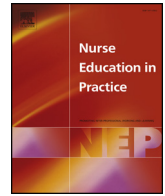




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Original research

The associations between the final clinical practicum elements and the transition experience of early career nurses: A cross-sectional study

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ABSTRACT

The final clinical practicum before graduation prepares nursing students for the transition from a student to a nurse, but the essential elements of the final clinical practicum that enhance successful transition are not known. We examined the associations of five elements of the final clinical practicum with four indicators of the transition experience in new nurses. We also tested whether psychosocial work characteristics modified these associations. The study sample comprised 712 Finnish nurses who had graduated within the previous two years before the data collection (response rate: 18%). The data were collected using a questionnaire survey in 2018. The elements of the final clinical practicum included (1) the systematicness of the practicum, (2) teacher involvement, (3) the quality of supervision, (4) preparing for the demands of a nurse's work and (5) being part of a professional team. Our results, based on linear regression analysis, showed that all the elements except the quality of supervision were associated with indicators of the transition experience (beta range: from 0.08 to 0.35). Job demands modified several of these associations. The findings of this study highlight the potential for well-implemented final clinical practicums to promote a smoother transition for new nurses.

1. Introduction

How to tackle the challenging transition from nursing student to fully qualified registered nurse is an old, yet still relevant, question that has gained considerable research interest during recent decades (Clare and van Loon, 2003; Edwards et al., 2015; Kramer, 1974; Rush et al., 2019). Transition is characterized as a multiphased process where new nurses go through changes in emotional, physical, socio-developmental and intellectual levels (Duchscher, 2009). At the start of their career new nurses encounter multiple work-related stressors, such as a lack of professional competence, high work demands, heavy workloads and a lack of support (Halpin et al., 2017; Labrague & McEnroe-Petitte, 2018). These partly unexpected psychosocial work characteristics and doubt of one's own knowledge and skills may complicate the transition (Halpin et al., 2017; Regan et al., 2017) and increase the risk of emotional exhaustion (Laschinger et al., 2019; Lavoie-Tremblay et al., 2008), poor sleep (Hasson and Gustavsson, 2010; Zamanzadeh et al., 2015), role ambiguity and discrepancy (Tingleff and Gildberg, 2014; Walker et al., 2017), and burnout (Rudman and Gustavsson, 2011). Currently, the need to promote new nurses' successful transition into

the health care workforce is increasingly evident due to the predicted worsening of the global nursing shortage (World Health Organisation, 2016; 2013). For example in the European Union area, approximately 120 000 new registered nurses enter the workforce annually (European Union statistics, 2016). However, simultaneously considerable amount of these new professionals (in some countries from 13 to 30 percent) have reported strong intentions to leave nursing (Leineweber et al., 2016; Rudman et al., 2014).

The critical importance of pre-graduate preparation that would help new nurses to adapt to the escalating expectations of professional practice is well acknowledged (Duchscher, 2009; Dwyer and Hunter Revell, 2016; Järvinen et al., 2018). The final clinical practicum before graduation, also called the senior practicum, is suggested to be a key factor in facilitating students' sufficient readiness for transition (Casey et al., 2011; Kaihlanen et al., 2019b). Due to the chronic shortage of health care staff, new nurses are often expected to "hit the ground running". Therefore, near the completion of the nursing programme there should be an emphasis on ensuring that students gain experiences of nursing realities, especially in terms of managing the workload (Halpin et al., 2017; Wolff et al., 2010) and demanding patient care,

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Table 1
Variables and instruments used in the study.

