

博士論文（要約）

Changes in Career Adaptation and Career Adaptability among Undergraduate Student
Nurses: The Effects from the Quality of Clinical Learning Experiences

（看護大学生におけるキャリア適応とキャリア・アダプタビリティの変化
—実習経験の質による影響—）

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1. Introduction

The difficulty in school-to-work transition in terms of unsuccessful career adaptation among graduate nurses has been reported as a pervasive problem and is of concern to nursing researchers and educators. Failure in school-to-work transition entailed decreases in psychological wellbeing, negative career outcomes such as less career satisfaction and impairment in career prospects, and dropping out of profession. It was found that facilitating career adaptation contributes to success in managing transitions. It is essential for nursing schools and educators to help the student nurses better adapt to the career and, ultimately, make a successful transition to work.

2. Background

The career construction model of adaptation (CCMA) was developed to explain the process of individual career adaptation including bridging transitions. Although several researches have focused on the transition and adaptation of nursing students, the lack of a comprehensive framework limited the depth and consistency of their findings. While CCMA provides an appropriate framework for this study to explore those phenomena in career. It proposes that career adaptation is a sequential relation between dimensions of adaptivity, adaptability, adapting, and adaptation. Moreover, CCMA indicates that adapting and adaptability are two possible factors intervening in individuals' career adaptation. Several studies aiming at increasing adaptability have been conducted. However, there is also a necessity to focus on adapting, which is considered to directly affect adaptation.

For nursing students, clinical learning provides an opportunity to experience the real work of nurses. Previous research has indicated that the high-quality work experiences in internship have positively affected students' adaptive behaviors such as career exploration. Clinical learning is similar to internship as a learning activity based on real work experiences. Thus, clinical learning experiences could be considered as work experience. It is understandable that the quality of clinical learning experiences may have positive effects on adapting.

Although CCMA and earlier studies indicate a causal order between adaptability and adapting, several theories of career development and research have pointed out the possibility that individuals' adaptive behaviors in career may influence their competency including confidence and a sense of control. The backward influence from adapting to adaptability is possible. As mentioned above, the quality of clinical learning experiences may positively affect the adapting of nursing students. It could also possibly have an indirect positive effect on adaptability through adapting. However, the backward influence between adapting and adaptability remains unclear and requires further investigation.

In China, it was found that many of nursing students are challenged by career planning and transition to work in term of entering nursing without their choice. For nursing students in China, clinical learning is an essential component allowing them to gain real work experience in nursing, regardless of why they enrolled in nursing programs or their level of adaptability. Focusing on the effect of clinical learning on adapting would contribute to addressing the problems in career adaptation and transition to work among nursing students, especially those nursing students in China.

3. Study purpose and hypotheses

This study aimed to explore relationships that as a learning activity based on real work experiences that all nursing students are required to finish, clinical learning directly influences students' adapting regardless of their level of adaptability beforehand, and high-quality clinical learning experiences would facilitate their adapting. Moreover, facilitating adapting would subsequently elevate students' adaptability, even those with a low level of adaptability. The following hypotheses were made: (1) The quality of clinical learning has a positive direct effect on adapting. (2) The quality of clinical learning has a positive indirect effect on adaptability through adapting.

4. Methods

A longitudinal online survey was conducted to investigate the hypotheses. The study used opportunistic sampling to recruit the universities offering a baccalaureate nursing program in China. Data were collected in two survey waves with a time interval ranging from four to six months among the nursing students in the second semester of third year of the targeted universities. The nursing students who were under 18 years old and who took a leave of absence or withdrew from university were excluded from the study.

Time 1 survey was conducted in June 2021, within one month before clinical learning in the final year began, to measure demographics, characteristics of clinical learning, and career adaptability. Time 2 survey was conducted in November 2021, the fifth month of clinical learning, to measure students' perceived quality of clinical learning experiences, adapting, and adaptability. A WeChat account specially registered for this study by the researcher was used to distribute the online questionnaire of each survey. Participants were randomly assigned a unique identification (ID) number to link their responses in the two surveys.

All instruments used in this study were in Chinese and based on self-reported measures. The permission to use the instruments was granted by their authors. All measures were scored on a 5-point Likert-type scale, and their validity and reliability have been verified in previous studies or verified by the researcher.

Regarding the analysis strategy, descriptive statistics, frequency distribution, and examination of reliability using Cronbach's alpha internal consistency were conducted on each variable. To investigate the hypotheses, a structural equation model (SEM) with bootstrapping was employed. Considering the relatively small sample size and the purpose of investigating the hypotheses, item parcels were used in SEM. In bootstrap estimation, resampling was conducted 2000 times to estimate the 95% confidence interval (CI) and significance level of the indirect path in the hypothesized model. An alternative model that reversed the path from adapting to adaptability was also specified to clarify the direction of the relationship between adapting and adaptability. The alternative model was also tested by SEM.

The study was approved by the Research Ethics Committee of the Graduate School of Medicine, the University of Tokyo (No. 2020417NI-(1)), and the Ethics Committee on Biomedical Research, West China Hospital of Sichuan University (No. 2021681).

