No	48.0 (1098)	49.6	53.6	30.1	66.8	<0.001
Yes	51.4 (1177)	49.9	46.4	69.9	33.2	
Missing	0.6 (13)	0.5				

Abbreviations: ns, not statistically significant.

^aCalibrating weights were used.

healthcare. The three categories of hospital, primary care, and home healthcare were analyzed as dummy variables. Social support from immediate manager and co-workers was analyzed separately. First, in a crude model, we analyzed the three categories: hospital (reference), primary care, and home healthcare. Then, we adjusted for sex, age, years as a RN, and specialist nursing education. In the last step, we also adjusted for general life satisfaction (Table 2). We used primary care as the reference to analyze whether the level of social support from the immediate manager and co-workers differed between primary care and home healthcare. The analytical procedure was the same as in the linear regression described above (Table 2).

We used linear regression analysis to estimate the relationship between social support from the immediate manager and co-workers and four outcomes: work engagement, job satisfaction, opportunities to provide high-quality care and satisfaction with the employer (Table 3). Linear regression was used because validated cut-off values were lacking, making it more suitable to use continuous variables. We first analyzed social support from the immediate manager and co-workers separately in crude models. Next, the analysis included social support from both the immediate manager and co-workers, mutually adjusted for each other, and in the next model, we adjusted for sex, age, years as a RN, specialist nursing education, and healthcare setting. In the next step, general life satisfaction was added (Table 3). In the final step of the regression

analysis, we introduced an interaction term to examine whether the associations between social support and work motivation varied between RNs working in hospitals and those working in primary care or home healthcare. By conducting the analysis in multiple steps, transparency about the process is enhanced while also considering potential confounding variables and the broader context of individual well-being.

Binary logistic regressions were used to predict the relationship between social support from the immediate manager and co-workers, respectively, and the outcome intention to remain at the workplace. The analytical procedure aligned with the one in the linear regression described above (Table 4).

In all our analyses, we applied weights to mitigate non-response errors. These calibrating weights were computed by the method outlined by Statistics Sweden, as described by Särndal and Lundström (2005). The data were processed using SPSS version 28.

Ethical considerations

We used data from the survey Longitudinal Occupational Health Survey in Healthcare Sweden, which is administered by Statistics Sweden and Karolinska Institutet. The data collection (no 2022-00310-02) and this specific study (no 2022-03480-01) have been

TABLE 2 Association between working in a hospital, primary care, or home healthcare and level of reported social support from the immediate manager ($n=2189$) and co-workers ($n=2245$), respectively. Linear regression analysis using calibrating weights.

	Crude models		Model 1		Model 2	
	<i>b</i> (SE)	CI 95%	<i>b</i> (SE)	CI 95%	<i>b</i> (SE)	CI 95%
Social support from the immediate manager						
Primary care ¹ (ref hospital)	0.22 (0.06)**	0.10; 0.33	0.21 (0.06)**	0.09; 0.34	0.20 (0.06)**	0.08; 0.32
Home healthcare ¹ (ref hospital)	ns.		ns.		ns.	
Home healthcare ² (ref primary care)	-0.27 (0.08)*	-0.44; -0.10	-0.27 (0.09)*	-0.44; -0.10	-0.26 (0.09)*	-0.43; -0.10
R^2 adjusted ^{1,2}	0.01		0.01		0.05	
Social support from co-workers						
Primary care ¹ (ref hospital)	ns.		ns.		ns.	
Home healthcare ¹ (ref hospital)	-0.12 (0.04)*	-0.21; -0.04	-0.12 (0.04)	-0.21; -0.03	-0.12 (0.04)**	-0.21; -0.04
Home healthcare ² (ref primary care)	-0.16 (0.05)*	-0.25; -0.06	-0.16 (0.05)*	-0.26; -0.06	-0.15 (0.05)*	-0.25; -0.05
R^2 adjusted ^{1,2}	0.004		0.01		0.04	

Note. Beta coefficient (*b*). std. Error (SE) in parenthesis and confidence interval (CI) 95%.

Abbreviation: ns, not statistically significant.

* $p < 0.01$. ** $p < 0.001$.

Crude models: ¹=hospital (ref), primary care, and home healthcare. ²=primary care (ref), home health care, and hospital (data not shown).