Scale/subscales	Instrument/reference(s)	Items (examples of items)	Scale range	α
Final clinical practicum elements:				
Systematicness of practicum	"FCP experience" instrument (Kaihlanen et al., 2019)	5 (I had concrete learning objectives) 3 (I had support from the teacher when needed)	1 = implemented very poorly-5 = implemented very well	.81 .85
Teacher involvement		6 (My supervisor had the skills to guide a graduating student)		.95
Quality of supervision		6 (I had possibilities to be responsible and work independently)		.83
Preparing for demands of nurse's work		4 (I felt to be a member of the work community)		.88
Being part of professional team				
Transition indicators:				
Psychological distress (emotional)	General Health Questionnaire (Goldberg et al., 1997; Graetz, 1991)	4 (Have you recently felt constantly under strain)	1 = not at all-4 = much more than usually	.87
Sleep problems (physical)	Sleep problems (Jenkins et al., 1988; Lallukka et al., 2011).	4 (How often during the past weeks have you e.g. Woke up, feeling tired and worn out after the usual amount of sleep)	1 = not at all-6 = every night	.84
Role conflict/ambiguity (socio-developmental)	Role conflict and Role ambiguity (Rizzo et al., 1970; Khan, 2014)	5 (I have to buck a rule or policy in order to carry out an assignment) and 3 (I know exactly what is expected of me)	1 = totally disagree-5 = totally agree	*.81
Perception of transition and educational preparation (intellectual)	*combined conflict/ambiguity Self-developed	3 (My transition from student to nurse was easy; Education prepared me well for nurse's work; My professional competence was good at the time of graduation)	1 = totally disagree- 5 = totally agree	.78
Work Characteristics:				
Job demands (time pressure)	Nurse Stress Index (Harris, 1989).	3 (How often e.g. Constant rush and pressure due to uncompleted work had disturbed, worried, or stressed you during the last two months)	1 = hardly ever-5 = very often or continuously	.91
Job control (decision latitude)	Job Content Questionnaire (Karasek et al., 1998; Aalto et al., 2014)	3 (e.g. My job allows me to make a lot of decisions on my own)	1 = totally disagree- 5 = totally agree	.62

which are shown to be major stressors for new nurses (Wu et al., 2012). Final clinical practicums should also include versatile opportunities for students to develop the needed knowledge and skills, experiences of varietal work-life challenges (Hartigan-Rogers et al., 2007; Kaihlanen et al., 2019a), the possibility to feel belongingness to a team (Levett-Jones and Lathlean, 2008; Newton et al., 2011) and adequate support and mentoring (Kaihlanen et al., 2013; Paliadelis and Wood, 2016).

Not just the pre-graduate clinical experiences but also the early-career psychosocial work environment play a role in the positive transition process from a student to a full member of a work organisation (Phillips et al., 2013; Laschinger et al., 2012). The most established model explaining the associations between psychosocial work characteristics and the employee outcomes is the Job Demand–Control Model by Karasek (1979). The model predicts possible adverse well-being and health outcomes at work as the result of the joint effects of high job demands (e.g. workload/time pressure) and low job control (e.g. skill discretion and decision authority). Conversely, if the job is highly demanding but the employee experiences a high level of job control, the work is not experienced as stressful and creates a better base for professional growth and facing challenges (known as the Active Job hypothesis) (Karasek and Theorell, 1990; Karasek, 1979). The demand–control theory has been utilised in the nursing context, for example, by Laschinger (2001) who found out that nurses whose high work demands were offset by a high level of control were more likely to have high confidence in their job-performance abilities and experienced greater opportunities to develop in their work (Laschinger, 2001). Also, a study of Svavarsdottir et al. (2018) showed that nurses who were working in high-strain jobs (with high demands and low control) perceived themselves as less effective and skilled than nurses whose job demands were combined with high job control (Svavarsdottir et al., 2018). Moreover, high strain jobs have been associated with greater turnover intentions among nurses (Chiu et al., 2009). Based on the above-mentioned findings, it is reasonable to assume that the level of job demand and job control may greatly affect newly graduated nurses' transition period.

Despite the body of work in respect of final clinical practicums of graduating nursing students (e.g. Casey et al., 2011; Kaihlanen et al., 2018, 2019a) there is a lack of evidence about whether certain elements in the practicum actually affect the post-graduate transition experience. The aim of the present study was to investigate whether specific final clinical practicum elements are associated with the transition of nurses during their first years in practice. Additionally – given the potential contribution of high job strain in transitional challenges – we investigated whether the possible associations between the practicum elements and transition are modified by post-graduate psychosocial work characteristics (job demands and job control).

