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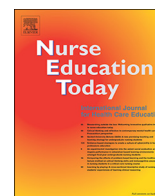
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Final clinical practicum, transition experience and turnover intentions among newly graduated nurses: A cross sectional study

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ABSTRACT

Background: The shortage of nurses is a global issue, and turnover rates are especially high for newly graduated nurses. The transition from student to nurse is often described as challenging, and the final clinical practicum before graduation is suggested to be important in preparing graduating students for the transition. However, little is known about the actual relationships between the final clinical practicum, transition and turnover intentions.

Objectives: To examine whether the final clinical practicum experience is associated with the transition experience and turnover intentions of newly graduated nurses, and whether the transition experience mediates the potential relationship between the practicum and turnover intentions.

Design: Cross-sectional survey study.

Settings: The study was carried out in Finland (October–December 2018).

Participants: Registered nurses graduated within the past two years (n = 712).

Methods: A new survey instrument with five subscales was developed for measuring the final clinical practicum experience. Transition experience was measured on four scales that demonstrated the emotional, physical, socio-developmental and intellectual domains of the transition: Psychological distress, sleep quality, role conflict/ambiguity, perception of transition and educational preparation. Turnover intentions from job and profession were asked about with two questions. Structural equation modelling was used to explore the associations between the variables. The models were adjusted for multiple potential confounders.

Results: Final clinical practicum experience was associated with all domains of the transition experience and turnover intentions. The association between the practicum and turnover intentions was partly mediated by the emotional (psychological distress) and socio-developmental (role conflict and ambiguity) domains of the transition.

Conclusions: Our findings provide new evidence about the associations between the specific final clinical practicum dimensions and turnover intentions and the specific mechanisms linking this association. These results highlight the importance of final clinical practicums and suggest targets for improving nurses' transition processes during their first years in practice.

1. Introduction

Currently, healthcare organizations in many countries suffer from a nursing shortage. In 2013, WHO estimated that 40% of the nursing workforce may leave their work within a decade (WHO, 2013). A

serious and long-term shortage of a qualified work force in health services may increase the risk of missed care and even patient mortality (Aiken et al., 2014; Ball et al., 2018). Turnover from the profession and the job is especially high among newly graduated nurses. In some countries, even 35–60% of them leave their job (Brewer et al., 2012;

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Beckerson, 2018), and every third have strong intentions to leave the profession within the first years of employment (Rudman et al., 2014).

High demands experienced in nursing practice, inconsistent role conceptions, and a mismatch between education and nursing practice have been associated with transition shock (Duchscher, 2009). Other issues—such as inadequate professional support and orientation, doubts about one's own capabilities, new responsibilities and difficulties in adapting to the nursing culture—have also been recognized as potential barriers to a successful transition from student to nurse (Walker et al., 2017), possibly jeopardizing the retention of newly graduated nurses (Beecroft, 2008). Multiple studies have shown a link between satisfaction with the transition and intentions to stay in the profession in newly graduated nurses (Liang et al., 2018; Parker et al., 2014). This present study was conducted to increase the knowledge about the potential of final clinical practicum experiences in shaping the transition experience and turnover intentions of newly graduated nurses.

2. Background

The time before graduation is a phase of anticipatory socialization when nursing students build images about life after graduation based on their learning experiences (Duchscher, 2008; Kramer, 1974; Scott et al., 2008). Sometimes these pre-graduate images can be unrealistic, and many newly graduated nurses feel inadequately prepared because of the differences between the learning experiences during education and the realities of the profession (Dwyer and Hunter Revell, 2016; El Haddad et al., 2017; Walker et al., 2017). Unfamiliar circumstances, new role expectations and suddenly increased responsibility and workload contribute to increased role conflict and ambiguity (Kalkman, 2018; Kelly and Ahern, 2009), role stress (Chang and Hancock, 2003), psychological distress (Watson et al., 2009) and even a decline in quality of sleep (Hasson and Gustavsson, 2010). All these transitional problems that are partly related to the potential mismatch between nursing studies and real-world demands may have effects on newly graduated nurses' intentions to stay in a nursing career. Nurses' organisational and professional turnover are costly and have negative consequences on operational performance, care quality and patient outcomes (Aiken et al., 2014; Kovner et al., 2014).

Duchscher (2008, 2009) defines transition as a process where newly graduated nurse moves through stages of “doing, being and knowing” while facing the variety of emotional, physical, socio-developmental and intellectual experiences. The emotional experience refers to the overwhelming and labile emotions, insecurity and anxiety. The physical experience refers to the amount of all-encompassing energy that is required from newly graduated nurses when they try to perform in expected level, and how sleeping difficulties commonly contributes to their growing exhaustion. The socio-developmental experience refers to the disconnection between the old and new role that causes role uncertainty, whereas the intellectual experience is related to the transition shock that is caused by the incongruence between the learned and real nursing practice, limited tacit and practical knowledge and concerns about unfamiliar clinical situations (Duchscher, 2008, 2009).

The final clinical practicum (FCP) before graduation is the last chance for nursing students to get prepared for the upcoming transition and work life. Elements such as gaining learning experiences that mirror the reality of what is like to be a graduated nurse, being an active member of a professional team, adequate support and a well-functioning supervisory relationship have been recognized as important in FCPs (Casey et al., 2011; Kaihlanen et al., 2018, 2019). FCP experiences have been suggested as facilitating the necessary change in role conception from student to nurse (Coudret et al., 1994) and as assisting graduating students in developing positive attitudes towards their nursing career (Tseng et al., 2013). The FCP may also be important in newly graduated nurses' recruitment and retention, as it can shape decisions about preferable future work environments (McKenna et al., 2010; Shih and Chuang, 2008; Shoqirat and Abu-Qamar, 2015).