Model 1: Crude model + sex, age, years as a RN, specialist nursing education as control variables.

Model 2: Model 1 + general life satisfaction.

approved by the Swedish Ethical Review Authority. Individual information from various data sources, such as survey and administrative records, was connected using pseudonymized individual identifiers, with the key being managed by Statistics Sweden. Thus, individual participants' responses cannot be identified in the results generated.

RESULTS

Demographics of RNs

The study focused on RNs in Sweden who had been employed and worked clinically as RNs in a hospital, primary care setting, or home healthcare within the preceding year. The total sample size was 2290. Table 1 presents descriptive statistics stratified by healthcare setting.

Experience of social support in different healthcare settings

RNs in primary care reported somewhat more often getting social support from their immediate manager than those in hospitals and home healthcare. Furthermore, RNs in home healthcare reported somewhat less often getting social support from co-workers than RNs in hospital and primary care (Table 2).

Associations between social support and work motivation

Work engagement

A statistically significant positive association was found between work engagement and social support from the immediate manager (beta coefficient [*b*]=0.08, confidence interval [CI] 95%=0.05; 0.10) and co-workers ($b=0.12$, CI 95%=0.08; 0.16), respectively (Table 3). The results showed a significant interaction term indicating a somewhat weaker association between social support from co-workers and work engagement for RNs in home healthcare compared with RNs in hospitals ($b=-0.15$, CI 95%=-0.26; -0.04).

Job satisfaction

There were positive associations between job satisfaction and social support from the immediate manager ($b=0.24$, CI 95%=0.21; 0.27) and co-workers ($b=0.22$, CI 95%=0.16; 0.28), respectively (Table 3). The interaction terms between social support from the immediate manager and workplace and between support from co-workers and the workplace were significant, except for co-worker support for RNs in home healthcare in relation to hospitals. Results indicate that support plays a more important role in the level of job satisfaction for RNs in primary care than for RNs in hospitals and home healthcare (support immediate manager: hospital vs. primary

TABLE 3 Associations between RNs' experiences of social support from their immediate manager and co-workers (independent variables), respectively, and their experiences of the four dependent variables: work engagement, job satisfaction, opportunities to provide high-quality care, and satisfaction with the employer. Linear regression analyses using calibrating weights (work engagement $n=2168$, job satisfaction $n=2176$, opportunities to provide high-quality care $n=2160$, and satisfaction with the employer $n=2178$).

Social support from	Crude models		Model 1		Model 2		Model 3	
	<i>b</i> (SE)	CI 95%	<i>b</i> (SE)	CI 95%	<i>b</i> (SE)	CI 95%	<i>B</i> (SE)	CI 95%
Work engagement								
Immediate manager	0.14 (0.01)**	0.12; 0.17	0.11 (0.01)**	0.09; 0.14	0.10 (0.01)**	0.08; 0.13	0.08 (0.01)**	0.05; 0.10
Co-workers	0.21 (0.02)**	0.17; 0.25	0.15 (0.02)**	0.10; 0.19	0.16 (0.02)**	0.12; 0.20	0.12 (0.02)**	0.08; 0.16
R^2 adj.	0.05 ^a 0.04 ^b		0.07		0.14		0.21	
Job satisfaction								
Immediate manager	0.34 (0.02)**	0.30; 0.37	0.28 (0.02)**	0.25; 0.32	0.28 (0.02)**	0.24; 0.31	0.24 (0.02)**	0.21; 0.27
Co-workers	0.42 (0.03)**	0.36; 0.48	0.27 (0.03)**	0.21; 0.33	0.28 (0.03)**	0.22; 0.33	0.22 (0.03)**	0.16; 0.28
R^2 adj.	0.15 ^a 0.08 ^b		0.18		0.22		0.28	
Opportunities to provide high-quality care								
Immediate manager	0.22 (0.02)**	0.19; 0.26	0.18 (0.02)**	0.15; 0.22	0.17 (0.02)**	0.14; 0.20	0.15 (0.02)**	0.11; 0.18
Co-workers	0.30 (0.03)**	0.25; 0.36	0.20 (0.03)**	0.14; 0.27	0.22 (0.03)**	0.16; 0.28	0.19 (0.03)**	0.13; 0.24
R^2 adj.	0.07 ^a 0.04 ^b		0.09**		0.20**		0.22	
Satisfaction with the employer								
Immediate manager	0.50 (0.02)**	0.46; 0.54	0.50 (0.02)**	0.45; 0.54	0.49 (0.02)**	0.45; 0.53	0.46 (0.02)**	0.42; 0.50
Co-workers	0.29 (0.04)**	0.22; 0.37	ns.		ns.		ns.	
R^2 adj.	0.23 ^a 0.03 ^b		0.23		0.26		0.28	

Note: Beta coefficient (*b*), std. Error (SE) in parenthesis and confidence interval (CI) 95%.

