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Relationships between optimism, educational environment, career adaptability and career motivation in nursing undergraduates: A cross-sectional study

Wenjie Fang, Yanting Zhang, Jiaojiao Mei, Xiaohui Chai, Xiuzhen Fan*

School of Nursing, Shandong University, 44# Wenhua Xi Road, Jinan, Shandong, PR China

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ABSTRACT

Background: For solving the problem of the abandonment of the career in nursing undergraduates, it is important to understand their motivation to choose nursing as a career and its associated personal and situational factors.

Objectives: To examine the relationships between optimism, educational environment, career adaptability, and career motivation in nursing undergraduates using the career construction model of adaptation.

Design: This study adopted a cross-sectional design.

Participants and Methods: A convenience sample of 1060 nursing undergraduates from three universities completed questionnaires for measuring optimism, educational environment, career adaptability, and career motivation. Confirmatory factor analyses, descriptive analyses, comparison analyses, correlation analyses, and mediation analyses were performed accordingly.

Results: Nursing undergraduates' career motivation was positively correlated with their career adaptability ($r = 0.41$, $P < 0.01$), the educational environment ($r = 0.60$, $P < 0.01$), and optimism ($r = 0.26$, $P < 0.01$). In addition, the effects of optimism and educational environment on career motivation were partially mediated by career adaptability in nursing undergraduates.

Conclusions: In nursing undergraduates, the educational environment had a relatively strong positive association with career motivation, while optimism had a weak one. Career adaptability played a mediating role in the relationships. Targeted interventions may improve nursing undergraduates' career motivation.

1. Introduction

Career motivation is regarded as an important factor of career choice. Individuals with good career motivation will show positive career-related attitudes and active career-related behaviors such as searching for and accepting the career, deciding to stay with a particular organization, adjusting occupational planning, and setting or struggling to achieve career objectives (Alnıaçık et al., 2012; London, 1983). By the motivational exploration of a future career, individuals can better understand the career and prepare themselves for successful career transitions (Hirschi et al., 2013). In recent years, careers have become less structured and predictable, which requires individuals to be more flexible, adaptable, and self-directed in career transition and choice (Garcia et al., 2015). Hence, it is important to examine the personal and situational factors associated with career motivation, and thus identify efficient approaches to facilitate undergraduates' adaptive career responses and behaviors.

The career construction model of adaptation (Savickas, 2013; Savickas and Porfeli, 2012) provides an important guide to explore the relationships between personal and situational factors and career issues in career transition, and career adaptability is represented as the self-regulation strategy. In the career construction model of adaptation (Savickas, 2013), individuals demonstrating adaptivity are probably developing adaptability resources which in turn lead to more effective adapting responses, and the whole process will be influenced by situational factors. Adaptivity is conceptualized as a stable, context-general, and trait-like psychological characteristic which involves the readiness and willingness to adapt to career change (Rudolph et al., 2017). In the present study, optimism was conceptualized as the personal indicator of adaptivity. Adaptability resources refer to the self-regulated psychosocial advantages for managing transitions and tasks (Hirschi et al., 2015). Career adaptability is often used to represent adaptability resources (Savickas and Porfeli, 2012). The adapting responses denote performing adaptive behaviors and beliefs that handle

* Corresponding author.
E-mail address: fxiuzhen@sdu.edu.cn (X. Fan).

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vocational development tasks and condition changes (Hirschi et al., 2015). Career motivation was examined as an adapting response in this study. As for situational factors, the educational environment was explored in the current study.

The high rate of career abandonment in nursing undergraduates and newly graduated nurses has been identified to be responsible for the shortage of nurse forces (Lyu et al., 2016). A systematic review reported that nearly half of the nursing undergraduates have considered leaving the course in Europe (Dante et al., 2013). Moreover, approximately 10.8% of the newly graduated nurses leaved the nursing profession in the United States (Brewer et al., 2015). In China, there are about 40% of the nursing freshmen changing to other majors (Yuan et al., 2016). Nursing recruitment and retention have been recognized as priorities worldwide, and we need multiple disciplines working together to support the efforts to educate future generations of this profession (Fillman, 2015). Nursing undergraduates are the major source of new nurses, and acquainting their career motivations will be significant to retain them in nursing. Hence, the present study responded to calls to investigate the relations of optimism, educational environment, and career motivation, and to explore the mediating role of career adaptability on uncommitted nursing undergraduates using the career construction model of adaptation. The hypothesized model is presented in Fig. 1.