2. Methods

2.1. Design and setting

This was a cross-sectional survey study conducted in Finland and reflects one part of a larger Competent workforce for the future (COPE) - study. In Finland the nursing education is arranged in the universities of applied sciences. The nursing programme (Bachelor of Health Care) consists of 210 study credits (taking 3.5 years), from which 90 credits are accomplished in clinical learning environments as required in the EU legislation (European Commission, 2005/36/EC). Because of the autonomy of universities of applied sciences, there are no common requirements or guidelines (e.g. about the structure or content) regarding final clinical practicums. Thus, students' final clinical practicums may vary significantly. Typically, the length of this practicum is between four and 10 weeks, it is performed during the final semester of studies and the supervision of a student is designated to one to two registered nurses in the unit. No final examination is required for licensure and most students graduate soon after finishing their final

clinical practicums.

2.2. Participants and data collection

The participants of this study were all the registered nurses who had graduated within the last two years prior to the study (between 9/2016 and 6/2018). The total sample ($n = 6797$) was from the Finnish Central Register of Valvira (National Supervisory Authority for Welfare and Health). We obtained email addresses for 3942 nurses from the register of the Union of Health and Social Care Professionals in Finland (Tehy). An invitation letter with a link to the electronic questionnaire was sent to these nurses. The data collection, with three email reminders, was conducted between 1.11. and 21.12.2018. Altogether, 712 nurses responded to the questionnaire, the response rate being 18%.

2.3. Instruments

The survey consisted of several instruments (Table 1). The *Final clinical practicum elements* were measured with a “Final clinical practicum (FCP) experience” instrument that aims to measure how well different transition facilitating elements have been implemented in the final clinical practicum. The higher the score, the better the nurses' FCP experience. The development and psychometric testing of the FCP experience instrument have been described in detail in Kaihlanen et al. (2019b). The FCP experience instrument includes five subscales: (1) The systematicness of practicum (evaluating how systematically the practicum was planned and proceeded), (2) teacher involvement, (3) the quality of supervision, (4) preparing for the demands of a nurse's work and (5) being part of a professional team. The instrument has shown good content and structural validity (Kaihlanen et al., 2019b).

Since we did not find any existing instrument to measure *the transition experience*, we utilised the Transition Conceptual Framework of Duchscher (2009) in defining the central domains. The framework describes the emotional, physical, socio-developmental and intellectual levels of the transition experience, and we chose four individual scales to demonstrate these domains: psychological distress, sleep problems, role conflict and ambiguity, and the perception of transition and educational preparation, respectively. The selection of the scales was based on the Duchscher (2009) description about the four transition domains, as well as on other previous literature regarding transition-related issues (e.g. Hasson and Gustavsson, 2010; Kalkman, 2018; Watson et al., 2009).

The work characteristics were defined based on the Job Demand–Control Model (Karasek, 1979), which is the most established and widely tested model on the association between work related psychosocial factors and health (e.g. Kivimäki et al., 2006; Kivimäki et al., 2012).

The *potential confounders* included were age, gender, a previous lower health care degree (as a licensed practical nurse), work experience gained during studies, the work environment of the final clinical practicum, familiarity of the placement from previous clinical practicums, the length of the practicum, whether the supervisor remained the same during the practicum, the current work environment, the length of time in the current employment, the work schedule and whether the current work unit was the same as the final clinical practicum placement.

2.4. Statistical analysis

As preliminary analyses, we examined whether the potential confounders could technically act as confounders in the association between the five final clinical practicum elements (The systematicness of practicum; Teacher involvement; The quality of supervision; Preparing for the demands of a nurse's work; Being part of a professional team) and the four indicators of transition experience (Psychological distress; Sleep problems; Role conflict/ambiguity; Perception of transition and

educational preparation) using multivariate ANOVA. This was done by including all the potential confounders and practicum elements in the same model to predict each transition indicator. Those potential confounders that showed significant association with any of the transition indicators were included in the main analyses. These were: gender, work experience gained during studies, the current work environment and the work schedule.

The associations of the practicum elements with the four transition indicators were examined using linear regression analysis in three steps. In step one, each transition indicator was regressed on each practicum element separately. In step two, each transition indicator was regressed on all practicum elements. In step three, the models estimated in step two were adjusted for job demands, job control, and the four potential confounders identified in the preliminary analysis. Cases with missing values were dropped from the analysis.