** $p < 0.001$.

^a R^2 adjusted for social support from the immediate manager.

^b R^2 adjusted for social support from co-workers.

Crude models: Social support from the immediate manager and co-workers were analyzed in separate statistical models.

Model 1: Social support from the immediate manager and co-workers, mutually adjusted for each other.

Model 2: Model 1+ Healthcare setting, sex, age, years as a RN, specialist nursing education as control variables.

Model 3: Model 2+ general life satisfaction.

care $b = -0.11$, CI 95% = $-0.19; -0.04$; Hospital vs. home healthcare $b = -0.12$, CI 95% = $-0.22; -0.02$, support co-worker: primary care vs hospital $b = 0.163$, CI 95% $0.04; 0.29$).

Opportunities to provide high-quality care

Positive associations were also found between opportunities to provide high-quality care and social support from the immediate

manager ($b = 0.15$, CI 95% = $0.11; 0.18$) and co-workers ($b = 0.19$, CI 95% = $0.13; 0.24$), respectively (Table 3). The result from the interaction analysis revealed a stronger association between social support from co-workers and opportunities to provide high-quality care for RNs in primary care than for RNs in hospitals ($b = 0.25$, CI 95% = $0.12; 0.38$). A weaker association was observed between social support from co-workers and opportunities to provide high-quality care for RNs in home healthcare than for RNs in primary care ($b = -0.22$, CI 95% = $-0.39; -0.04$).

TABLE 4 Associations between RNs' experiences of social support and the dependent variable intention to remain at the workplace. Binary logistic regression using calibrating weights. $n = 2166$.

Intention to remain at the workplace								
Social support from	Crude models		Model 1		Model 2		Model 3	
	OR	CI 95%	OR	CI 95%	OR	CI 95%	OR	CI 95%
Immediate manager	2.02**	1.82; 2.25	1.90**	1.70; 2.12	1.94**	1.73; 2.18	1.89**	1.69; 2.13
Co-workers	1.90**	1.61; 2.25	1.38**	1.15; 1.65	1.54**	1.27; 1.86	1.42**	1.17; 1.72

Abbreviations: CI, confidence interval; OR, adjusted odds ratio.

** $p < 0.001$.

Crude models: Social support from immediate manager and co-workers was analyzed in separate statistical models.

Model 1: Social support from the immediate manager and co-workers, mutually adjusted for each other.

Model 2: Model 1+ Healthcare setting, sex, age, years as a RN, specialist nursing education as control variables.

Model 3: Model 2+ general life satisfaction.

Satisfaction with the employer

The association between social support from co-workers and satisfaction with the employer was not statistically significant, but the positive association between social support from the immediate manager ($b = 0.46$, CI 95% = 0.42; 0.50), and satisfaction with the employer was statistically significant (Table 3). The result from the interaction analysis demonstrated a stronger association between social support from co-workers and satisfaction with the employer for RNs in home healthcare than for RNs in hospitals ($b = 0.23$, CI 95% = 0.05; 0.41). Stronger associations were also observed between satisfaction with the employer and social support from the immediate manager ($b = 0.09$, CI 95% = 0.002; 0.18) and co-workers ($b = 0.31$, CI 95% = 0.16; 0.46), respectively, for RNs in primary care than for RNs in hospitals.

As indicated in Table 4, there was a positive association between intention to remain at the workplace and reporting social support from the immediate manager (odds ratio = 1.89, CI 95% = 1.69; 2.13) and co-workers (odds ratio = 1.42, CI 95% = 1.17; 1.72), respectively (Table 4). The model correctly classified 78.8% of cases in the fully adjusted model. No indication of an interaction effect between social support and the healthcare setting in relation to the intention to remain at the workplace was found.