2. Literature

2.1. Career Motivation

Career motivation is normally regarded as the driving force of worker's choices and behaviors to achieve goals of individuals and organizations (Cheng et al., 2015), and has been described as a construct influenced by individual characteristics and situational conditions (London, 1983). Undergraduates' career motivation plays an essential role in leading self-oriented career management (Hirschi et al., 2013). The expectancy-value theory, which suggests an individual's motivation to finish tasks depending on his/her desire for success and the task value, offers an overall framework for studying career motivation based on capacities, expectancies, task values, and life pursuits (Eccles, 2009; Eccles and Wigfield, 1995). Expectancy is represented by the individual's concept of ability, capacity, and self-efficacy. Value comprises interest, utility, attainment, and cost. Career expectancy and career value have been proved as important predictors of career choices and other important career outcomes (Lechner et al., 2017; Smith, 2015). Based on the expectancy-value theory, we developed the Nursing Career Motivation Scale (Tian et al., 2014), which was adopted in the current study to measure nursing undergraduates' motivation for choosing nursing as a career.

2.2. Optimism

Optimism has been defined as the tendency or attitude to view the world and interpret the situation or event positively, and as a generalized expectancy of positive future outcomes in the life domains (Scheier and Carver, 1985). Those who are seen as optimists are keenly interested in the future of their career and engaged in professional learning, and they feel comfortable with the path of their chosen career (McIlveen et al., 2013). Creed et al. (2004) demonstrated optimism was positively related to career decision-making self-efficacy and career attitude, and was negatively related to perceived career barriers and career indecision in undergraduates. This highlights the importance of optimism as a particular psychological capital variable which may affect a person's career motivation.

2.3. Educational Environment

In Chinese Bachelor's degree nursing program, undergraduates spend the first 3 years in school and the last 1 year in hospital. Undergraduates get to know the nursing profession through learning nursing expertise, and develop the professional cognition in school, and integrate theoretical knowledge into nursing practice in hospital. Previous studies have demonstrated the significant influence of clinical learning environment on nursing undergraduates' career development (O'Mara et al., 2014; Yousefy et al., 2015). However, to our knowledge, little is understood about the relationship between educational environment in school and career. The educational environment, which includes physical, psychosocial, cognitive, cultural, emotional, and educational facets, has become important to understand students' motivational beliefs and career choices (Eccles and Roeser, 2011; Imanipour et al., 2015). In the educational environment, undergraduates receive support from teachers and peers, gain information and knowledge about occupations or organizations, and develop their professional competences, interests, and values (Lazarides et al., 2016). All these things affect the experiences of medical undergraduates in clinical practice and their attitudes towards their specialty (Mahendran et al., 2015). The clinical learning environment has been proved to be related to undergraduates' career motivation (Tian et al., 2014). In the current study, the association of educational environment with career motivation was assessed.