The potential interaction effects between the practicum elements and work characteristics (job demands and job control) were also examined with linear regressions. Job demands and job control were re-coded into dichotomous variables for the analysis by using a median split; values below the median were labelled as *low job demands/low job control*, and values above the median as *high job demands/high job control*.

Analyses were conducted with IBM SPSS Statistics 25 and R (3.5. 0) statistical software.

2.5. Ethical considerations

This study was carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for research involving human subjects (World Medical Association, 2001). The ethics committee of the National Institute for Health and Welfare in Finland provided the ethical approval for this study (THL/253/6.02.01/2018). In the invitation letter respondents were informed about the purpose of the study, the voluntariness of participation and informed that the data would only be handled by the members of the research group and then without any identifying information. Submitting the questionnaire was seen as consent to participate in the study.

3. Results

3.1. Sample characteristics

Close to 90% of the nurses were female, and their age varied between 21 and 61 years old, the average being 31.1 years old. Over 38% of the nurses had a previous health care degree as licensed practical nurses (a Vocational Qualification in Social and Health Care, 180 credits). Most commonly nurses had gained 6–11 months of work experience (external to their studies) during their education, the length of their final clinical practicum was 10 weeks and the practicum placement was in specialised health care. Specialised health care was also the most common current work environment. The length of current employment was most often between six and 11 months and every fourth nurse worked in her or his former final clinical practicum placement. The majority of the nurses worked in three shifts. The characteristics of the participants and the descriptive statistics of the study variables are presented in Table 2 and Table 3.

3.2. Associations between final clinical practicum elements and transition indicators

The results from the unadjusted (univariable) models and adjusted (multivariable) models are presented in Table 4. In the adjusted models, the systematicness of the practicum was associated with all the transition indicators: nurses with higher scores in systematicness had less psychological distress, less sleep problems, less role conflict/ambiguity and more positive perception of transition and educational preparation.

Table 2
Characteristics of the participants.

Variable	n	%		
Gender ^a	Female	627	88.9	
	Male	76	11.1	
Licensed practical nurse	Yes	274	38.5	
	No	437	61.5	
Work schedule ^a	Day job	155	22.1	
	Two shifts	113	16.1	
	Three shifts	389	55.4	
	Other	45	6.4	
The length of current employment	1–5 months	148	21.4	
	6–11 months	248	35.9	
	1–2 years	243	35.2	
	3–5 years	21	3	
	6–10 years	17	2.5	
	11–15 years	7	1	
	Over 15 years	6	0.9	
Current work environment ^a	Emergency care	107	15.4	
	Psychiatric and substance abuse services	94	13.5	
	Specialised health care	265	38.1	
	Elderly care	161	23.1	
	Reception work	36	5.2	
	Other	33	4.7	
Work experience during studies ^a	No experience	32	4.5	
	1–5 months	143	20.2	
	6–11 months	215	30.3	
	1–1.5 years	124	17.5	
	1.5–2 years	74	10.4	
	Over 2 years	121	17.1	
Practicum placement	Emergency care	161	22.8	
	Psychiatric and substance abuse services	95	13.4	
	Specialised health care	342	48.4	
	Elderly care	50	7.1	
	Reception work	29	4.1	
	Other	30	4.2	
The same work unit as that of her/his practicum placement	Yes	159	22.5	
	No	547	77.5	
Length of the practicum (weeks)	3	10	1.4	
	4	67	9.4	
	5	93	13.1	
	6	135	19.0	
	7	82	11.6	
	8	69	9.7	
	9	21	3.0	
	10	184	26.0	
	11	19	2.7	
	12	29	4.1	
	A familiar practicum placement	Yes	345	48.8
		No	362	51.2
Having the same supervisor during the practicum	Yes	637	90.1	
	No	70	9.9	

^a Variables controlled in the analysis.

Higher scores in teacher's involvement and in preparing for the demands of a nurse's work in the practicum were associated with more positive perception of transition and educational preparation. Higher score in being part of professional team in the practicum was associated with less sleep problems and more positive perception of transition and educational preparation. The quality of supervision had no statistically significant associations with any of the transition indicators.