DISCUSSION

Results related to the first research question – whether the levels of reported social support from the immediate manager and co-workers differed between RNs working in different healthcare settings – showed that RNs in primary care reported more social support from their immediate manager than those in hospitals and home healthcare. Moreover, RNs in home healthcare reported lower social support from co-workers than RNs in hospitals and primary care. Regarding associations between social support and work motivation (research question 2), the results showed a relationship between higher social support from both the immediate manager and co-workers and higher levels of all measures of work motivation except satisfaction with the

employer. Satisfaction with the employer was associated with social support from the immediate manager but not from co-workers. The interaction analyses (research question 3) demonstrated stronger associations among RNs in primary care than among RNs in hospitals between social support and job satisfaction, opportunities to provide high-quality care and satisfaction with the employer. Among RNs in home healthcare, social support from co-workers appeared to have a weaker association with work engagement and a stronger association with satisfaction with the employer than among RNs in hospitals. Below, we discuss the results for each outcome.

Associations between social support and work motivation

Work engagement and job satisfaction

Our results showed that work engagement was associated with the perception of receiving support and assistance when needed from one's immediate manager and co-workers. The association was weaker for RNs in home healthcare than those in hospitals. However, work engagement is crucial not only for RNs' work environment but also for patients, as prior research has demonstrated a positive correlation between RNs' work engagement and perceived patient satisfaction and work effectiveness (Keyko et al., 2016).

We also found that higher levels of social support from both the immediate manager and co-workers had a positive association with RNs' job satisfaction. Our results align well with previous research (e.g., Vera et al., 2016) and the JD-R model, where social support is defined as a resource to enhance job satisfaction (Lesener et al., 2020). Given the anticipated expansion of the primary care sector (Janlöv et al., 2023), it is worth noting that a stronger correlation regarding social support from co-workers was seen among RNs in primary care than among RNs in hospitals, as was a stronger correlation regarding support from immediate manager than among RNs in hospitals and home healthcare. The causes of this difference might be interesting to investigate further in future research.

Opportunities to provide high-quality care

Our results revealed a positive association between RNs' perception of the possibilities to get social support from their immediate manager and co-workers when needed and their opportunities to provide high-quality care. Providing high-quality care is a core objective of the healthcare system in order to achieve patient safety (Ball et al., 2018), and the ability to perform meaningful core tasks is crucial for work motivation (Deci et al., 2017). The findings underline the importance of an organizational structure that enables RNs to provide and receive social support in their daily work. This may involve allocating space and time for meetings and facilitating collaborative work when necessary (Ahlstedt et al., 2019). Moreover, our results indicated that RNs' perceptions of social support from co-workers were somewhat more strongly associated with their opportunities to provide high-quality care in primary care than in hospitals. There may be several explanations for this, but none that we can confidently assert based on our study. However, patients seek care from the primary care sector for all types of health conditions (Janlöv et al., 2023). Compared to hospitals, there is limited access to resources, in terms of equipment and specialists, if a patient deteriorates quickly or if an RN encounters other complex situations (Janlöv et al., 2023), which could serve as an explanation.

Satisfaction with the employer and intention to remain at the workplace

Our results indicated a positive association between social support from the immediate manager and RNs' satisfaction with the employer. Additionally, our results suggested a stronger association between social support and satisfaction with the employer among RNs in primary care and home healthcare compared with RNs in hospital settings. This is worth considering, as the demand for more complex care within primary care and home healthcare may rise (Janlöv et al., 2023; WHO, 2022).

We did not find any statistically significant association between social support from co-workers and RNs' satisfaction with the employer. However, the interaction analysis highlighted a stronger association between social support from co-workers and satisfaction with the employer among RNs in primary care and home healthcare compared with RNs in hospitals. It has been revealed in previous research that good relationships with co-workers were considered to be a crucial factor for work motivation among older nurses in home healthcare (Wallin et al., 2022). It is, therefore, worth noting that RNs in home healthcare in our study reported lower social support from co-workers compared with RNs in primary care and hospitals. One reason for this could be that RNs in home healthcare often need to work across multiple locations (Janlöv et al., 2023). This potentially makes it more challenging for immediate managers to create conditions for RNs to provide and receive social support than in hospitals and primary care. To overcome some of these challenges, one way to improve the conditions for social support in home healthcare could be to use more technology, such as virtual meetings as a

complement to physical meetings (Gagné et al., 2022). Regardless of how the work is organized, it is important to have a work environment where it is possible and feels safe to ask for support and help from managers as well as co-workers (Edmondson, 2019).

