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Relationship among the nursing practice environment, occupational career, and work engagement of Chinese nurses employed in Japan: A cross-sectional study

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ABSTRACT

Background: Work engagement is a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption, and it affects the quality of care nurses give. Chinese nurses working in Japan experience differences in nursing practice and difficulties in career development. Therefore, the nursing practice environment and occupational career may affect their work engagement. However, little research has been completed on the factors affecting Chinese nurses' work engagement in Japan.

Objective: To clarify the relationship between the nursing practice environment, occupational career, and work engagement of Chinese nurses in Japan.

Design: A cross-sectional study.

Setting(s): Japanese hospitals (beds>19).

Participants: 149 Chinese nurses employed in Japan.

Methods: Using a cross-sectional study design, we mailed 640 paper questionnaires, which included a QR code for online responses, to 58 Japanese hospitals that employed Chinese nurses. A survey request form and internet address were sent to the WeChat app, where Chinese nurses in Japan communicate. The contents included attribute-related questions, the Nursing Practice Environment Scale, the Occupational Career Scale, and the Utrecht Work Engagement Scale. A multivariate analysis was conducted with nine adjustment factors, such as gender, educational background, and work engagement, as the dependent variables. The significance level was set at $p<.05$.

Results: Participants' average age was 28.4 years, and the average years of nursing in Japan was 3.8. The work engagement score was 3.09, which is the low-medium level. The nursing practice environment was positively associated with work engagement (β=0.46, 95 %CI=1.02,1.99, $p<.001$), with nurse participation in hospital affairs among the subscales having the strongest effect on work engagement (β=0.41, 95 %CI=0.68,1.49, $p<.001$). The occupational career score was also positively associated with work engagement (β=0.42, 95 %CI= 0.51,1.08, $p<.001$), and among the subscales, forming and coordinating interpersonal relationships had the most influence on participants' work engagement (β=0.39, 95 %CI=0.42,0.94, $p<.001$).

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Conclusions: Based on the results, we suggest that the work engagement of Chinese nurses could be enhanced by providing them with the same opportunities to train and improve their skills as Japanese nurses, as well as by helping them form relationships with patients and colleagues.

What is already known about the topic?

- Work engagement among nurses can promote quality of care and job satisfaction.
- Nurses working in countries other than their country of origin may experience discrimination in the workplace, lack career advancement, and have concerns regarding their quality of nursing care.
- The relationship among nursing practice environment, occupational career, and work engagement in nurses working in countries other than their country of origin is unknown.

What this paper adds

- Nursing practice environment and occupational career were significantly related to the work engagement of Chinese nurses employed in Japan.
- Within the nursing practice environment, nurses' participation in hospital affairs was strongly and significantly related to their work engagement.
- Within the occupational career, formation and coordination of interpersonal relationships were strongly and significantly associated with nurses' work engagement.

1. Introduction

Japan's 2006 Plan for Promoting Regulatory Reform and Opening to the Private Sector allowed nurses who had graduated abroad to appear for the Japanese National Nursing Examination through the Ministry of Health, Labour and Welfare's certification of eligibility. In 2008, Japan began accepting foreign nurse candidates under a bilateral Japan-Indonesia Economic Partnership Agreement, followed by the Japan-Philippines and Japan-Vietnam Economic Partnership Agreement in 2009 and 2014, respectively (Ministry of Health, Labour, and Welfare, 2019). Furthermore, private organizations also began employing nurses from China and other Asian countries through intermediaries (Kamimoto, 2013). For example, the Nurture Organization of International Medical Welfare Human Resource was established in 2012 and trains an average of 97 Chinese nurses working in Japan per year (What is the Nurture Organization of Human Resources, n.d.). However, the number of foreign workers with only a nursing-related qualification is unknown. According to residence status statistics from the Japanese Ministry of Justice, December 2018 'Medical,' the majority of the 1500 Chinese residents in Japan are employed as nurses (Ishikawa, 2019). Although the number of Chinese nurses working in Japan has been increasing, research on Chinese nurses employed in Japan is scarce.

Owing to differences in culture and nursing practice, Chinese nurses in Japan experience numerous difficulties in the workplace. Researchers previously revealed that Chinese nurses were confused about when to speak, even when they could speak Japanese (Bu, 2017). Additionally, Japanese nurses provided daily and medical care for patients, whereas in China, nurses relied on the patients' families to provide daily care, such as feeding and toilet assistance, and nurses provided medical care (Zhou, 2014). Therefore, Chinese nurses must adjust their perceptions of nursing roles while working in Japan. Further, nonverbal communication is a characteristic tendency in Japanese culture, especially in clinical situations. Nurses and medical staff, as well as the patients and their families, tend to "guess" the patients' feelings and thoughts without uttering a word (Ishigaki et al., 2008).

Chinese nurses who have difficulties in understanding Japanese find it even harder to understand this type of nonverbal communication (Lin, 2017). Thus, Chinese nurses are unable to form relationships with patients and colleagues and easily fall into isolation. Moreover, in Japanese culture, individuals pay more respect to seniority, hierarchy, and authority (Healee and Inada, 2016). Since Chinese nurses are unfamiliar with the culture, they experience problems in communicating with patients and colleagues. Prior research revealed that Chinese nurses expressed their thoughts to their preceptors directly when they thought that their preceptors had teaching issues and that this direct expression caused the Japanese preceptor to feel shocked and cry (Gong, 2020). These differences in communication style and culture may cause friction between Chinese nurses in Japan and their colleagues and patients. This friction also causes stress for these nurses.

Although the number of Chinese nurses working in Japan is increasing, research on their psychological conditions while working in Japan is lacking. Recent studies shifted their focus from psychological distress to positive emotions at work, especially on work engagement. Hence, we focused on work engagement, a positive psychological state, rather than a negative aspect, such as stress. Work engagement is defined as a positive work-related state of fulfillment that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2006). Work engagement influenced nurses' quality of care (Dong et al., 2020) and job satisfaction (Keyko et al., 2016), promoted innovative behaviors (Wang et al., 2019; Yang et al., 2019), and decreased turnover intentions (Cao and Chen, 2021; Wan et al., 2018a). From these studies, we inferred that increasing work engagement could benefit individual nurses and organizations as a whole. To identify the factors that enhance work engagement, identifying the potentially modifiable factors that stimulate work

engagement is essential.