3.3. Interaction effects between final clinical practicum elements and work characteristics (job demands and job control)

The final clinical practicum elements and job demands had several interaction effects on the transition indicators. There were significant interactions between the systematicness of the practicum and job demands ($\beta = 0.19, p = 0.048$), teacher involvement and job demands ($\beta = 0.13, p = 0.013$) and being part of a professional team and job demands ($\beta = 0.15, p = 0.037$) for the psychological distress. The systematicness of the practicum and job demands ($\beta = 0.22, p = 0.034$), preparing for the demands of a nurse's work and job demands ($\beta = 0.25, p = 0.015$) and being part of a professional team and job demands ($\beta = 0.26, p = 0.015$) had significant interaction for the perception of transition and educational preparation. Significant interaction was also found between teacher involvement and job demands for the sleep problems. ($\beta = 0.23, p = 0.004$).

Nurses with better teacher involvement in the final clinical practicum who currently had low job demands experienced less psychological distress and less sleep problems compared to nurses with high job demands. Higher scores for systematicness and for being part of the professional team in the practicum were associated with less psychological distress in both the high-job-demands and low-job-demands groups, but the effects were stronger in the low-job-demands group. Similarly, higher scores for systematicness, for preparing for the demands of a nurse's work and for being part of a professional team in the practicum were all associated with more positive perception of transition and educational preparation in both job-demands groups, but the effect was stronger in the low-job-demands group (Fig. 1.).

4. Discussion

This study aimed to investigate whether specific elements previously identified as essential in the final clinical practicum of nursing education were associated with the transition experience of early career nurses and whether the possible associations were modified by their psychosocial work characteristics (job demands and job control). Firstly, we found several associations between the practicum elements and the variables demonstrating the four transition domains. The results of this study indicate that having a good final clinical practicum experience can be beneficial for new nurses and ease their transition process. Secondly, we found several interactions between the final clinical practicum elements and job demands. Based on the results, it seems that among those nurses who end up working in health care

Table 3
Descriptive statistics of the study variables.

Variable	Scale	Mean	SD.	
Final clinical practicum elements	The systematicness of the practicum	1–5	4.42	0.59
	Teacher involvement	1–5	3.48	1.05
	The quality of supervision	1–5	4.18	0.92
	Preparing for the demands of a nurse's work	1–5	4.28	0.62
	Being part of a professional team	1–5	4.19	0.79
Transition indicators	Emotional (Psychological distress)	1–4	2.09	0.77
	Physical (Sleeping problems)	1–6	2.59	1.11
	Socio-developmental (Role conflict/ambiguity)	1–5	2.38	0.70
	Intellectual (Perception of transition/educational preparation)	1–5	3.63	0.90
Work characteristics	Job control	1–5	3.67	1.12
	Job demands	1–5	3.70	0.80

Table 4

The associations between final clinical practicum elements and the transition indicators (1. psychological distress, 2. sleep problems, 3. role conflict/ambiguity, 4. perception of transition and educational preparation).