Another reason to pay attention to social support is that our results indicated an association between social support from the immediate manager and co-workers and RNs' intention to remain at the workplace. This result reinforces the results from previous studies, including RNs and other nurses (e.g., Chen et al., 2016; Eltaybani et al., 2018). Our results underscore the importance of the overall workplace organization being such that immediate managers can be available to support employees as needed. This has also been stressed by Gadolin et al. (2022), who showed that responsive support from superior management, administration, and managerial colleagues creates beneficial conditions for managers to carry out their work, including supporting RNs. Additionally, our result highlighted the significance of an organization where co-workers can both provide social support to each other and receive it.

Strengths and limitations

Considering the study's cross-sectional design, conclusions about causal links between variables cannot be drawn. Furthermore, since both predictor and outcome variables are based on self-reported data, there is a risk of common method bias and inflated associations. To mitigate this risk, we included general life satisfaction as a covariate in our statistical models. Furthermore, a limitation is that we use single items for four measurements of work motivation: job satisfaction, opportunities to provide high-quality care, satisfaction with the employer, and intention to remain at the workplace. A limitation was also that the self-reported data only provided information about RNs' perceptions of social support. An additional limitation is that we cannot make assertions about the specific type of support; however, the source of the support is clear, as we focused on whether an immediate manager or co-workers provided it. This can be viewed as a strength. Furthermore, our sample was limited to Swedish healthcare RNs, which may restrict the generalizability of the results to healthcare organizations in other countries. However, a strength of this study was the use of a large, stratified, and nationally representative sample of nurses in Sweden, enabling comparisons between nurses in different healthcare settings. Another strength was the use of calibrating weights, which reduced the impact of dropouts and enhanced the generalizability of the results to nurses in Sweden.

CONCLUSION

The results support the notion in the JD-R model that social support is an empowering resource in the motivation process (Bakker et al., 2023). Further, they suggest that to keep RNs motivated to remain in the workplace and profession, it is important to create healthcare organizations that allow immediate managers to provide support and assistance to RNs when needed and for RNs and other

co-workers to offer support and help to each other. This may be particularly relevant in home healthcare, where RNs have fewer opportunities to get social support, and given that the aging population will require more complex care to be provided directly in older persons' homes. For future research, it is suggested that studies be conducted to establish causal relationships between social support and RNs' work motivation and willingness to remain in the workplace, such as intervention studies and longitudinal observational research.

CLINICAL RESOURCES

Motivation theory, Self-determination theory selfdeterminationtheory.org – An approach to human motivation & personality.

Sweden health system review 2023 [Sweden: health system review 2023 \(who.int\)](https://www.who.int/news-room/fact-sheets/detail/sweden-health-system-review-2023).

FUNDING INFORMATION

No funding sources.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

Due to the sensitive nature of the questions asked in this study and the link to register-based data, survey respondents were assured raw data would remain confidential and would not be shared.