Work engagement has previously been studied within the paradigm of job demands-resources theory (Bakker and Demerouti, 2007; Keyko et al., 2016). According to this theory, job resources initiate a motivational process leading to work engagement (Bakker and Demerouti, 2008). Personal resources, such as self-efficacy, self-esteem, and optimism (Hakanen and Roodt, 2010) are also independent predictors of work engagement (Bakker and Demerouti, 2008). In other words, employees who experience rich job and personal resources are highly-engaged in their work and display positive work behaviors.

Job resources can potentially increase motivation, help achieve organizational goals, and address work demands (Bakker, 2011). The nursing practice environment, a characteristic of an organization related to the work environment, may facilitate or inhibit nursing practice. Hence, it is considered a job resource. Additionally, searching for a better working environment is an important reason for nurses to migrate to other countries (Roth et al., 2021; Zhou et al., 2016). We focused on the nursing practice environment related to work resources based on the needs of nurses working in countries other than their country of origin. Researchers have found that a supportive work environment helps foreign nurses adapt to the nursing practices in the host country (Primeau et al., 2021). Therefore, we hypothesized that the nursing practice environment affects Chinese nurses' work engagement in Japan.

Personal resources were defined as positive self-evaluations associated with the ability and resilience to successfully control one's environment (Hobfoll et al., 2003). Regarding personal resources, we focused on occupational career, defining it as the competence, experience, and position that nurses accumulated in clinical settings (Ishii et al., 2005). The longer the occupational career, the more likely the nurse was to have better control over their work and positive self-evaluations. Positive self-evaluations were also associated with higher work engagement. Therefore, we believed that occupational career was related to work engagement. We focused on occupational career, as career advancement was a factor that caused nurses to migrate to other countries (Roth et al., 2021; Zhou et al., 2016) and decide whether to continue working in host countries (Villamin et al., 2023). However, many nurses working in countries other than their country of origin encounter challenges in advancing their careers within the host country (Smith et al., 2022), leading to the deterioration of any previously-acquired advanced nursing skills (Adhikari and Melia, 2015; Kurniati et al., 2017). Research is lacking on the relationship between career development and work engagement, and clarifying this relationship will help build evidence supporting the occupational career of Chinese nurses in Japan and foreign nurses in other countries. Therefore, we aimed to clarify the relationship among the nursing practice environment, occupational career, and work engagement of Chinese nurses who work in Japan.

The hypotheses were as follows:

- H1: The nursing practice environment of Chinese nurses working in Japan is positively associated with their work engagement.
- H2: Chinese nurses' occupational career in Japan is positively associated with their work engagement.

2. Methods

2.1. Study design

A cross-sectional design through a self-report questionnaire was used. Cross-sectional studies are characterized by relevant data collection at a given timepoint (Kesmodel, 2018). Since this study investigated the relationship among the nursing practice environment, occupational career, and work engagement, this research design was suitable.

2.2. Recruitment and data collection

Determining which medical institutions employ Chinese nurses in Japan was difficult. Therefore, we recruited as many participants as possible. Participants were recruited using the following methods: 1) A total of 640 research request forms and questionnaires enclosed with return envelopes were mailed to 58 Japanese hospitals that employed Chinese nurses based on information from the internet and books on foreign medical tourism. The paper version contained a QR code that was linked to the online questionnaire. 2) A questionnaire request form and URL were sent to a WeChat group of Chinese nurses in Japan who were invited to respond. 3) Snowball sampling was used; participants were asked to pass the survey URL to other Chinese nurses they knew.

To preclude duplicate responses, participants were requested to provide their date of birth and county of origin (county-level administrative divisions, which approximate 2800 in total across China). Regarding the validity of the questionnaire, we asked five Chinese nurses working in hospitals in Japan to answer the questionnaire in advance to see if the content was understandable and easy to answer. These five nurses were excluded from the data, but their responses confirmed that there was nothing incomprehensible about the questionnaire.

The paper-based and online surveys had the same content and were conducted simultaneously between June and July 2021.

2.3. Participants

Inclusion criteria were nurses born and raised in China until high school, having a nursing degree in China or Japan, and employed as registered nurses (a national qualification) or assistant nurses (the license for which is granted by prefectural governors) in Japanese hospitals.

Exclusion criteria were nurses born and raised in China until high school and having a nursing degree in China or Japan but working in Japanese non-hospital settings, such as clinics, long-term care facilities, and nursing homes.

The paper questionnaire had 29 respondents, and the online questionnaire was clicked 407 times. We excluded seven duplicate questionnaires, 10 questionnaires that met the exclusion criteria, 131 questionnaires with a 95 % non-response rate, 82 questionnaires with a 48.2 %–95.0 % non-response rate, seven questionnaires with a 42.1 %–48.2 % non-response rate, and 50 questionnaires with an 8.0 % or less non-response rate. Ultimately, 149 were included in the analysis. No significant differences were found between the data of the 149 included questionnaires and the 50 excluded questionnaires with an 8.0 % or less non-response rate, in terms of gender, age, or years of nursing experience.

2.4. Measures

Participants were nurses who worked in Japanese hospitals with sufficient Japanese language skills to complete a questionnaire. Furthermore, the Japanese version of the Practice Environment Scale of the Nursing Work Index was found to be appropriate to measure nursing practice environments in Japanese hospitals. Therefore, the questionnaire was administered in Japanese.

2.4.1. Demographics characteristics

Demographic characteristics included participants' gender, age, highest level of nursing education, cohabitants (spouse/partner, children), country of nursing education, whether they passed the N1 level of the Japanese Language Proficiency Test (i.e., the level indicating that they understand Japanese in a wide range of situations), years of nursing experience in Japan and China, years working in the current ward, type of shift work, nursing qualifications, number of beds in the current hospital, and satisfaction with salary (options were satisfied, somewhat satisfied, somewhat unsatisfied, or unsatisfied).