	Coefficient (univariable)	Coefficient (multivariable)
1. Psychological distress		
The systematicness of the practicum	-0.28 (-0.37 to -0.18, $p < 0.001$)	-0.17 (-0.30 to -0.05, $p = 0.008$)
Teacher involvement	-0.06 (-0.12 to -0.01, $p = 0.020$)	-0.00 (-0.06 to 0.05, $p = 0.923$)
The quality of supervision	-0.11 (-0.17 to -0.05, $p < 0.001$)	0.08 (-0.01 to 0.17, $p = 0.072$)
Preparing for demands	-0.22 (-0.31 to -0.13, $p < 0.001$)	-0.03 (-0.16 to 0.10, $p = 0.658$)
Being part of a professional team	-0.19 (-0.26 to -0.12, $p < 0.001$)	-0.10 (-0.21 to 0.00, $p = 0.056$)
Job demands		
low	-	-
high	0.55 (0.44–0.66, $p < 0.001$)	0.50 (0.39–0.61, $p < 0.001$)
Job control		
low	-	-
high	-0.30 (-0.41 to -0.19, $p < 0.001$)	-0.19 (-0.30 to -0.08, $p = 0.001$)
2. Sleep problems		
The systematicness of the practicum	-0.38 (-0.52 to -0.24, $p < 0.001$)	-0.26 (-0.45 to -0.07, $p = 0.007$)
Teacher involvement	-0.12 (-0.20 to -0.04, $p = 0.003$)	-0.05 (-0.13 to 0.03, $p = 0.201$)
The quality of supervision	-0.14 (-0.23 to -0.05, $p = 0.002$)	0.12 (-0.02 to 0.25, $p = 0.085$)
Preparing for demands	-0.23 (-0.37 to -0.10, $p = 0.001$)	0.05 (-0.14 to 0.25, $p = 0.594$)
Being part of a professional team	-0.27 (-0.37 to -0.16, $p < 0.001$)	-0.21 (-0.37 to -0.05, $p = 0.009$)
Job demands		
low	-	-
high	0.69 (0.53–0.85, $p < 0.001$)	0.65 (0.48–0.82, $p < 0.001$)
Job control		
low	-	-
high	-0.20 (-0.37 to -0.04, $p = 0.017$)	-0.03 (-0.19 to 0.14, $p = 0.737$)
3. Role conflict/ambiguity		
The systematicness of the practicum	0.28 (0.20–0.37, $p < 0.001$)	-0.19 (0.08–0.30, $p = 0.001$)
Teacher involvement	0.06 (0.01–0.11, $p = 0.026$)	0.00 (-0.04 to 0.05, $p = 0.952$)
The quality of supervision	0.14 (0.09–0.20, $p < 0.001$)	-0.01 (-0.06 to 0.09, $p = 0.693$)
Preparing for demands	0.17 (0.08–0.25, $p < 0.001$)	-0.07 (-0.18 to 0.04, $p = 0.207$)
Being part of a professional team	0.18 (0.11–0.24, $p < 0.001$)	-0.06 (-0.03 to 0.15, $p = 0.217$)
Job demands		
low	-	-
high	-0.53 (-0.63 to -0.44, $p < 0.001$)	0.48 (-0.57 to -0.38, $p < 0.001$)
Job control		
low	-	-
high	0.45 (0.35–0.55, $p < 0.001$)	0.36 (0.27–0.45, $p < 0.001$)
4. Perception of transition and educational preparation		
The systematicness of the practicum	0.66 (0.55–0.76, $p < 0.001$)	0.35 (0.21–0.49, $p < 0.001$)
Teacher involvement	0.18 (0.11–0.24, $p < 0.001$)	0.08 (0.02–0.14, $p = 0.009$)
The quality of supervision	0.32 (0.25–0.38, $p < 0.001$)	-0.04 (-0.14 to 0.06, $p = 0.430$)
Preparing for demands	0.59 (0.49–0.69, $p < 0.001$)	0.22 (0.07–0.36, $p = 0.003$)
Being part of a professional team	0.45 (0.37–0.52, $p < 0.001$)	0.15 (0.03–0.27, $p = 0.012$)
Job demands		
low	-	-
high	-0.25 (-0.38 to -0.11, $p < 0.001$)	-0.13 (-0.26 to -0.01, $p = 0.040$)
Job control		
low	-	-
high	0.24 (0.10–0.37, $p = 0.001$)	0.07 (-0.05 to 0.20, $p = 0.242$)

environments with a considerably high job demands, such as time pressure, the benefits of having a good final clinical practicum experience are not that distinct and may not exceed the negative effects of having high job demands. This seems reasonable because many newly graduated nurses do not feel prepared to manage the nurses' normal work and patient load (Halpin et al., 2017; Labrague et al., 2019) and the high job demands and heavy workloads are shown to be the most significant stressors affecting negatively on the transition period (Labrague & McEnroe-Petitte, 2018). On the other hand, autonomy and decision latitude have previously been linked to new nurses' better well-being (Lavoie-Tremblay et al., 2008), but in this study the job control did not moderate any of the associations between the final clinical practicum and transition.