ORCID

Carina Ahlstedt  <https://orcid.org/0000-0001-5618-9664>

REFERENCES

- Adriaenssens, J., De Gucht, V., & Maes, S. (2015). Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. *International Journal of Nursing Studies*, 52(2), 649–661. <https://doi.org/10.1016/j.ijnurstu.2014.11.004>
- Ahlstedt, C., Eriksson Lindvall, C., Holmström, I. K., & Muntlin Athlin, Å. (2019). What makes registered nurses remain in work? An ethnographic study. *International Journal of Nursing Studies*, 89, 32–38. <https://doi.org/10.1016/j.ijnurstu.2018.09.008>
- Amabile, T. M., & Kramer, S. J. (2007). Inner work life [article]. *Harvard Business Review*, 85(5), 72–83. <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=24635708&site=ehost-live>
- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285. <https://doi.org/10.1037/ocp0000056>
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. (2023). Job demands–resources theory: Ten years later. *Annual Review of Organizational Psychology and Organizational Behavior*, 10(1), 25–53. <https://doi.org/10.1146/annurev-orgpsych-120920-053933>
- Bakker, A. B., & Xanthopoulou, D. (2013). Creativity and charisma among female leaders: The role of resources and work engagement. *International Journal of Human Resource Management*, 24(14), 2760–2779. <https://doi.org/10.1080/09585192.2012.751438>
- Ball, J. E., Bruyneel, L., Aiken, L. H., Sermeus, W., Sloane, D. M., Rafferty, A. M., Lindqvist, R., Tishelman, C., Griffiths, P., & Consortium, R. N. C. (2018). Post-operative mortality, missed care and nurse staffing in nine countries: A cross-sectional study. *International Journal of Nursing Studies*, 78, 10–15. <https://doi.org/10.1016/j.ijnurstu.2017.08.004>
- Berthelsen, H., Westerlund, H., Bergström, G., & Burr, H. (2020). Validation of the Copenhagen psychosocial questionnaire version III and establishment of benchmarks for psychosocial risk Management in Sweden. *International Journal of Environmental Research and Public Health*, 17(9), 3179. <https://doi.org/10.3390/ijerph17093179>
- Blanco-Donoso, L. M., Moreno-Jiménez, B., Pereira, G., & Garrosa, E. (2019). Effects of Co-worker and supervisor support on Nurses' energy and motivation through role ambiguity and psychological flexibility. *The Spanish Journal of Psychology*, 22, E25. <https://doi.org/10.1017/sjp.2019.10>
- Breaugh, J., Ritz, A., & Alfes, K. (2018). Work motivation and public service motivation: Disentangling varieties of motivation and job satisfaction. *Public Management Review*, 20(10), 1423–1443. <https://doi.org/10.1080/14719037.2017.1400580>
- Burr, H., Berthelsen, H., Moncada, S., Nübling, M., Dupret, E., Demiral, Y., Oudyk, J., Kristensen, T. S., Llorens, C., Navarro, A., Lincke, H.-J., Bocéréan, C., Sahan, C., Smith, P., & Pohrt, A. (2019). The third version of the Copenhagen psychosocial questionnaire. *Safety and Health at Work*, 10(4), 482–503. <https://doi.org/10.1016/j.shaw.2019.10.002>
- Chen, M.-F., Ho, C.-H., Lin, C.-F., Chung, M.-H., Chao, W.-C., Chou, H.-L., & Li, C.-K. (2016). Organisation-based self-esteem mediates the effects of social support and job satisfaction on intention to stay in nurses. *Journal of Nursing Management*, 24(1), 88–96. <https://doi.org/10.1111/jonm.12276>
- Dall'Orta, C., Maruotti, A., & Griffiths, P. (2020). Temporary staffing and patient death in acute care hospitals: A retrospective longitudinal study. *Journal of Nursing Scholarship*, 52(2), 210–216. <https://doi.org/10.1111/jnu.12537>
- de Lange, A. H., De Witte, H., & Netelaers, G. (2008). Should I stay or should I go? Examining longitudinal relations among job resources and work engagement for stayers versus movers. *Work and stress*, 22(3), 201–223. <https://doi.org/10.1080/02678370802390132>
- de Vries, N., Boone, A., Godderis, L., Bouman, J., Szemik, S., Matranga, D., & de Winter, P. (2023). The race to retain healthcare workers: A systematic review on factors that impact retention of nurses and physicians in hospitals. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 60, 1–21. <https://doi.org/10.1177/004695802>
- Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, 4(1), 19–43. <https://doi.org/10.1146/annurev-orgpsych-032516-113108>
- Dill, J., Erickson, R. J., & Diefendorff, J. M. (2016). Motivation in caring labor: Implications for the well-being and employment outcomes of nurses. *Social Science & Medicine*, 167, 99–106. <https://doi.org/10.1016/j.socscimed.2016.07.028>
- Edmondson, A. C. (2019). *The fearless organization creating psychological safety in the workplace for learning, innovation, and growth*. Wiley.
- Eltaybani, S., Noguchi-Watanabe, M., Igarashi, A., Saito, Y., & Yamamoto-Mitani, N. (2018). Factors related to intention to stay in the current workplace among long-term care nurses: A nationwide survey. *International Journal of Nursing Studies*, 80, 118–127. <https://doi.org/10.1016/j.ijnurstu.2018.01.008>
- Gadolin, C., Larsman, P., Skyvell Nilsson, M., Pousette, A., & Törner, M. (2022). How do healthcare unit managers promote nurses' perceived organizational support, and which working conditions enable them to do so? A mixed methods approach. *Scandinavian Journal of Psychology*, 63(6), 648–657. <https://doi.org/10.1111/sjop.12851>
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331–362. <https://doi.org/10.1002/job.322>
- Gagné, M., Parker, S. K., Griffin, M. A., Dunlop, P. D., Knight, C., Klonek, F. E., & Parent-Rocheleau, X. (2022). Understanding and shaping the future of work with self-determination theory. *Nature Reviews*