In Finland, the Bachelor of Health Care (Nursing) program consists of 210 study credits (3.5 years), of which 90 credits are completed in clinical learning environments according to EU legislation (European Commission 2005/36/EC). The FCP is part of advanced studies that is typically performed during the final semester of education, but the implementation of students' FCPs (e.g. length, content, structure, supervision) vary significantly between universities of applied sciences and clinical placements. No final examination is required for registration, and students commonly graduate soon after finishing their FCPs.

Despite the suggested importance of FCPs in preparing students for the transition and that transitional challenges seem to contribute to newly graduated nurses' turnover intentions, little is known about the actual associations between these factors. Hereby, in the present study, we investigated:

- 1) Are the FCP experiences associated with the transition experience and turnover intentions of newly graduated nurses?
- 2) Does the transition experience mediate the potential relationship between the FCP experience and turnover intentions?

Additionally, since there were no previous instruments available to measure the FCP experience, a new instrument was developed and evaluated in this study.

3. Methods

3.1. Participants and Data Collection

In this study, “newly graduated nurses” were defined as all registered nurses who graduated within the last two years (between 9/2016 and 6/2018). The first two years have repeatedly been recognized as a challenging period for newly graduated nurses making the transition (Hoffart et al., 2011; Kramer, 1974). The total sample (n = 6797) was from the Finnish Central Register of Valvira (National Supervisory Authority for Welfare and Health), based on the registration date. E-mail addresses were obtained for 3942 nurses from the register of the Union of Health and Social Care Professionals in Finland (Tehy). E-mail invitations with a link to the electronic questionnaire were sent to these nurses. The data were collected from 1.11–21.12.2018; and during this time, three e-mail reminders were sent. Altogether, 712 nurses responded to the questionnaire (18% response rate).

An ethical approval for this study was obtained from the ethics committee of the National Institute for Health and Welfare in Finland. In the invitation letter, respondents were informed about the purpose of the study, the voluntary nature of completing/submitting the questionnaire, and that the data would be handled without identifying information and only by members of the research group. Submitting the questionnaire was considered as consent to participate in the study.

3.2. Measures

Because no previous instruments were found to measure the FCP experience, a new survey instrument with five subscales was developed and used in this study. The transition experience was measured on four scales, and turnover intentions were addressed with two questions. Additionally, several potential confounders were measured.

3.2.1. FCP Experience

The scale measuring the FCP experience was developed based on a previous literature review and qualitative studies (Kaihlanen et al., 2013, 2018, 2019). All the elements in FCP that seemed to have a link to a facilitated transition were formed into items (n = 28) under five subscales. A two-step method proposed by Lynn (1986) was used to determine the content validity of the items: First, expert groups of clinical nurse teachers (n = 5) and experienced nurses (n = 8) evaluated the clarity and relevance of the items. Then, the content validity index was calculated for individual items (I-CVI) and the CVI average for the overall scale (S-CVI-ave). The S-CVI-ave was 0.925 (0.9 is

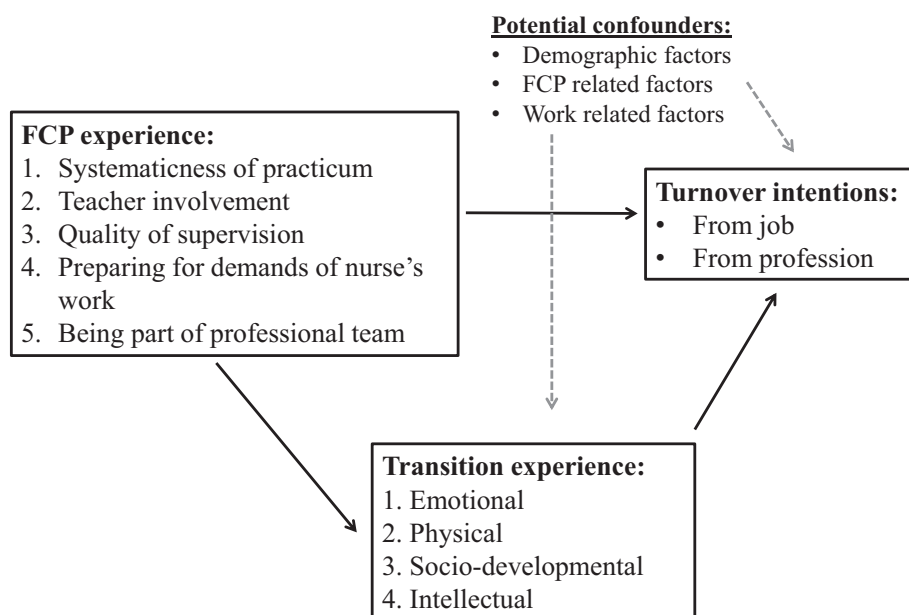


Fig. 1. Conceptual model of the study.

accepted level) after removing two items under the I-CVI minimum of 0.78 (Polit et al., 2007). Finally, items were pilot-tested for clarity with 20 newly graduated nurses. No changes were needed.