From the five final clinical practicum elements that were examined, the systematicness of the practicum was associated with all the four transition indicators. The systematicness indicated that the practicum

placement served the student's individual learning needs, the student had concrete learning objectives, the progress was planned and there was sufficient time for achieving the set objectives. Basically, the systematicness was related to having a well-organised practicum that enhanced students' possibilities to improve the potential competence deficiencies – and simultaneously, confidence deficiencies – before stepping into the nurse's role. Previous studies have shown that graduating students' perceptions about their competence can be unrealistically high since all the practicums, including the final, are performed under supervision and without the full experience of a nurse's duties and responsibilities (Kajander-Unkuri et al., 2014; Theander et al., 2016). Therefore it is very likely that new nurses experience a considerable amount of stress and feelings of deficiency in their transition when the actual competence level is realised in their first workplace. Multiple studies have shown a link between the inadequate educational preparation and the unrealistic expectations that newly

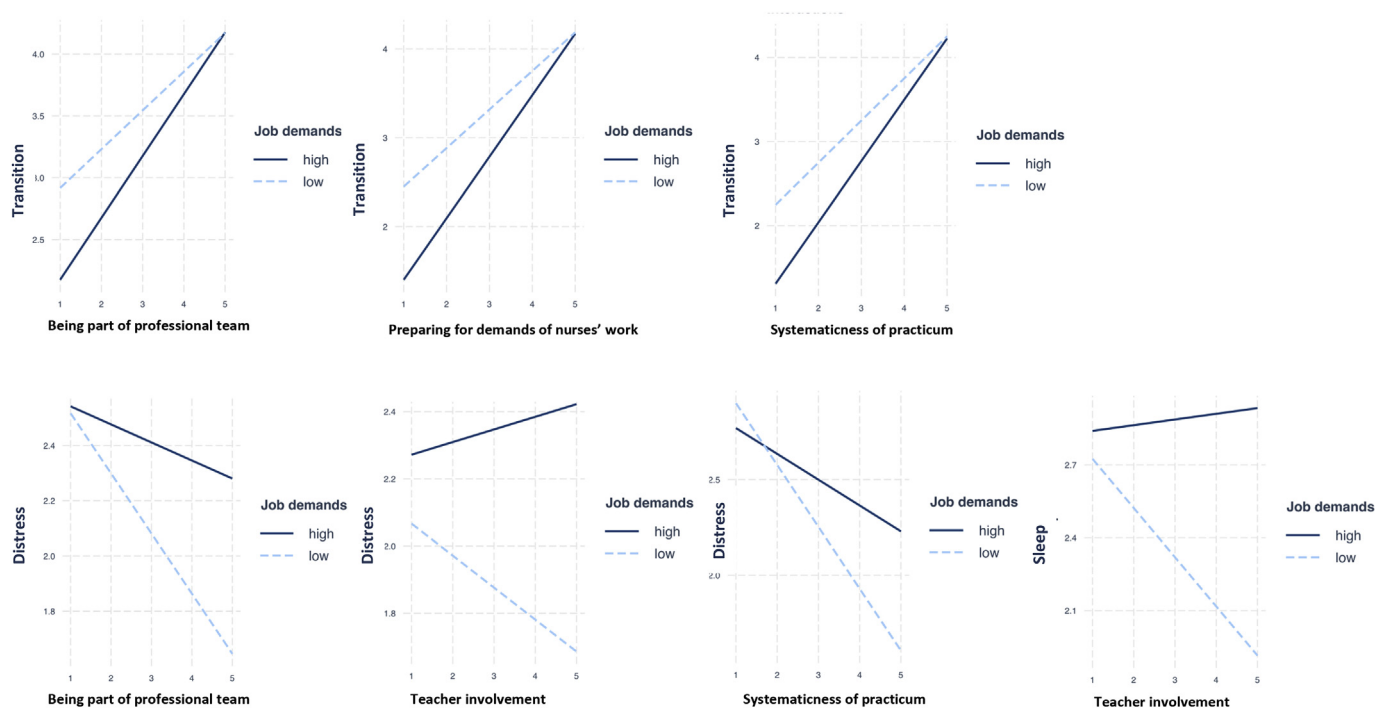


Fig. 1. Interaction effects between final clinical practicum elements and job demands (Transition = Perception of transition and educational preparation; Distress = Psychological distress; Sleep = Sleep problems).

qualified nurses have about their new role (Higgins et al., 2010; Tingleff and Gildberg, 2014).