- Psychology, 1(7), 378–392. <https://doi.org/10.1038/s44159-022-00056-w>
- Hanson, L., Leineweber, C., Persson, V., Hyde, M., Theorell, T., & Westerlund, H. (2018). Cohort profile: the Swedish longitudinal occupational survey of health (SLOSH). *International journal of epidemiology*, 47(3), 1014. <https://doi.org/10.1093/ije/dyy090>
- Hagqvist, E., Ekberg, K., Lidwall, U., Nyberg, A., Landstad, B. J., Wilczek, A., Bååthe, F., & Sjöström, M. (2022). The Swedish HealthPhys study: Study description and prevalence of clinical burnout and major depression among physicians. *Chronic Stress (Thousand Oaks, Calif.)*, 6, 1–8. <https://doi.org/10.1177/24705470221083866>
- Hu, Q., Schaufeli, W. B., & Taris, T. W. (2017). How are changes in exposure to job demands and job resources related to burnout and engagement? A longitudinal study among Chinese nurses and police officers. *Stress and Health*, 33(5), 631–644. <https://doi.org/10.1002/smi.2750>
- Janlöv, N., Blume, S., Glenngård, A., Hanspers, K., Anell, A., & Merkur, S. (2023). Health Systems in Transition. Sweden: *Health System Review*, 25(3), i–198.
- Jolly, P. M., Kong, D. T., & Kim, K. Y. (2021). Social support at work: An integrative review. *Journal of Organizational Behavior*, 42(2), 229–251. <https://doi.org/10.1002/job.2485>
- Jungert, T., Van den Broeck, A., Schreurs, B., & Osterman, U. (2018). How colleagues can support each Other's needs and motivation: An intervention on employee work motivation. *Applied Psychology*, 67(1), 3–29. <https://doi.org/10.1111/apps.12110>
- Karkkola, P., Kuittinen, M., Hintsala, T., Rynänen, J., & Simonen, A. (2018). Each one counts: Basic needs mediating the association between social support and vitality at work. *Scandinavian Journal of Work and Organizational Psychology*, 3(1): 6:1-11. <https://doi.org/10.16993/sjwop.54>
- Keyko, K., Cummings, G. G., Yonge, O., & Wong, C. A. (2016). Work engagement in professional nursing practice: A systematic review. *International Journal of Nursing Studies*, 61, 142–164. <https://doi.org/10.1016/j.ijnurstu.2016.06.003>
- Kjellström, S., Avby, G., Areskoug-Josefsson, K., Andersson Gäre, B., & Andersson Bäck, M. (2017). Work motivation among healthcare professionals: A study of well-functioning primary healthcare centers in Sweden. *Journal of Health Organization and Management*, 31(4), 487–502. <https://doi.org/10.1108/JHOM-04-2017-0074>
- Lesener, T., Gusy, B., Jochmann, A., & Wolter, C. (2020). The drivers of work engagement: A meta-analytic review of longitudinal evidence. *Work and Stress*, 34(3), 259–278. <https://doi.org/10.1080/02678373.2019.1686440>
- Masum, A. K. M., Azad, M. A. K., Hoque, K. E., Beh, L.-S., Wanke, P., & Arslan, Ö. (2016). Job satisfaction and intention to quit: An empirical analysis of nurses in Turkey. *PeerJ*, 4, e1896. <https://doi.org/10.7717/peerj.1896>
- Najafi Ghezljeh, T., Gharasoflo, S., & Haghani, S. (2021). The relationship between missed nursing care and teamwork in emergency nurses: A predictive correlational study. *Nursing Practice Today*, 8(2), 103–111. <https://doi.org/10.18502/npt.v8i2.5121>
- Orgambidez, A., & Almeida, H. (2020). Social support, role clarity and job satisfaction: A successful combination for nurses. *International Nursing Review*, 67(3), 380–386. <https://doi.org/10.1111/inr.12591>
- Othman, N., & Nasurdin, A. M. (2013). Social support and work engagement: A study of Malaysian nurses. *Journal of Nursing Management*, 21(8), 1083–1090. <https://doi.org/10.1111/j.1365-2834.2012.01448.x>