The five subscales describing the “FCP experience” were: (1) Systematicness of practicum (5 items, $\alpha = 0.81$, e.g., *My practicum proceeded systematically, I had concrete learning objectives*); (2) Teacher involvement (3 items, $\alpha = 0.85$, e.g., *I had support from the teacher when needed; Teacher attended the practicum evaluation*); (3) Quality of supervision (6 items, $\alpha = 0.95$, e.g., *I was able to reflect my emotions with my supervisor; My supervisor had the skills to guide a graduating student*); (4) Preparing for demands of nurse's work (6 items, $\alpha = 0.83$, e.g., *I faced challenges related to nurse's work, I had possibilities to be responsible and work independently*); (5) Being part of professional team (4 items, $\alpha = 0.88$, e.g., *I felt to be a member of the work community, I was supported by different members of work community when needed*). Items were rated on a 5-point scale (1 = ‘implemented very poorly’, 5 = ‘implemented very well’). The subscales are named as r_1 – r_5 in Figs. 2–5.

3.2.2. Transition Experience

In defining the central domains of the transition experience, we utilised the Transition Conceptual Framework by Duchscher (2009), which includes the emotional, physical, socio-developmental and intellectual level of the transition experience.

Four scales were used to measure the domains:

The emotional domain was demonstrated by psychological distress, which was measured with four items ($\alpha = 0.87$) from the General Health Questionnaire (Goldberg and Williams, 1988). Items (e.g. *Have you recently felt constantly under strain?*) were rated on a 4-point scale (1 = ‘not at all’, 4 = ‘much more than usual’).

The physical domain was demonstrated by sleep quality and was measured with four items ($\alpha = 0.84$) on a scale evaluating sleep problems (Jenkins et al., 1988). Participants were asked to rate how often during the past weeks they have for example *Woke up feeling tired and worn out after the usual amount of sleep*. Items were rated on a 6-point scale (1 = ‘not at all’, 6 = ‘every night’).

The socio-developmental domain was demonstrated by role discrepancy, which was measured with five items ($\alpha = 0.83$) on the Role conflict scale (e.g., *I have to buck a rule or policy in order to carry out an assignment*) and three items ($\alpha = 0.78$) on the Role ambiguity scale (e.g., *I know exactly what is expected of me*) (Rizzo et al., 1970). The scales were combined into one ‘Role conflict and ambiguity’ scale

($\alpha = 0.81$) for the analysis. Items were rated on a 5-point scale (1 = ‘totally disagree’, 5 = ‘totally agree’).

The intellectual domain was demonstrated with three items ($\alpha = 0.78$) that were created to describe the transition experience and educational preparation. The items were: *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*. Items were rated on a 5-point scale (‘totally disagree’ to ‘totally agree’) with a higher score indicating a better experience/preparation.

3.2.3. Turnover Intentions

Turnover intentions from the job and profession were asked with two questions: *I have planned to change my current job/employer; I have planned to change the profession*. Respondents were advised to think about the past six months. Items were rated on a 5-point scale (‘totally disagree’ to ‘totally agree’). Items are named as r_trnj and r_trnp in Figs. 2–5.

3.2.4. Potential Confounders

Choosing the confounders was done by setting all the potential confounding variables, detected from available literature (Halpin et al., 2017; Phillips et al., 2015; Yeh and Yu, 2009), into the same correlation matrix with the main study variables. Those of the potential confounders (including demographic, FCP related and work related factors) that showed significant correlation with any of the main study variables were included in the study. These were: age, gender, previous health-care degree (licensed practical nurse), amount of health care work experience gained during studies, current employment sector, length of current employment, work schedule (day job, two- shift, three- shift), whether the FCP placement was in the same sector as the current employment, type of FCP placement, familiarity of the placement from previous clinical practicums, and whether the supervisor remained the same during the whole FCP.

Additionally, workload (time pressure), team climate, and social support at work were measured as these have been linked both to the newly graduated nurses' well-being during the transition period (Lavoie-Tremblay et al., 2008a) and turnover intentions (Lavoie-Tremblay et al., 2008b).

Workload (time pressure) was measured with three items ($\alpha = 0.91$) from the Nurse Stress Index (Harris, 1989). Participants were asked to rate on a 5-point scale (hardly ever to very often or

Table 1
Descriptive statistics of the categorical variables.

Variable ^a		n	%
Gender	Female	627	88,9
	Male	76	11,1
Licensed practical nurse	Yes	274	38,5
	No	437	61,5
Work schedule	Dayjob	155	22,1
	Two shift	113	16,1
	Three shift	389	55,4
	Other	45	6,4
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
Current work environment	Over 15 years	6	0,9
	Emergency care	107	15,4
Work experience during studies	Psychiatric and substance abuse services	94	13,5
	Specialized healthcare	265	38,1
	Elderly care	161	23,1
	Reception work	36	5,2
	Other	33	4,7
	No experience	32	4,5
FCP placement	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
Same job than FCP	Emergency care	161	22,8
	Psychiatric and substance abuse services	95	13,4
	Specialized healthcare	342	48,4
	Elderly care	50	7,1
	Reception work	29	4,1
Length of FCP (weeks)	Other	30	4,2
	Yes	159	22,5
Familiar FCP placement	No	547	77,5
	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
	Same supervisor during FCP	Yes	345
No		362	51,2
	Yes	637	90,1
	No	70	9,9

^a All variables were controlled in the analysis.

continuously), how often these issues (e.g., *Constant rush and pressure due to uncompleted work*) had disturbed, worried or stressed them during the last two months.

Team climate was measured with four items ($\alpha = 0.89$) from the Participatory safety subscale from the Team Climate Inventory (Aalto et al., 2014; Anderson and West, 1998). Items (e.g. *We have a ‘we are together’ attitude*) were rated on a 5-point scale (‘totally agree’ to ‘totally disagree’).