2.4.2. The nursing practice environment

The Practice Environment Scale of the Nursing Work Index was used to assess the professional nursing practice environments. This scale was developed by Lake (2002) and translated into Japanese by Ogata et al. (2008). The Japanese version comprises 31 items. Nurses indicate the extent to which certain work environment attributes are present in their current jobs on a 4-point Likert scale that ranges from 1 (strongly disagree) to 4 (strongly agree). Higher scores indicate increased support for professional nursing practices in the work environment. The scale consists of five subscales: nurse participation in hospital affairs (nine items); nursing foundations for quality of care (10 items); nurse manager ability, leadership, and support (five items); staffing and resource adequacy (four items); and collegial nurse–physician relations (three items). The Japanese version has demonstrated both acceptable validity and reliability (Cronbach's α=0.79) (Ogata et al., 2018). In the current study, the nursing practice environment demonstrated high internal reliability for the composite score (Cronbach's α=0.81). Permission to use the instrument was granted by the original authors.

2.4.3. Occupational career

Occupational career was assessed using the Nursing Career Assessment Scale, developed by Ishii et al. (2005). This scale has demonstrated both good validity and reliability (Cronbach's α=0.88–0.91) (Tsuruta et al., 2007). It also demonstrated high internal reliability in the current study (Cronbach's α =0.80). This scale assesses the exploration and acquisition of professional practices and human relations skills. It consists of four subscales: practicing and pursuing quality nursing (17 items); forming and coordinating interpersonal relationships (12 items); self-development (seven items); and accumulating a variety of experiences (seven items). The items are rated on a 5-point Likert scale (1 = disagree to 5 = agree). Permission to use the instrument was granted by the original authors.

2.4.4. Work engagement

Work engagement was measured using the Utrecht Work Engagement Scale, developed by Schaufeli et al. (2006) and translated into Japanese by Shimazu et al. (2008). The Japanese version consists of three subscales–vigor, dedication, and absorption–with three items for each subscale. Responses are rated on a 7-point Likert scale that ranges from 0 (never) to 6 (always). Higher scores indicate greater work engagement. The Japanese version has demonstrated acceptable internal consistency, reliability, and construct validity (Cronbach's α >0.90) (Shimazu et al., 2008). It also demonstrated high internal reliability for the composite scores in this study (Cronbach's α =0.93).

2.5. Ethical considerations

The request letter and document were either distributed to all the participants or sent via a link in WeChat. The document explained the study's outline, ensured anonymity and protection of privacy, and stated that cooperation was voluntary and that individuals would not be disadvantaged by refusing cooperation. Participants provided consent by checking a box indicating that they agreed to participate in the study before answering the questionnaire. This study was approved by Osaka university Ethics Review Committee (Approval No. 20,586–2).

2.6. Analytical methods

An analysis was conducted using descriptive statistics, and the internal consistency of each scale score was determined via Cronbach's alpha coefficients. To analyze the association between nursing practice environment and work engagement, standard partial regression coefficients and 95 % confidence intervals (CIs) were estimated using linear multiple regression analysis models with

work engagement as the dependent variable. Multivariate analysis was adjusted for gender, highest level of nursing education, living with children, years of nursing experience in Japan, shift format, type of employment, qualifications, number of hospital beds, and satisfaction with salary. Independent variables in the multivariate regression analysis were screened for multicollinearity between previous findings and explanatory factors. Additionally, we analyzed the relationship between the composite scores of the nursing practice environment and each subscale and work engagement; this was accomplished by entering the composite scores of the adjustment factor and the Nursing Practice Environment Scale, as well as the composite scores of the adjustment factor and one nursing practice environment subscale, into the analytical model. The same method was used for the occupational career. This study used complete data and had no missing data.

JMP Pro16 statistical analysis software was used for data analysis and statistical procedures. Significance was set at $p < .05$.

3. Results

Table 1 shows the characteristics of the participants. More than 90 % of the participants were women, and more than 70 % had a bachelor's degree or higher. Participants' average age and number of years of nursing experience in Japan were 28.4 and 3.8, respectively. More than 90 % were registered nurses and completed their nursing education in China.

Participants' work engagement score was at the low-medium level. Table 2 shows the scores of the other variables. The nursing practice environment was positively associated with work engagement. Among the subscales, nurses' participation in hospital affairs had the strongest influence on work engagement. Further details are presented in Table 3. Occupational career was positively associated with work engagement. Among the subscales, formation and coordination of interpersonal relationships strongly affected work engagement. Further details are presented in Table 4.

Table 1
Socio-demographics characteristics of study participants ($N = 149$).

Characteristics	Mean (SD)	Range
Age	28.4(3.7)	22–47
Years of nursing experience in Japan	3.8(2.4)	0–12
Years of nursing experience in current department	2.6(1.9)	0–8
	n	%
Gender		
Women	138	92.6
Men	11	7.4
Highest level of nursing education		
Diploma(non-university)	40	26.8
Bachelor or higher	109	73.2
Cohabit with spouse/partner		
Yes	48	32.2
No	101	67.8
Cohabit with children		
Yes	24	16.1
No	125	83.9
Country of basic nursing education		
China	147	98.7
Japan	2	1.3
Japanese-language proficiency test N1*		
Qualified	148	99.3
Untested	1	0.7
Nursing experience of China		
Yes	26	17.4
No	123	82.6
Shift format		
Shift system	127	85.2
Day shift	22	14.8
Type of employment		
Full-time employment	144	96.6
Part-time employment	5	3.4
Qualification		
Registered nurses	142	95.3
Assistant nurses (=Licensed practical nurses [LPN])	7	4.7
Number of beds		
19–399 beds	108	72.5
≥400 beds	41	27.5
Satisfaction with salary		
Yes	76	51.0
No	73	49.0

n: Number of participants.
SD: Standard Deviation.
* Japanese-language proficiency test N1 level: Understand Japanese used in a wide range of situations.

Table 2
Scores of study variables ($N = 149$).

The nursing practice environment	Mean	SD	Possible Range
Composite score	2.73	0.35	1–4
Nurse participation in hospital affairs	2.61	0.43	1–4
Nursing foundations for quality of care	2.81	0.38	1–4
Nurse manager ability, leadership, and support of nurses	2.84	0.42	1–4
Staffing and resource adequacy	2.54	0.46	1–4
Collegial nurse–physician relations	2.86	0.53	1–4
Occupational career	3.50	0.59	1–5
Practicing and pursuing quality nursing	3.96	0.61	1–5
Forming and coordinating interpersonal relationships	3.80	0.65	1–5
Self-development	2.58	0.97	1–5
Accumulating a variety of experiences	2.75	0.90	1–5
Work engagement	3.09	1.13	0–6
Vigor	3.02	1.19	0–6
Dedication	3.31	1.19	0–6
Absorption	2.93	1.25	0–6

N: Number of participants.
SD: Standard Deviation.