5. Results

A total of 2249 student nurses in nine universities in China were recruited. After excluding unqualified responses, non-matching responses, and duplicated ID in Time 1 and Time 2, 262 responses from the nurse students were used for data analysis. Most of the participants (87.0%) were female. The mean age was 21.48 (SD = 1.07). Approximately half of the participants (53.4%) stated that nursing was not their first choice for studying. The participants have completed 18.08 (SD = 4.98) weeks of practicum and 5.31 (SD = 1.71) units for clinical learning on average.

The mean score of adaptability at Time 1 and Time 2 was 3.52 (SD = 0.70) and 3.64 (SD = 0.75), respectively. The score of the quality of clinical learning was 3.97 (SD = 0.63) on average, whereas the mean score of adapting was 3.36 (SD = 0.72). The Cronbach's coefficient alpha of all variables was above 0.75.

As the results of the hypothesized model in SEM show, the coefficient of the pathway from the quality of clinical learning at Time 2 to adapting at Time 2 was 0.26, whereas the coefficient of the pathway from adapting at Time 2 to adaptability at Time 2 was 0.33. All path coefficients in the model showed significance ($p < .001$). The fit indices of the hypothesized model were $\chi^2(86) = 239.46$ ($p < .001$), CFI = 0.94, RMSEA = 0.08, AIC = 307.45. According to the bootstrap estimation results, effect size of the indirect effect from the quality of clinical learning at Time 2 to adaptability at Time 2 was 0.08 ($p < .001$, 95% CI = 0.02–0.17). About the alternative model, the pathway from adaptability at Time 2 to adapting at Time 2 was significant ($\beta = 0.34$, $p < .001$). The fit indices of the alternative model were $\chi^2(86) = 249.11$ ($p < .001$), CFI = 0.94, RMSEA = 0.09, and AIC = 317. Compared to the alternative model, the hypothesized model showed lower values in RMSEA and AIC.

6. Discussion

Characteristics of the participants such as gender, age, and nursing as a first choice are consistent with previous studies and demographically typical of students in baccalaureate nursing programs in China. This indicates that the sampling in this study was appropriate. Moreover, this study guaranteed appropriate time intervals for investigating the change in adaptability. The mean score of career adaptability at Time 1 and Time 2 was relatively lower than that in previous studies. The mean score of adapting was relatively higher than that in previous studies. Regarding the quality of clinical learning experiences, although there is not much data in earlier studies that can be compared with this result, the mean score of SECEE in this study was higher than 3, which is the midpoint of the score range, indicating that the participants positively evaluated their clinical learning experiences.

The results of the SEM analyses showed that both the hypothesized and alternative models fitted the data well. This study found that the quality of clinical learning experiences had a direct positive effect on adapting, supporting Hypothesis 1. It has been reported that the quality of work experiences in internship positively affected adaptive behaviors in career. It is conceivable that similar to internship as a learning activity based on work experiences, the quality of clinical learning experiences would facilitate the adapting of student nurses. Although the relationships between each dimension of variables were not investigated, according to previous research, factors in

clinical learning such as preceptors' behaviors and variety of learning opportunities might facilitate students' adapting. Adapting could also affect the perceived quality of clinical learning experiences, because these two variables were measured simultaneously. However, considering that clinical learning reflected the experience gained in the past and adapting reflected the current status, the relationship between clinical learning and adapting is probably what this study explored.

Moreover, the results showed that clinical learning had an indirect positive effect on adaptability through adapting, as proposed in Hypothesis 2. However, the mechanism of the effects from adapting to adaptability—more broadly of the effects from the clinical learning to adaptability through adapting—needs further investigation. The initial level of adaptability has been controlled in the proposed model, indicating that nurse students would all benefit from high-quality clinical learning regardless of their initial level of adaptability. Considering that adapting and adaptability were measured simultaneously, it is possible that adapting may be affected by adaptability. This possibility was tested in the alternative model. Although the alternative model also fitted the data well and the pathway from adaptability to adapting was significant, the hypothesized model with lower RMSEA and AIC showed more fitness compared to the alternative model. Thus, the effect between adaptability and adapting is more likely from adapting to adaptability.

Taken together, the results indicated that the quality of clinical learning experiences may facilitate nursing students' adapting and adaptability by promoting adapting. The study had several limitations, including limited participants, use of self-reported measures, and a lack of awareness of control variables. Nevertheless, for nursing educators and nursing schools, these findings suggest that taking advantage of clinical learning and making effort to improve the quality of clinical learning through various methods such as providing training programs to clinical preceptors or instructors would enhance nursing students' career adaptation and help them attain positive outcomes in career and well-being.

7. Conclusion

This study indicated that high-quality clinical learning experiences may enhance students' adaptive behaviors in career, and this engagement in career adaptation would eventually improve their career adaptability. Many nursing students have found it is difficult to adapt to their career. Improving the quality of clinical learning would facilitate students' adaptive behaviors in career and their adaptability, and finally help them better adapt to their career. Moreover, it would also benefit nursing students in the long term, since career adaptability is a strength that enables coping with the developmental tasks or problems in career.