Social support at work was measure with two items ($\alpha = 0.635$) asking whether the participants *get support from colleagues* and *from manager when needed*. Items were rated on a 5-point scale (‘totally agree’ to ‘totally disagree’).

3.3. Statistical Analysis

Before examining the associations between the main study variables, we tested the overall structural validity of the new FCP experience instrument by using exploratory and confirmatory factor analysis/ structural equation modelling (SEM), including individual FCP items (raw scores). In exploratory factor analysis, a maximum likelihood extraction and oblimin rotation were used because we expected that factors would be correlated. The efficient number of factors was determined using the cut-off eigenvalue < 1 (Costello and Osborne, 2005).

Testing the final structure was done in two steps. First, a one-factor model was estimated where all items were loaded on the same underlying latent construct (null model). In the second step, a model representing the original theoretical model was estimated. Goodness-of-fit of the SEM models were evaluated using the following fit indices: chi-square, the root mean square error of approximation (RMSEA), standardized root mean-squared residual (SRMR), comparative fit index (CFI), normed fit index (NFI) and Tucker-Lewis Index (TLI). The non-significant chi-square value indicates that the model fits the data. However, chi-square is highly sensitive to sample size. RMSEA values < 0.05 and 0.10 represent a good and acceptable fit, whereas CFI, NFI and TLC values above 0.90 and 0.95 indicate an acceptable and good fit (Byrne, 1998). In comparing alternative models, a statistically significant improvement in the chi-square value indicated a better fit of the model. All models were fitted using full information maximum likelihood, including cases with missing values in some of the items.

We tested the associations between the FCP experience (subscales combined into one latent variable), transition experience and turnover intentions (items combined into one latent variable) and whether the four domains of the transition experience also mediated the associations between FCP and turnover intentions using structural equation modelling. All FCP items were reverse-scored for the analysis so that a higher score indicated a negative experience of FCP. The potential contribution of all the confounding factors were taken into account and controlled in the analysis by using adjusted values of all scales predicted from linear regression models.

Four structural models were tested separately for each potential

Table 2
Descriptive statistics of the main study variables.

Variable		Scale	Mean	St. dev.
FCP experience	r_1 Systematicness of FCP	1–5	4,42	0,59
	r_2 Teacher involvement	1–5	3,48	1,05
	r_3 Quality of supervision	1–5	4,18	0,92
	r_4 Preparing for the demands of nurse’s work	1–5	4,28	0,62
	r_5 Being part of professional team	1–5	4,19	0,79
Transition experience	Emotional (PD = Psychological distress)	1–4	2,09	0,77
	Physical (SP = Sleeping problems)	1–6	2,59	1,11
	Socio-developmental (RCA = Role conflict/ambiguity)	1–5	2,38	0,7
	Intellectual (PTE = Perception of transition/educational preparation)	1–5	3,63	0,9
Turnover intention	r_trnj From job	1–5	2,83	1,42
	r_trnp From profession	1–5	2,43	1,48