- Rodwell, J., & Munro, L. (2013). Well-being, satisfaction and commitment: The substitutable nature of resources for maternity hospital nurses. *Journal of Advanced Nursing*, 69(10), 2218–2228. <https://doi.org/10.1111/jan.12096>
- Rosen, M. A., DiazGranados, D., Dietz, A. S., Benishek, L. E., Thompson, D., Pronovost, P. J., & Weaver, S. J. (2018). Teamwork in healthcare: Key discoveries enabling safer, high-quality care. *The American Psychologist*, 73(4), 433–450. <https://doi.org/10.1037/amp0000298>
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.
- Särndal, C.-E., & Lundström, S. (2005). *Estimation in surveys with nonresponse*. John Wiley.
- Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., & De Witte, H. (2019). An ultra-short measure for work engagement: The UWES-3 validation across five countries. *European Journal of Psychological Assessment: Official Organ of the European Association of Psychological Assessment*, 35(4), 577–591. <https://doi.org/10.1027/1015-5759/a000430>
- Seo, Y., Ko, J., & Price, J. L. (2004). The determinants of job satisfaction among hospital nurses: A model estimation in Korea. *International Journal of Nursing Studies*, 41(4), 437–446. <https://doi.org/10.1016/j.ijnurstu.2003.11.003>
- Simpson, K., & Simpson, R. (2019). What do we know about our agency nurse population? A Scoping Review. *Nursing Forum (Hillsdale)*, 54(4), 492–498. <https://doi.org/10.1111/nuf.12361>
- Toode, K., Routasalo, P., & Suominen, T. (2011). Work motivation of nurses: A literature review. *International Journal of Nursing Studies*, 48(2), 246–257. <https://doi.org/10.1016/j.ijnurstu.2010.09.013>
- Vera, M., Martinez, I. M., Lorente, L., & Chambel, M. J. (2016). The role of Co-worker and supervisor support in the relationship between job autonomy and work engagement among Portuguese nurses: A multilevel study. *Social Indicators Research*, 126(3), 1143–1156. <https://doi.org/10.1007/s11205-015-0931-8>
- Wallin, S., Fjellman-Wiklund, A., & Fagerström, L. (2022). Work motivation and occupational self-efficacy belief to continue working among ageing home care nurses: A mixed methods study. *BMC Nursing*, 21(1), 31. <https://doi.org/10.1186/s12912-021-00780-3>
- WHO. (2021). *The WHO global strategic directions for nursing and midwifery (2021–2025)* (Vol. 40). Geneva World Health Organization.
- WHO. (2022). Health and care workforce in Europe: time to act. (SBN: 978-92-890-5833-9).
- Wu, F., Ren, Z., Wang, Q., He, M., Xiong, W., Ma, G., Fan, X., Guo, X., Liu, H., & Zhang, X. (2021). The relationship between job stress and job burnout: The mediating effects of perceived social support and job satisfaction. *Psychology, Health & Medicine*, 26(2), 204–211. <https://doi.org/10.1080/13548506.2020.1778750>

How to cite this article: Ahlstedt, C., Moberg, L., Brulin, E. & Nyberg, A. (2024). Social support from manager and co-workers in relation to registered nurses' work motivation in three healthcare settings: A cross-sectional study of a Swedish national sample. *Journal of Nursing Scholarship*, 56, 790–801. <https://doi.org/10.1111/jnu.12995>

Nursing Continuing Professional Development

Journal of Nursing Scholarship is pleased to offer readers the opportunity to earn nursing continuing professional development (NCPD) contact hours for select articles. Sigma Theta Tau International Honor Society of Nursing (Sigma) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.