2.4. Career Adaptability

Career adaptability is a central concept in the career construction

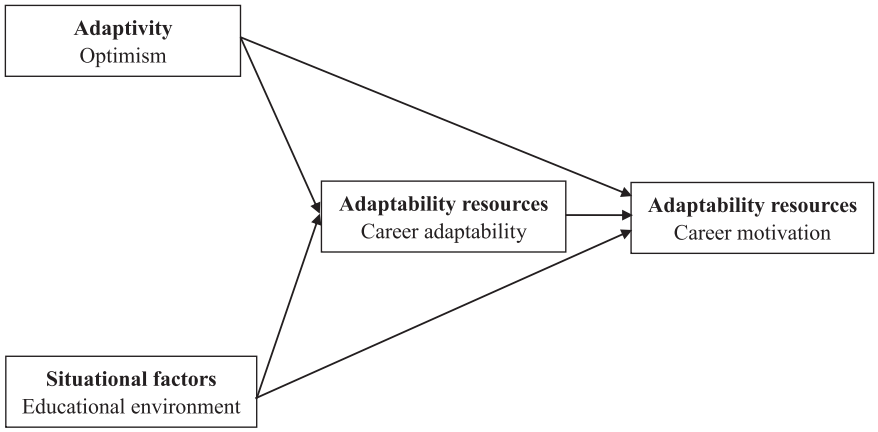

Fig. 1. The hypothesized model of optimism, educational environment, career adaptability, and career motivation based on the career construction model of adaptation.

model of adaptation and was recently redefined as a psychosocial construct which represents a person's resources for managing current and expected tasks and transitions in career life (Savickas, 2013; Savickas and Porfeli, 2012). The self-regulatory strengths of career adaptability that enables the individual to select suitable work are identified as having 1) concern with future career moves and vision, 2) control of constructing their own career with responsibility, 3) curiosity for exploring the career self and the work world, and 4) confidence in making career choices and pursuing career goals (Savickas and Porfeli, 2012). Optimism has been proved to be significantly related to career adaptability (Wilkins et al., 2014), and has been identified as an important resource of career adaptability (Buyukgoze-Kavas, 2016). For nursing undergraduates, it has been found that the clinical learning environment was positively associated with career adaptability (Tian and Fan, 2014). We expect that the educational environment also has a positive relationship with undergraduates' career adaptability. Career adaptability has been proved to be related to various career and work outcomes such as job search success (Guan et al., 2014) and career exploration (Li et al., 2015). It has also been found a positive relationship with career motivation (Tian et al., 2014). Therefore, career adaptability was hypothesized as a mediator between optimism, the educational environment, and career motivation in the current study.

3. Methods

3.1. Design, Sample and Procedure

The study used a cross-sectional design. Approval was obtained from the ethics committee of nursing school, Shandong University. The instructors from study sites provided us permission and assistance to recruit voluntary participants. A convenience sample was enrolled from 3 universities in Shandong Province, China. All these universities provided a four-year bachelor's degree nursing program. Data collection was conducted from December 2015 to April 2016. All participants gave their informed consents for the study and completed the questionnaires anonymously in the classroom. The final sample comprised 1060 full-time nursing undergraduates.

3.2. Measures

The Chinese Revised Life Orientation Test (CLOT-R) (Lai et al., 1998) was used to measure optimism, which is an adaptation of the LOT-R (Scheier et al., 1994). The CLOT-R contains 3 positive items and 3 negative items. Each item is rated on a 5-point Likert scale (0 = strongly disagree, 4 = strongly agree). The CLOT-R has good reliability and validity in Chinese population (Zhang et al., 2011). In the present population, it exhibited acceptable internal consistency, and the Cronbach's α was 0.60.

The Dundee Ready Education Environment Measure (DREEM) was designed specifically to measure health-professionals' perception of their educational environment (Roff, 2005; Roff et al., 1997). The DREEM consists of 50 items graded on a 5-point Likert scale (0 = strongly disagree, 4 = strongly agree). All items are grouped into 5 areas: student perception of learning, student perception of teachers, student academic self-perception, student perception of atmosphere, and student social self-perception. A high score indicates a positive perception of the educational environment. The DREEM has been translated into a Chinese version (Sun and Zhao, 2003) and been used to evaluate the educational environment in Chinese nursing schools (Wang et al., 2009). In this study, the Cronbach's α was 0.93.

The Chinese version of Career Adapt-Abilities Scale (Hou et al., 2012; Savickas and Porfeli, 2012) was adopted to measure participants' career adaptability. It contains 4 dimensions of concern, control, curiosity, and confidence, each with 6 items. Undergraduates rated the items on a 5-point Likert scale (1 = not strong, 5 = strongest). This scale has been used among Chinese nursing undergraduates and showed good reliability (Tian and Fan, 2014). In this study, the Cronbach's α was 0.90.