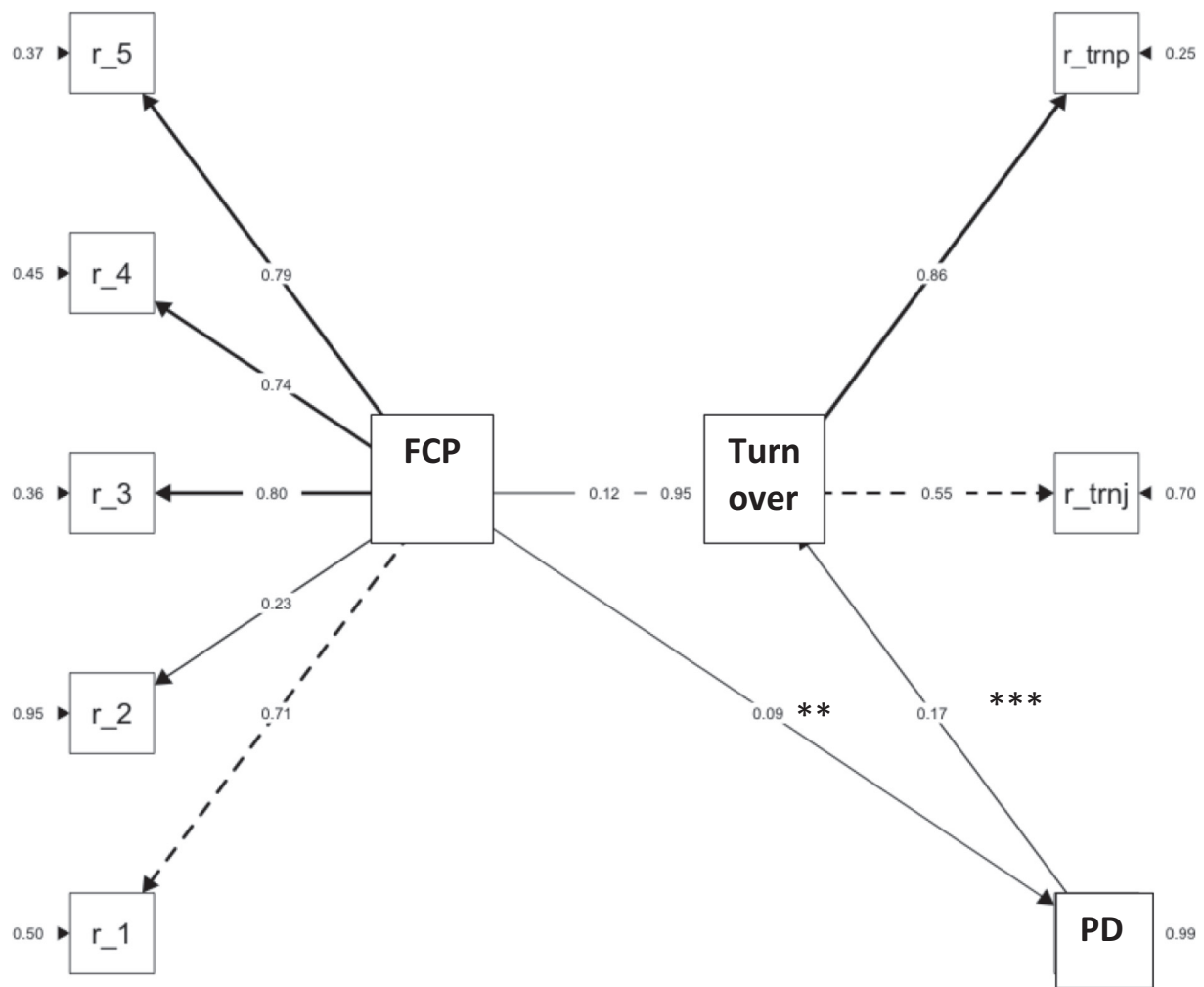


Fig. 2. SEM model with emotional domain (PD = Psychological distress) as mediator. * = $p < .05$ ** = $p < .01$ *** = $p < .001$.

mediator: (1) psychological distress, (2) sleep problems, (3) role conflict/ambiguity and (4) perception of transition and educational preparation.

Goodness-of-fit of the SEM models were evaluated in a similar way as in the previous step. Analysis was conducted with SPSS and R statistical software (lavaan package). Fig. 1 illustrates the conceptual model that was tested in this study.

4. Results

4.1. Description of the Participants

Descriptive statistics of the categorical variables and the main study variables are presented in Table 1 and Table 2, respectively. Most nurses were female (89%), the mean age was 31.1 years (range 21–61), and close to 40% of nurses had a previous qualification as a licensed practical nurse. Nurses most commonly worked in specialized health care, were currently employed for between 6 and 11 months and worked in three shifts. Health care work experience gained during nursing education was most often between 6 and 11 months. Specialized health care was the most common FCP placement, 22,5% of nurses currently worked in their FCP placement. For close to 50% of the nurses, placement was also familiar from previous practicums or work.

4.2. Structural Validity of the FCP Experience Instrument

The exploratory factor analysis showed that the FCP experience

items loaded on five factors, in accordance with the initial five subscales, explaining 67.1% of the total variance. Item loadings were from moderate (0.40) to high (0.92), except for two items that were removed based on low loadings (0.24) (Costello and Osborne, 2005). After re-running the analysis, item loadings were between 0.43 and 0.92.

Further structural validity testing suggested that the five-factor model showed acceptable fit (CFI = 0.936, TLI = 0.927, NCI = 0.917, RMSEA = 0.066, SRMR = 0.038), and it fitted the data significantly better than the one-factor model (CFI = 0.688, TLI = 0.658, NCI = 0.674, RMSEA = 0.143, SRMR = 0.097).

4.3. Associations Between FCP Experience, Transition Experience and Turnover Intentions

There was a significant association between the latent FCP construct and turnover intentions using the unadjusted subscales ($\beta = 0.26$, $p < .001$). FCP was significantly associated with the emotional (psychological distress, $\beta = 0.23$, $p = .002$), physical (sleeping problems, $\beta = 0.21$, $p < .001$), socio-developmental (role conflicts/ambiguity, $\beta = 0.26$, $p < .001$) and intellectual (perception of transition and educational preparation, $\beta = 0.49$, $p < .001$) domains of the transition. Of the potential mediators, role conflicts/ambiguity ($\beta = 0.41$, $p < .001$) and distress ($\beta = 0.20$, $p < .001$) were associated with turnover intentions. The associations between the FCP and the four transition domains remained significant after adjusting the models with the all the potential confounders. The association between the FCP and turnover intentions remained significant in the model with sleeping