Table 3
Association between the nursing practice environment and work engagement β(95%CI) $N = 149$.

	Model 1	Model 1–1	Model 1–2	Model 1–3	Model 1–4	Model 1–5
Female vs Male	−0.08, (−0.48,0.12)	−0.08, (−0.48,0.15)	−0.04, (−0.39,0.23)	−0.04, (−0.40,0.22)	−0.02, (−0.37,0.27)	−0.05, (−0.44,0.21)
Diploma vs Bachelor or higher	0.09, (−0.06,0.30)	0.10, (−0.06,0.31)	0.14 (−0.00,0.37)	0.13, (−0.03,0.35)	0.14, (−0.02,0.37)	0.16,(0.02,0.40)*
Living with children (No vs Yes)	−0.21, (−0.56, −0.08) **	−0.18, (−0.53,−0.03)*	−0.26(−0.64, −0.15) **	−0.21, (−0.57, −0.07) *	−0.23, (−0.61,−0.10)**	−0.23, (−0.61, −0.10) **
Years of nursing experience in Japan(Continuous value)	−0.01, (−0.08,0.07)	−0.00, (−0.08,0.08)	−0.03, (−0.10,0.06)	−0.01, (−0.08,0.08)	−0.04, (−0.10,0.06)	−0.04, (−0.10,0.06)
Shift format (Shift system vs Day shift)	−0.13, (−0.08,0.07)	−0.15, (−0.47,0.01)	−0.18(−0.52, −0.04) *	−0.14, (−0.46,0.02)	−0.13, (−0.46,0.05)	−0.15, (−0.49,0.02)
Type of employment(Full-time vs Part-time employment)	0.04, (−0.33,0.59)	0.03, (−0.39,0.56)	0.03, (−0.38,0.58)	0.01, (−0.46,0.51)	0.01, (−0.45,0.54)	0.06, (−0.30,0.70)
Qualification (Registered vs Licensed practical nurses)	−0.01 (−0.40,0.34)	−0.04, (−0.48,0.28)	−0.01, (−0.47,0.30)	−0.04, (−0.50,0.28)	0.02, (−0.36,0.45)	−0.02, (−0.46,0.34)
Satisfaction with salary(Yes vs No)	0.11 (−0.03,0.29)	0.14, (−0.01,0.32)	0.14, (−0.01,0.32)	0.15, (0.01,0.34) *	0.17, (0.02,0.36) *	0.18,(0.04,0.37)*
Number of beds (19–399 beds vs ≥ 400 beds)	0.07, (−0.09,0.28)	0.09 (−0.07,0.31)	0.08, (−0.08,0.29)	0.05, (−0.12,0.26)	0.01, (−0.18,0.22)	0.07, (−0.11,0.28)
PES-NWI Composite score	**0.46(1.02,1.99)** ***	—	—	—	—	—
Nurse participation in hospital affairs	—	**0.41(0.68,1.49)** ***	—	—	—	—
Nursing foundations for quality of care	—	—	**0.37(0.65,1.53)** ***	—	—	—
Nurse manager ability, leadership, and support of nurses	—	—	—	**0.36(0.57,1.37)** ***	—	—
Staffing and resource adequacy	—	—	—	—	**0.30(0.36,1.12)** ***	—
Collegial nurse–physician relations	—	—	—	—	—	**0.29 (0.29,0.95)*****

N: Number of participants.
PES-NWI: Practice Environment Scale of the Nursing Work Index.
Model 1: composite score of the Nursing Practice Environment and the adjustment factors.
Model 1–1: nurse participation in hospital affairs of the Nursing Practice Environment subscale and the adjustment factors.
Model 1–2: nursing foundations for quality of care of the Nursing Practice Environment subscale and the adjustment factors.
Model 1–3: nurse manager ability, leadership, and support of nurses of the Nursing Practice Environment subscale and the adjustment factors. .
Model 1–4: staffing and resource adequacy of the Nursing Practice Environment subscale and the adjustment factors.
Model 1–5: collegial nurse–physician relations of the Nursing Practice Environment subscale and the adjustment factors.
* $p<.05$.
** $p<.01$.
*** $p<.001$. β: regression coefficient. 95 % CI: 95 % confidence interval.

4. Discussion

We found that the nursing practice environment and occupational careers of Chinese nurses in Japan were positively associated with work engagement. Based on these results, we suggest that improving perceived nursing practice environments and promoting occupational career development can enhance work engagement.

4.1. Relationship between nursing practice environment and work engagement

The positive association between the nursing practice environment and work engagement in the present study was consistent with the findings of previous researchers, where participants were Chinese nurses working in China (Cheng et al., 2020; Huang et al., 2020; Li et al., 2019; Wan et al., 2018b; Wang and Liu, 2015). This suggests that improving the nursing practice environment could help Chinese nurses employed in Japan enhance their work engagement.

Among the nursing practice environment subscales, participation in hospital affairs strongly influenced Chinese nurses' work engagement. This subscale includes opportunities for career advancement and promotion, and staff nurses have opportunities to serve on committees and are also involved in hospital-wide management, such as committees on nursing practices and policies. This result was consistent with those of previous studies on Chinese nurses working in China (Huang et al., 2020; Wan et al., 2018). These data imply that providing opportunities for career advancement, promotion, and involvement in hospital-wide operations enhances participants' work engagement. However, previous studies on Chinese nurses working in Japan reported that they experienced issues, such as not having the same opportunities to participate in in-hospital training, as Japanese nurses (Tuo et al., 2021) and also experienced difficulties in professional development and career advancement (Gong, 2020). Based on these results, we suggest that hospitals should support the participation of Chinese nurses in training seminars and conferences and provide them with the same training and promotion opportunities as their counterparts to enhance their work engagement. Furthermore, researchers have linked increased work engagement in nurses to improved quality of nursing care (Dong et al., 2020). Therefore, improvements in Chinese nurses' work engagement could improve the quality of their care.