The Nursing Career Motivation Scale (Tian et al., 2014) was used to measure nursing undergraduate's motivation for working as a nurse. This scale consists of 2 subscales: the career expectancy subscale (6 items), and the career value subscale (14 items) which includes 4 facets of interest, utility, attainment, and cost. Each item is rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). A high score indicates a high level of career motivation for nursing. In the present sample, the Cronbach's α was 0.90 for the total score, 0.83 for the expectancy subscale, and 0.87 for the value subscale. We tested the measurement model of the scale using confirmatory factor analysis, with the AMOS version 22.0 software. For the expectancy subscale, a one-factor model yielded $\chi^2/df = 2.05$, $P = 0.08$, CFI = 0.99, TLI = 0.99, RMSEA = 0.03, which indicated that the model fitted the data well. For the value subscale, we considered career value as the latent variable, interest, utility, attainment, and cost as first-order factors, and each item as observed variable. According to the principle of model modification (Baumgartner and Homburg, 1996), some covariance correlations were added. The final modified model yielded an acceptable fit ($\chi^2/df = 2.50$, $P < 0.001$, CFI = 0.99, TLI = 0.98, RMSEA = 0.04). Table 1 presents the descriptive statistics of the items and constructs. Each standardized factor loading was significant at $P < 0.01$.

3.3. Data Analysis

The SPSS version 22.0 software was used for data analysis. Continuous data was presented as means and standard deviations, categorical data as frequencies and percentages. One-way ANOVA and Post Hoc analysis were conducted to compare the results of questionnaires in the 3 universities. Pearson correlations were used to examine the correlations between optimism, education environment, career adaptability, and career motivation. Mediation analyses were performed using the procedures proposed by Preacher and Hayes (2008). First, the mediator was regressed on the independent variable; second, the dependent variable was regressed on the mediator with controlling the independent variable; third, the indirect effect of the independent variable on dependent variable was tested using the macro PROCESS (Hayes, 2013).

4. Results

4.1. Sample Characteristics

The demographic characteristics of nursing undergraduates are shown in Table 2. The majority of the undergraduates were female (88.3%). The mean age was 19.9 (SD = 1.3, range = 17–24 years). Among these undergraduates, 41.9% were in their first academic year, 36.3% were in their second academic year and 21.8% were in their third academic year. The fourth-year nursing undergraduates were excluded because their career motivation and career adaptability have been investigated before (Tian et al., 2014; Tian and Fan, 2014). The majority (73.5%) of the undergraduates were from university 3, and the others (26.5%) were from university 1 (12.5%) and university 2 (14.0%).

The scores for study variables and the comparison by university are presented in Table 3. There were significant differences in scores for the educational environment, career adaptability, and career motivation, but there was not in score for optimism among the 3 universities.

4.2. Correlations of Study Variables

As shown in Table 4, career motivation was positively correlated with optimism ($r = 0.26$, $P < 0.01$) and educational environment ($r = 0.60$, $P < 0.01$). Its expectancy and value dimensions were also

Table 1
The expectancy and value subscales of the Nursing Career Motivation Scale: items, descriptive statistics, and standardized factor loadings (N = 1060).