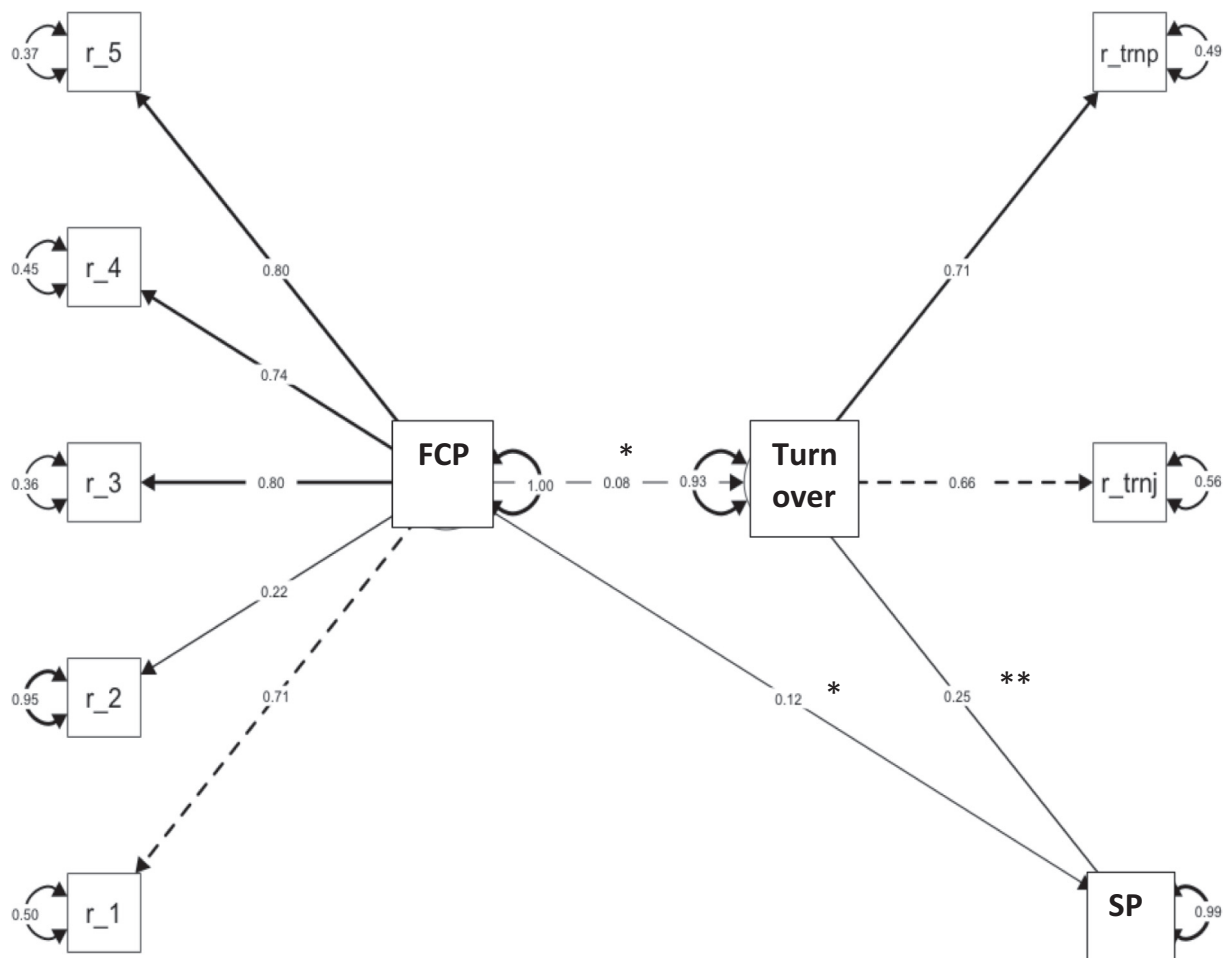


Fig. 3. SEM model with physical domain (SP = Sleep problems) as mediator. * = $p < .05$ ** = $p < .01$ *** = $p < .001$.

problem as mediator (Figs. 2–5).

4.4. Mediating Effects of Transition Domains

All SEM models showed an acceptable fit to the data. Of the individual transition domains, emotional (psychological distress, $p = .016$) and socio-developmental (role conflicts/ambiguity, $p = .008$) showed significant mediating effects in the association between FCP and turnover intentions. No mediating indirect effects were found in sleeping problems or perception of transition and educational preparation. The fit indexes of the SEM models testing the mediating effects of individual transition domains are presented in Table 3. The results of the SEM models are presented in Figs. 2–5.

5. Discussion

In this study, we explored whether the FCP experience was associated with the transition experience and turnover intentions of newly graduated nurses and whether the transition experience mediated the potential relationship between the FCP and turnover intentions. We found the FCP to be statistically significantly associated with all domains of the transition experience, as well as with turnover intentions, which were mediated by the emotional (psychological distress) and socio-developmental (role conflict and ambiguity) domains of the transition. These findings support the statement that along with the several different post-graduate transition and residency programs (Eckerson, 2018; Edwards et al., 2015), new strategies—such as investing in health care education, training and actions to assist new

professionals in entering the work life—would be of benefit for securing a sufficient workforce (WHO, 2016). Previous knowledge about the potential of different pre-graduate programs aiming to facilitate transition is scarce and scattered (Hoffart et al., 2011; Kaihlanen et al., 2018).

The association between the FCP and socio-developmental domain of transition, and the detected mediating effect of this domain yields the significance of the pre-graduate anticipatory socialization. There's a noted gap between the role and responsibilities that graduating students experience in their clinical practicums and what they soon experience when entering workforce (Romyn et al., 2009). In order to reduce these role discrepancies and ease the transition in graduating students, they need to be included to the team and obtain a realistic picture about the multiple requirements of the profession and what is expected from them after graduation already during their studies (Dames, 2019). This could mean, for example, experiencing typical working hours, expected nurse–patient ratio, challenging patient cases and having an active role in interprofessional cooperation during the FCP.