Additionally, numerous researchers have indicated that nurses who work in countries other than their country of origin have fewer opportunities for career advancement and promotions (Primeau et al., 2014; Salami et al., 2018; Timilsina Bhandari et al., 2015; Xiao et al., 2014). Based on the results of the present study, we suggest that not providing career advancement and promotional

Table 4
Association between occupational career and work engagement β(95%CI) $N = 149$.

	Model 2	Model 2−1	Model 2−2	Model 2−3	Model 2−4
Female vs Male	0.01, (−0.28,0.32)	−0.02, (−0.34,0.27)	−0.00, (−0.31,0.30)	0.03, (−0.25,0.40)	0.02, (−0.29,0.36)
Diploma vs Bachelor or higher	0.16, (0.03,0.39) *	0.17, (0.03,0.39) *	0.16,(0.02,0.39)*	0.18, (0.04,0.42)*	0.19, (0.05,0.43) *
Living with children (No vs Yes)	−0.18, (−0.53, −0.04) *	−0.21, (−0.57, −0.08) *	−0.18, (−0.52,−0.02)*	−0.22, (−0.60, −0.08) *	−0.21, (−0.59, −0.06) *
Years of nursing experience in Japan (Continuous value)	−0.15, (−0.15,0.01)	−0.09, (−0.12,0.04)	−0.12, (−0.14,0.02)	−0.09, (−0.12,0.04)	−0.15, (−0.16,0.02)
Shift format (Shift system vs Day shift)	−0.13, (−0.45,0.03)	−0.13, (−0.45,0.04)	−0.12, (−0.44,0.05)	−0.16, (−0.50,0.00)	−0.17, (−0.52, −0.00) *
Type of employment(Full-time vs Part-time employment)	0.02, (−0.41,0.54)	0.02, (−0.41,0.54)	0.03, (−0.39,0.56)	0.02, (−0.44,0.56)	0.01, (−0.48,0.54)
Qualification (Registered nurses vs Licensed practical nurses)	0.03, (−0.30,0.47)	−0.01, (−0.40,0.37)	−0.00, (−0.39,0.37)	0.02, (−0.36,0.45)	0.02, (−0.37,0.48)
Satisfaction with salary(Yes vs No)	0.22, (0.09,0.40) **	0.21,(0.07,0.39)**	0.23, (0.10,0.42)**	0.21, (0.07,0.40)**	0.22, (0.08,0.42) **
Number of beds (19–399 beds vs ≥ 400 beds)	0.04, (−0.13,0.24)	0.02, (−0.16,0.22)	0.02, (−0.16,0.22)	0.06, (−0.12,0.27)	0.05, (−0.13,0.27)
Occupational career	**0.42, (0.51,1.08)** ***	—	—	—	—
Practicing and pursuing quality nursing	—	**0.38, (0.44,0.97)****	—	—	—
Forming and coordinating interpersonal relationships	—	—	**0.39, (0.42,0.94)****	—	—
Self-development	—	—	—	**0.27, (0.14,0.49)****	—
Accumulating a variety of experiences	—	—	—	—	**0.24, (0.08,0.52)****

N: Number of participants.
Model 2: occupational career score and adjustment factors. .
Model 2–1: practicing and pursuing quality nursing of the Occupational career subscale and adjustment factors.
Model 2–2: forming and coordinating interpersonal relationships of Occupational career subscale and adjustment factors.
Model 2–3: self-development of Occupational career subscale and adjustment factors.
Model 2–4: accumulating a variety of experiences of Occupational career subscale and adjustment factors.
* $p<.05$
** $p<.01$
*** $p<.001$. β: regression coefficient. 95 % CI: 95 % confidence interval.

opportunities may affect the work engagement of immigrant and foreign nurses. Since work engagement is related to nursing care quality (Dong et al., 2020), decreased work engagement is likely to lead to decreased quality of care. Therefore, providing career advancement and promotion opportunities for Chinese nurses in Japan and foreign nurses in other countries could facilitate their career development and enhance their nursing care quality.

4.2. Relationship between occupational career and work engagement

From this study, we found a positive association between occupational career and work engagement. To the best of our knowledge, there are no previous studies on the association between these two factors. However, researchers in a similar study showed that job control was positively correlated with work engagement (Spence Laschinger et al., 2012). These data suggest that providing support in forming an occupational career could enhance the work engagement of Chinese nurses employed in Japan.

Among the occupational career subscales, the formation and coordination of interpersonal relationships had the strongest influence on work engagement. Therefore, we focused on this. According to Ishii et al. (2005), the formation and coordination of interpersonal relationships indicate the formation of relationships between patients and multidisciplinary professionals. In a previous study, interpersonal support was positively and significantly associated with nurses' work engagement (Boakye et al., 2021). Additionally, a good relationship between nursing managers and supervisors positively and significantly influenced nursing managers' work engagement (Warshawsky et al., 2012). Our results are consistent with these findings. These data suggest that supporting Chinese nurses to form relationships with their patients and colleagues may enhance their work engagement.

According to prior research, Chinese nurses need help to form relationships with patients and colleagues based on their understanding of Japanese culture and its respect for seniority, hierarchy, and authority (Bu, 2017). Furthermore, Japanese preceptors felt that Chinese nurses were direct and did not bend easily (Ishihara, 2016). Additionally, Chinese nurses were aware that many of their ideas and modes of expression differed from those of Japanese nurses (Bu, 2017). Due to differences in interactional attitudes, Chinese nurses considered these as obstacles in their interactions with Japanese colleagues and patients. Furthermore, in Japanese clinical practice, nonverbal communication is often used (Iwawaki and Takishita, 2007). Nonverbal communication was challenging for foreign nurses, and their language was inadequate for developing and sustaining good collegial relationships with nurses in the host country (Zhou et al., 2011). Hence, support should be provided to Chinese nurses working in Japan to express the interpersonal culture of their home country, and Japanese nurses who work with them should understand this cultural difference. Moreover, Japanese nurses must teach Chinese nurses Japanese customs and behaviors and help them learn. Additionally, hospital administrators would benefit from teaching Chinese nurses about workplace culture and ways to interact with their colleagues. In a study of Korean nurses who worked in the United States of America, it took them 5 to 10 years to adapt to the American style of relationships (Yi and Jezewski, 2000). Our participants had been working in Japan for approximately 4 years, and their ability to interact with work colleagues in the Japanese style was still in the process of being formed. Therefore, long-term support is necessary.