Thus, ensuring that students have realistic perceptions about one's competence level, as well as about the demands and requirements of the professional practice, would be of importance in final clinical practicum (Kaihlanen et al., 2019a). Evidently students cannot be equipped with all the knowledge and skills required in demanding and constantly changing health care, but instead of preparing students to handle the stable and predictable clinical situations, a practicum should aim to prepare them for the complex and acute nature of nursing, which is the current reality in many work environments (Wolff et al., 2010). This statement is supported by our findings as the nurses who had better opportunities to prepare for the demands of a nurse's work in the practicum had more positive perceptions about their transition and educational preparation. Having positive pre-entry perceptions can be beneficial in regard to the retention of early career nurses, because it has shown to moderate the association between the post-graduate work-characteristic and professional commitment (Guerrero et al., 2017).

Quite surprisingly, the quality of the supervision (including e.g. a trustful, competent and committed supervisor) was the only practicum element in this study that was not associated with any of the transition indicators, except when examined individually. In previous literature adequate supervision and mentorship have been seen as the main elements in facilitating students' transition into professionals by increasing their sense of preparedness and decreasing the stress about starting working life (Kaihlanen et al., 2013; Lavoie-Tremblay et al., 2018; van Rooyen et al., 2018). This contradictory finding does not necessarily indicate the unimportance of the supervision in final clinical practicum, but it is possible that the potential benefits do not extend as far as to one to two years post-graduation. Also, the benefits may not exceed the significance of post-graduate mentoring and social support, which are known to be essential in promoting early career nurses' successful transition, professional socialisation (Edwards et al., 2015; Ferguson, 2011) and retention (Brook et al., 2018). However, the nurses in this study who evaluated themselves as being more part of a professional team in the practicum, with a supportive and collegial atmosphere, had

more positive perceptions about their transition and educational preparation. This finding is in line with previous studies (Callaghan et al., 2009; Kaihlanen et al., 2019a) and suggests that instead of having a designated accountable supervisor in the final clinical practicum, perhaps a more collective approach should be prioritised in order to help the students to gain a sense of belonging to the unit and team. Already being a visible and acknowledged member of the team as a student could improve the confidence of new nurses regarding their interpersonal skills, which in turn could help them to adjust to their new roles more quickly (Chung et al., 2008; Kumaran and Carney, 2014). Further studies, for example with longitudinal or experimental designs, are needed to determine the most beneficial supervision practices in the final clinical practicum.

5. Strengths and limitations

Certain limitations should be taken into account when interpreting the findings of this study. Firstly, the cross-sectional analyses do not allow causal interpretations of any identified associations. Secondly, based on the rather small response rate, we cannot state that the results of this study are representative. However, the sample size of 712 early career nurses can be considered large in the context of Finnish nursing education research, and a strength is that the participants represented different health care environments, geographical areas and phases of post-graduate employment. By controlling the analysis with multiple potential confounders, we also tried to minimise the possibility of sampling bias. Thirdly, we are aware that the four individual measurements that were chosen to demonstrate the transition only provide a limited description of a multidimensional experience. Lastly, it should be considered that despite several of the significant univariate associations between the practicum elements and transition indicators being lost in the multivariate models, some of the practicum elements may still intermediate through other practicum elements.

6. Conclusion

Our results suggest that final clinical practicum experiences affect

nurses' first years of employment. In particular, the systematic planning and implementation of the final clinical practicum and opportunities to become an active member of the work community should be considered for promoting a smoother transition from a student to a nurse. The potential benefits of a good final clinical practicum experience may especially be seen among those nurses who do not experience a considerably high job demands, including time pressure in their first work environments. This study adduced new knowledge about the link between the pre-graduate preparation and the transition experience of early career nurses.

Author statement

Anu-Marja Kaihlanen: Conceptualization, Methodology, Formal analysis, Investigation, Writing - Original Draft, Writing - Review & Editing, Visualization, Marko Elovainio: Conceptualization, Methodology, Formal analysis, Writing - Review & Editing, Visualization, Elina Haavisto: Conceptualization, Methodology, Writing - Review & Editing, Leena Salminen: Conceptualization, Methodology, Writing - Review & Editing, Timo Sinervo: Conceptualization, Methodology, Investigation, Writing - Review & Editing, Visualization, Supervision.

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Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.nepr.2019.102680>.

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