The strong association between the emotional exhaustion and turnover intentions of newly graduated nurses has been previously established (Laschinger et al., 2016). But based on our knowledge, this is the first study to show an association between the final clinical learning experiences and post-graduate emotional well-being and turnover intentions. Psychological distress of newly graduated nurses is shown to be at the highest level right after entering the workforce and it seems to remain high for the first two years (Watson et al., 2009). In addition to the support services targeted to decrease distress during this initial

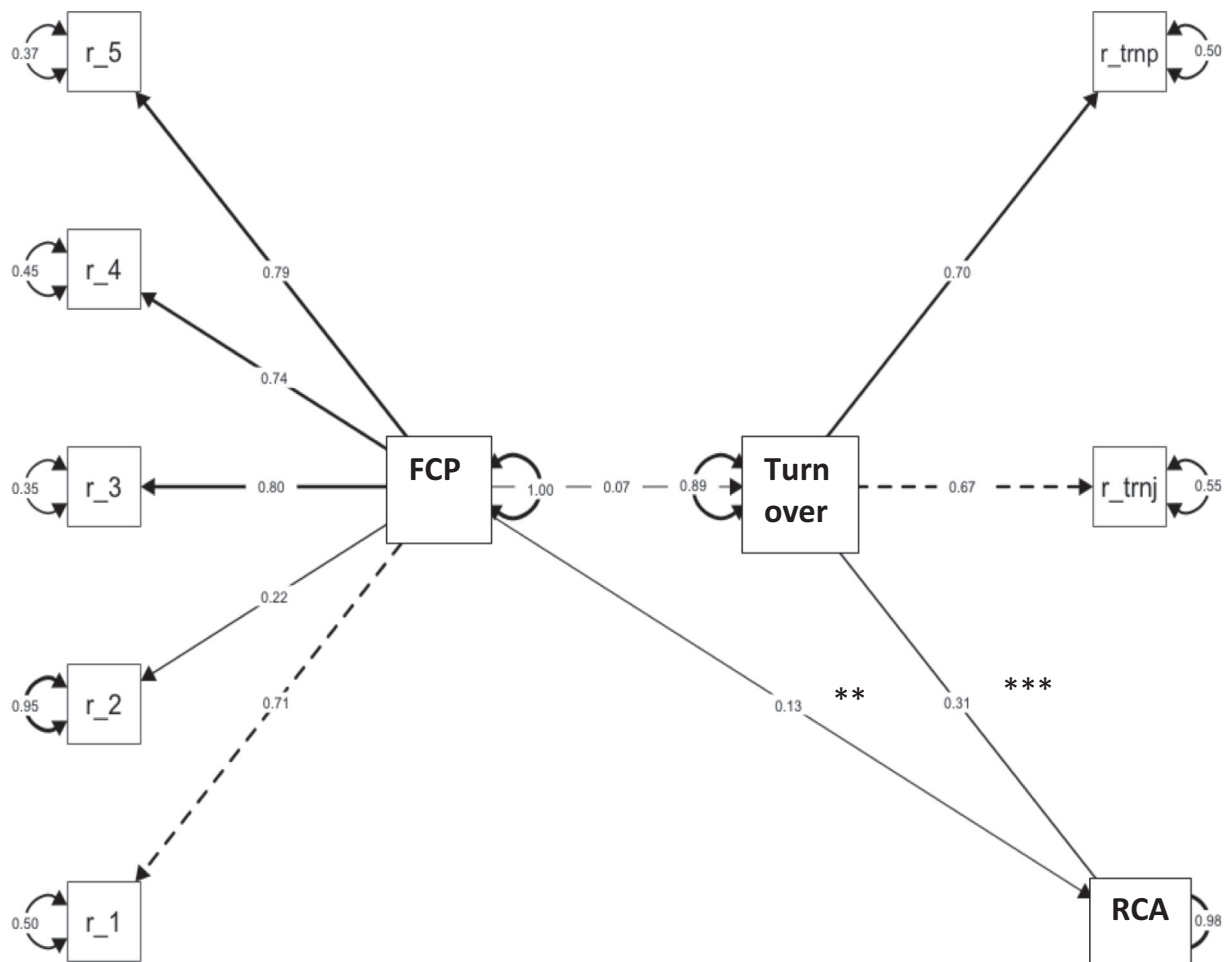


Fig. 4. SEM model with socio-developmental domain (RCA = Role conflict/ambiguity) as mediator. * = $p < .05$ ** = $p < .01$ *** = $p < .001$.

stage of employment, our findings suggest that there should also be a clearer emphasis on facilitating the upcoming transition already in the FCPs. This could be done for example by providing graduating students educational sessions on how to recognise and alleviate distress in the future (Mitchell, 2018) and by arranging systematic opportunities to discuss and reflect own emotions in FCP (Kaihlanen et al., 2019). This effort could help to decrease the existing gap between education and practice and increase the chances to retain newly graduated nurses in the workforce.

In this study, the intellectual domain (perception of transition and educational preparation) did not mediate the association between the FCP and turnover intentions. Whereas in previous studies, satisfaction with the educational preparation and perceived work readiness has been shown to affect newly graduated nurses' intentions to leave or remain, for example through a mediating mechanism of job (Walker and Campbell, 2013) and work environment satisfaction (Kenny et al., 2016). This difference may be due to the large proportion of nurses having prior experience in care work as practical nurses. Even though the intentions to leave did not seem to rise directly from the educational preparation or perceived difficulty of the transition, the strongest association was still found between this intellectual domain of transition and the FCP. Hence, how positively newly graduated nurses view their transition process and the overall preparedness provided by the nursing education may be facilitated with a well-planned and implemented final clinical experience.

6. Strengths and Weaknesses of the Study

Firstly, it should be taken into account that the cross-sectional design does not allow drawing conclusions about any causality or even the direction of the associations between the study variables. It is possible that those nurses who felt less distress or less conflict and ambiguity about their work role might have also evaluated their FCPs more positively. Secondly, the rather small response rate may also limit the representativeness of the sample, which is one of the critical components of the correctness of the conclusions. However, the strengths were that respondents represented various health care sectors and counties throughout Finland, and that the sample size of 712 newly graduated nurses can be considered large in the context of Finnish nursing research. Moreover, adjusting the analysis for multiple factors allowed us to control potential biases in the sample, and sufficient validity and internal consistency of the new FCP instrument support the validity of the results. Finally, the potential mono-method bias must be considered (e.g. the multidimensional construct of transition was measured with four single measurements) as well as the possibility of residual confounding, meaning that some potential confounders may not have been controlled in the analysis.