Previous researchers demonstrated that immigrant and foreign nurses had estranged relationships with their colleagues owing to their inability to integrate into daily conversations (Viken et al., 2018; Zhong et al., 2023). Based on the results of this study, relationship formation with colleagues and patients may affect nurses' work engagement in countries other than their country of origin. Based on this finding, we suggested that host-country hospital administrators should support forming relationships between foreign and non-foreign nurses. Forming good relationships with nurses in the host country may increase work engagement and continued employment of Chinese nurses in Japan and foreign nurses in other countries.

4.3. Strengths and limitations

This study found that the nursing practice environments and occupational careers of Chinese nurses working in Japanese hospitals were positively associated with work engagement. Furthermore, we suggest that improvements in participants' perceived nursing practice environment and support for formulating an occupational career can enhance their work engagement. In the future, it will be necessary to seek methods for promoting the formation of relationships between foreign nurses, including Chinese nurses, and their Japanese colleagues and patients. However, this study was cross-sectional, and a causal relationship among the nursing practice environment, occupational career, and work engagement could not be established. Furthermore, participants self-reported as Chinese nurses working in Japan, but this was not verified, nor were they randomly selected, which may limit generalizability. Moreover, some participants may have stopped answering the questions as they felt overwhelmed by the large number, even though consideration was given to ensure that participants completed the questionnaire in approximately 15 min without placing too much burden on them. Once a survey was opened and a question was answered, the data were automatically saved. Therefore, even if a person failed to answer a question, it was counted as a response, which may have resulted in many incomplete surveys. Lastly, although all participants achieved the highest level in the Japanese Language Proficiency Test, we could not guarantee that there were no errors in their understanding.

4.4. Implications for practice

The nursing practice environment and occupational career were significantly positively associated with participants' work engagement. Based on these results, we suggest that improvement of the perceived nursing practice environment and support for the occupational career development of Chinese nurses could enhance their work engagement. Specifically, providing Chinese nurses with the same opportunities to participate in in-hospital training and promotions and to be involved in a variety of hospital tasks similar to

those of Japanese nurses may be an effective means of increasing work engagement. Furthermore, supporting the formation of relationships between Chinese nurses and their patients and colleagues may also prove highly effective. In terms of concrete measures, it is important for hospital administrators to create a workplace atmosphere that recognizes diversity, whether Japanese or non-Japanese. In addition, it would be beneficial to hold seminars to promote multicultural understanding in the workplace and forming relationships with people from different cultures.

5. Conclusion

This study aimed to clarify the relationship among the nursing practice environment, occupational career, and work engagement of Chinese nurses who work in Japan. The nursing practice environment and occupational career were positively associated with work engagement. Based on our findings, we suggest that hospital administrators providing Chinese nurses with the same opportunities for in-hospital training, career advancement, and promotion as Japanese nurses may enhance their work engagement. Additionally, supporting the relationships between Chinese nurses working in Japan and their patients and colleagues also has the potential to increase their work engagement. These results provide direction for support measures to enhance the work engagement of Chinese nurses in Japan. Future research should focus on methods to facilitate the formation of relationships between foreign nurses, including Chinese nurses working in Japan, and their Japanese colleagues and patients. Furthermore, we intend to conduct and report the combined impact of the nursing practice environment and occupational career on work engagement through further analysis.

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Availability of data and materials

Data supporting the findings of this study are available upon request from the corresponding authors. However, these data are not publicly available owing to privacy or ethical restrictions.

CRediT authorship contribution statement

Yuchun Yang: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing. **Kaori Hatanaka:** Formal analysis, Data curation, Writing – review & editing, Supervision. **Kei Takahashi:** Conceptualization, Methodology, Data curation, Writing – review & editing, Supervision. **Yasuko Shimizu:** Conceptualization, Methodology, Formal analysis, Data curation, Writing – review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

Adhikari, R., Melia, K.M., 2015. The (mis)management of migrant nurses in the UK: a sociological study. J. Nurs. Manage. 23 (3), 359–367. https://doi.org/10.1111/jonm.12141.

Bakker, A.B., Demerouti, E., 2007. The job demands-resources model: state of the art. J. Manag. Psychol. 22, 309–328. https://doi.org/10.1108/02683940710733115.

Bakker, A.B., Demerouti, E., 2008. Towards a model of work engagement. Career Develop. Int. 13 (3), 209–223. https://doi.org/10.1108/13620430810870476.

Bakker, A.B., 2011. An Evidence-Based Model of Work Engagement. Curr. Dir. Psychol. Sci. 20 (4), 265–269. https://doi.org/10.1177/0963721411414534.

Boakye, K.G., Apenteng, B.A., Hanna, M.D., Kimsey, L., Mase, W.A., Opoku, S.T., Owens, C., Peden, A., 2021. The impact of interpersonal support, supervisory support, and employee engagement on employee turnover intentions: differences between financially distressed and highly financially distressed hospitals. Health Care Manage. Rev. 46 (2), 135–144. https://doi.org/10.1097/HMR.0000000000000251.

Bu, Y., 2017. Intercultural Adaptation Issues of Chinese nurses in Japan: An analysis of the Investigation Data of a Hospital Working Environment, 51. Shukutoku University Bulletin, pp. 117–130 in Japanese.

Cao, X., Chen, L., 2021. Relationships between resilience, empathy, compassion fatigue, work engagement and turnover intention in haemodialysis nurses: a cross-sectional study. J. Nurs. Manage. 29 (5), 1054–1063. https://doi.org/10.1111/jonm.13243.

Cheng, H., Yang, H., Ding, Y., Wang, B., 2020. Nurses' mental health and patient safety: an extension of the Job Demands–Resources model. J. Nurs. Manage. 28 (3), 653–663. https://doi.org/10.1111/jonm.12971.

Dong, X., Lu, H., Wang, L., Zhang, Y., Chen, J., Li, B., Huang, X., Wan, Q., Dong, S., Shang, S., 2020. The effects of job characteristics, organizational justice and work engagement on nursing care quality in China: a mediated effects analysis. J. Nurs. Manage. 28 (3), 559–566. https://doi.org/10.1111/jonm.12957.

Gong, J., 2020. Life story of a Chinese nurse in Japan from the viewpoint of LPP theory -focusing on participation in the community of nursing practice-. Chiba University Graduate School Human. Study Public Affairs Res. Project Reports 17, 15–32 in Japanese.

Hakanen, J.J., Roodt, G., 2010. Using the job demands-resources model to predict engagement: analyzing a conceptual model. In: Bakker, A.B., Leiter, M.P (Eds.), Work Engagement: A Handbook of Essential Theory and Research. Psychology Press, New York, NY, pp. 85–101.
Healee, D., Inada, K., 2016. Working with difference: thematic concepts of Japanese nurses working in New Zealand: working with difference. Nurs. Health Sci. 18 (1), 91–96. https://doi.org/10.1111/nhs.12246.
Hobfoll, S.E., Johnson, R.J., Ennis, N., Jackson, A.P., 2003. Resource loss, resource gain, and emotional outcomes among inner city women. J. Pers. Soc. Psychol. 84 (3), 632–643. https://doi.org/10.1037/0022-3514.84.3.632.
Huang, X., Wang, L., Dong, X., Li, B., Wan, Q., 2020. Effects of nursing work environment on work-related outcomes among psychiatric nurses: a mediating model. J. Psychiatr. Ment. Health Nurs. 28 (2), 186–196. https://doi.org/10.1111/jpm.12665.
Ishigaki, K., Mochizuki, Y., Masaki, H., Miyazaki, M., 2008. COE Final Report: chiba University. Japan J. Nurs. Sci. 5 (2), 131–136. https://doi.org/10.1111/j.1742-7924.2008.00109.x.
Ishihara, M., 2016. Culture shock with Chinese nurses and Japanese preceptors. J. Rehab. Network Res. 14 (1), 69–72 in Japanese.
Ishii, K., Fujiwara, C., Hoshi, K., Takaya, Y., Kawakami, C., Nishimura, A., et al., 2005. Development of the nursing career assessment scale and to evaluate its reliability and validity. J. Japan Soc. Nurs. Res. 28, 21–30 in Japanese.
Ishikawa, Y., 2019. What is needed in the era of working with foreign nurses. RONZA. Retrieved October 5, 2023, from. https://webronza.asahi.com/politics/articles/2019082300005.html. in Japanese.
Iwawaki, Y., Takishita, Y., 2007. The Characteristics of Communication Skills of Nurses in Nursing Practice – An analysis of nurse's communication using the Behavior Coding System-. J. Japan Acad. Nursing Educ. 16 (3), 1–11 in Japanese.
Kamimoto, A. (2013). Chinese nurses are rapidly increasing. Retrieved June 06, 2023, from https://www.imaid.or.jp/images/130521b.pdf (in Japanese).
Kesmodel, U.S., 2018. Cross-sectional studies - what are they good for? Acta Obstet. Gynecol. Scand. 97 (4), 388–393. https://doi.org/10.1111/aogs.13331.
Keyko, K., Cummings, G.G., Yonge, O., Wong, C.A., 2016. Work engagement in professional nursing practice: a systematic review. Int. J. Nurs. Stud. 61, 142–164. https://doi.org/10.1016/j.ijnurstu.2016.06.003.
Kurniati, A., Chen, C.-M., Efendi, F., Ogawa, R., 2017. A deskilling and challenging journey: the lived experience of Indonesian nurse returnees. Int. Nurs. Rev. 64 (4), 494–501. https://doi.org/10.1111/inr.12352.
Lake, E.T., 2002. Development of the practice environment scale of the nursing work index. Res. Nurs. Health 25 (3), 176–188. https://doi.org/10.1002/nur.10032.
Li, B., Li, Z., Wan, Q., 2019. Effects of work practice environment, work engagement and work pressure on turnover intention among community health nurses: mediated moderation model. J. Adv. Nurs. 75 (12), 3485–3494. https://doi.org/10.1111/jan.14130.
Lin, L., 2017. Current Situation of Acceptance of Chinese nurses (candidates) - overview of Acceptance and Focus On Japanese language Support and Japanese language Issues, 40. Nara University of Education Japanese Literature: Research and Education, pp. 45–60 in Japanese.
Ministry of Health, Labour, and Welfare, 2019. Acceptance of foreign nurse candidates and care worker candidates based on Economic Partnership Agreement. Ministry of Health, Labour, and Welfare Japan in JapaneseRetrieved June 06, 2023, from. https://www.mhlw.go.jp/content/000639886.pdf. in Japanese.
Ogata, Y., Nagano, M., Akanuma, T., 2008. Translating "the practice environment scale of the nursing work index (PES-NWI)" into Japanese. J. School Nursing, Chiba Univ. 30, 19–24 in Japanese.
Ogata, Y., Sasaki, M., Yumoto, Y., Yonekura, Y., Nagano, M., Kanda, K., 2018. Reliability and validity of the practice environment scale of the nursing work index for Japanese hospital nurses. Nursing Open 5 (3), 362–369. https://doi.org/10.1002/nop2.148.
Primeau, M.-D., Champagne, F., Lavoie-Tremblay, M., 2014. Foreign-trained nurses' experiences and socioprofessional integration best practices: an integrative literature review. Health Care Manag. (Frederick) 33 (3), 245–253. https://doi.org/10.1097/HCM.0000000000000018.
Primeau, M.-D., St-Pierre, I., Ortmann, J., Kilpatrick, K., Covell, C.L., 2021. Correlates of career satisfaction in internationally educated nurses: a cross-sectional survey-based study. Int. J. Nurs. Stud. 117, 103899 https://doi.org/10.1016/j.ijnurstu.2021.103899.
Roth, C., Berger, S., Krug, K., Mahler, C., Wensing, M., 2021. Internationally trained nurses and host nurses' perceptions of safety culture, work-life-balance, burnout, and job demand during workplace integration: a cross-sectional study. BMC Nurs 20 (1), 77. https://doi.org/10.1186/s12912-021-00581-8.
Salami, B., Meherali, S., Covell, C.L., 2018. Downward occupational mobility of baccalaureate-prepared, internationally educated nurses to licensed practical nurses. Int. Nurs. Rev. 65 (2), 173–181. https://doi.org/10.1111/inr.12400.