7. Conclusion

After controlling for several workplace-related factors, we found the FCP experience to be significantly related to both the transition experience and turnover intentions. This knowledge highlights the importance of well-planned and implemented FCPs, which would help

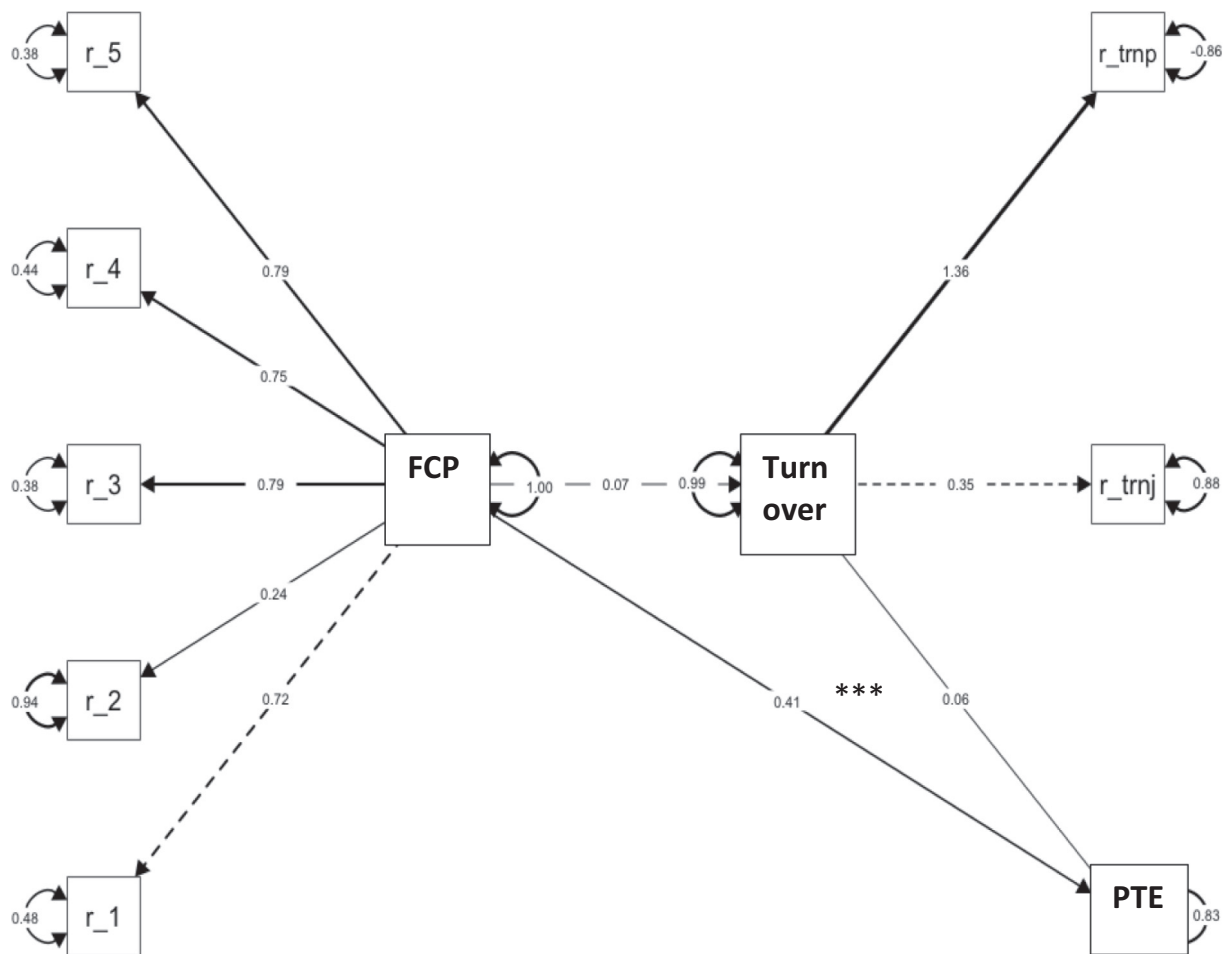


Fig. 5. SEM model with intellectual domain (PTE = Perception of transition and educational preparation) as mediator. * = p < .05 ** = p < .01 *** = p < .001.

Table 3

Model fit indices and Indirect, Direct and Total effects in the models.

	Model fit					Indirect		Direct		Total	
	CFI	TLI	NFI	RMSEA	SRMR	Effect size	P	Effect size	P	Effect size	P
Emotional (Psychological distress)	0.968	0.950	0.955	0.060	0.031	0.062	0.016	0.166	0.128	0.229	0.042
Physical (Sleeping problems)	0.967	0.949	0.954	0.060	0.030	0.027	0.086	0.200	0.042	0.227	0.027
Socio-dev. (Role conflict/ambiguity)	0.970	0.954	0.958	0.058	0.030	0.084	0.008	0.143	0.191	0.227	0.045
Intellectual (Perception of transition/educational preparation)	0.958	0.934	0.946	0.071	0.034	0.027	0.393	0.071	0.391	0.098	0.364

graduating students prepare for transitioning into professional nurses, with a lower risk of changing their career direction.

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Declaration of competing interest

None declared.

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