Schaufeli, W.B., Bakker, A.B., Salanova, M., 2006. The measurement of work engagement with a short questionnaire: a cross-national study. Educ. Psychol. Meas 66 (4), 701–716. https://doi.org/10.1177/0013164405282471.
Shimazu, A., Schaufeli, W.B., Kosugi, S., Suzuki, A., Nashiwa, H., Kato, A., Sakamoto, M., Irimajiri, H., Amano, S., Hirohata, K., Goto, R., Kitaoka- Higashiguchi, K., 2008. Work engagement in Japan: validation of the Japanese version of the Utrecht work engagement scale. Appl. Psychol. 57 (3), 510–523. https://doi.org/10.1111/j.1464-0597.2008.00333.x.
Smith, J.B., Herinek, D., Woodward-Kron, R., Ewers, M., 2022. Nurse migration in Australia, Germany, and the UK: a rapid evidence assessment of empirical research involving migrant nurses. Policy, Politics, Nurs. Practice 23 (3), 175–194. https://doi.org/10.1177/15271544221102964.
Spence Laschinger, H.K., Grau, A.L., Finegan, J., Wilk, P., 2012. Predictors of new graduate nurses' workplace well-being: testing the job demands–resources model. Health Care Manage. Rev. 37 (2), 175–186. https://doi.org/10.1097/HMR.0b013e31822aa456.
Timilsina Bhandari, K.K., Xiao, L.D., Belan, I, 2015. Job satisfaction of overseas-qualified nurses working in Australian hospitals: job satisfaction of overseas-qualified nurses. Int. Nurs. Rev. 62 (1), 64–74. https://doi.org/10.1111/inr.12146.
Tsuruta, K., Fujii, Y., Hasegawa, T., Kazama, K., 2007. Evaluation of the nursing career assessment scale. South Kyusyu J. Nursing 5 (1), 29–36 in Japanese.
Tuo, J., Kabayama, M., Kamide, K., Aimi, Y., 2021. A Qualitative study on challenges Chinese nurses face while working in Japanese hospitals. Open Nurs. J. 15 (1), 122–129. https://doi.org/10.2174/1874434602115010122.
Viken, B., Solum, E.M., Lyberg, A., 2018. Foreign educated nurses' work experiences and patient safety-A systematic review of qualitative studies. Nursing Open 5 (4), 455–468. https://doi.org/10.1002/nop2.146.
Villamin, P., Lopez, V., Thapa, D.K., & Cleary, M. (2023). Retention and turnover among migrant nurses: a scoping review. International Nursing Review, inr.12861. https://doi.org/10.1111/inr.12861.
Wan, Q., Li, Z., Zhou, W., Shang, S., 2018a. Effects of work environment and job characteristics on the turnover intention of experienced nurses: the mediating role of work engagement. J. Adv. Nurs. 74 (6), 1332–1341. https://doi.org/10.1111/jan.13528.
Wan, Q., Li, Z., Zhou, W., Shang, S., 2018b. Effects of work environment and job characteristics on the turnover intention of experienced nurses: the mediating role of work engagement. J. Adv. Nurs. 74 (6), 1332–1341. https://doi.org/10.1111/jan.13528.
Wan, Q., Zhou, W., Li, Z., Shang, S., Yu, F., 2018. Work engagement and its predictors in registered nurses: a cross-sectional design. Nurs. Health Sci. 20 (4), 415–421. https://doi.org/10.1111/nhs.12424.
Wang, S., Liu, Y., 2015. Impact of professional nursing practice environment and psychological empowerment on nurses' work engagement: test of structural equation modelling. J. Nurs. Manage. 23 (3), 287–296. https://doi.org/10.1111/jonm.12124.
Wang, Y.-X., Yang, Y.-J., Wang, Y., Su, D., Li, S.-W., Zhang, T., Li, H.-P., 2019. The mediating role of inclusive leadership: work engagement and innovative behaviour among Chinese head nurses. J. Nurs. Manage. 27 (4), 688–696. https://doi.org/10.1111/jonm.12754.
Warshawsky, N.E., Havens, D.S., Knafl, G., 2012. The influence of interpersonal relationships on nurse managers' work engagement and proactive work behavior. JONA 42 (9), 418–425. https://doi.org/10.1097/NNA.0b013e3182668129.
What is the nurture organization of human resources? (n.d.). Retrieved October 5, 2023, from http://www.kokusaiiryo.jp/about/.
Xiao, L.D., Willis, E., Jeffers, L., 2014. Factors affecting the integration of immigrant nurses into the nursing workforce: a double hermeneutic study. Int. J. Nurs. Stud. 51 (4), 640–653. https://doi.org/10.1016/j.ijnurstu.2013.08.005.
Yang, K., Zhou, L., Wang, Z., Lin, C., Luo, Z., 2019. Humble leadership and innovative behaviour among Chinese nurses: the mediating role of work engagement. J. Nurs. Manage. 27 (8), 1801–1808. https://doi.org/10.1111/jonm.12879.
Yi, M., Jezewski, M.A., 2000. Korean nurses' adjustment to hospitals in the United States of America. J. Adv. Nurs. 32 (3), 721–729. https://doi.org/10.1046/j.1365-2648.2000.01533.x.

Zhong, Y., McKenna, L., Copnell, B., Zhao, W., Moss, C., 2023. Professional adaptation experiences of Chinese migrant nurses in australia: a qualitative study. West. J. Nurs. Res. 45 (7), 626–633. https://doi.org/10.1177/01939459231167711.

Zhou, Y., Windsor, C., Theobald, K., Coyer, F., 2011. The concept of difference and the experience of China-educated nurses working in Australia: a symbolic interactionist exploration. Int. J. Nurs. Stud. 48 (11), 1420–1428. https://doi.org/10.1016/j.ijnurstu.2011.05.003.

Zhou, Y., 2014. The experience of China-educated nurses working in Australia: a symbolic interactionist perspective. PLoS One 9 (9), e108143. https://doi.org/10.1371/journal.pone.0108143.

Zhou, Y., Roscigno, C., Sun, Q., 2016. Why do China-educated nurses emigrate? A qualitative exploration. Int. J. Nurs. Stud. 53, 163–172. https://doi.org/10.1016/j.ijnurstu.2015.08.008.