Construct	Item (first-order indicators)	Mean	SD	Loading
Career expectancy	1. I believe I can get along with patients.	3.82	0.71	0.62
	2. I think I can do nursing work well.	3.43	0.83	0.70
	3. I think I have mastered the basic nursing knowledge.	3.10	0.82	0.51
	4. I think I have mastered the basic nursing procedures.	3.05	0.86	0.48
	5. I believe I am competent for nursing work.	3.62	0.79	0.81
	6. I believe I can make some achievements in the field of nursing.	3.56	0.76	0.74
Interest	1. I like to get along with patients.	3.32	0.76	0.73
	2. I like to provide nursing services for patients.	3.55	0.78	0.89
	3. I am happy to help patients solve their health problems.	4.03	0.72	0.64
Utility	4. Engaging in nursing work can provide me with a satisfactory salary.	3.09	0.93	0.59
	5. Engaging in nursing work does not limit my choice of working in a city.	3.20	1.02	0.45
	6. Engaging in nursing work is helpful to my career development.	3.11	0.85	0.79
Attainment	7. Engaging in nursing work can realize my own value.	3.30	0.92	0.75
	8. Engaging in nursing work is in line with my family's expectations.	3.12	1.07	0.56
	9. Becoming an expert in the field of nursing is my pursuit.	3.21	1.03	0.60
	10. I want to make some achievements in the field of nursing.	3.67	0.90	0.68
	11. Providing care for the patient can bring me a great sense of accomplishment.	3.73	0.87	0.69
Cost	12. If I work in nursing, I will lose better job opportunities.	3.40	0.81	0.69
	13. If I work in nursing, my career development will be very limited.	3.13	0.95	0.77
	14. The nursing work environment will make me feel very depressed.	3.22	0.95	0.74

Construct	Item (second-order indicators)	Mean	SD	Loading
Career value	Interest	3.63	0.64	0.73
	Utility	3.13	0.73	0.80
	Attainment	3.41	0.71	0.94
	Cost	3.25	0.75	0.63

Note. Each factor loading is significant at $P < 0.01$.

Table 2
Demographic characteristics of nursing undergraduates (N = 1060).

	N	%	M (SD)
Age			19.9 (1.3)
Sex			
Female	936	88.3	
Male	124	11.7	
Academic year			
First year	444	41.9	
Second year	385	36.3	
Third year	231	21.8	
University			
University 1	133	12.5	
University 2	148	14.0	
University 3	779	73.5	

significantly correlated with other variables ($P < 0.01$). Career adaptability was positively correlated with optimism ($r = 0.43$, $P < 0.01$), educational environment ($r = 0.51$, $P < 0.01$), and career motivation ($r = 0.41$, $P < 0.01$). Each of its dimensions also had significant correlations with other variables ($P < 0.01$).

4.3. Mediation Analyses

It was assumed that career adaptability mediated the relationships between optimism, educational environment, and career motivation. Each continuous predictor was mean-centered before analyses (Aiken and West, 1991). First, results of regression analyses (see Table 5) showed that optimism ($\beta = 0.32$, $P < 0.001$) and educational environment ($\beta = 0.40$, $P < 0.001$) were significantly associated with career adaptability while adjusting for undergraduates' gender, age, the academic year and university. In addition, optimism ($\beta = 0.10$, $P < 0.001$) and educational environment ($\beta = 0.56$, $P < 0.001$) were positively associated with career motivation. Second, after controlling for the independent variables and undergraduates' demographics, career adaptability ($\beta = 0.12$, $P < 0.001$) was positively associated with career motivation, and the effects of optimism ($\beta = 0.06$, $P < 0.05$) and educational environment ($\beta = 0.51$, $P < 0.001$) on career motivation were reduced. Third, optimism (95% CI = [0.13, 0.22]) and educational environment (95% CI = [0.05, 0.14]) had significant indirect effects on career motivation via career adaptability, with the zero not included in the confidence interval, indicating the mediating role of career adaptability. The final model is depicted in Fig. 2.

Table 3
Mean scores for study variables and the comparison by university.

	Total (N = 1060)	University 1 (N = 133)	University 2 (N = 148)	University 3 (N = 779)	*P*	Post Hoc analysis (*P*)		
						University 1 vs. 2	University 1 vs. 3	University 2 vs. 3
Optimism	16.48 ± 2.78	16.44 ± 2.42	16.16 ± 2.82	16.55 ± 2.83	0.281	–	–	–
Educational environment	125.75 ± 19.66	119.17 ± 16.17	122.16 ± 20.05	127.56 ± 19.82	0.000	0.199	0.000	0.002
Career adaptability	3.69 ± 0.47	3.62 ± 0.42	3.64 ± 0.46	3.71 ± 0.48	0.035	0.805	0.037	0.064
Career motivation	3.38 ± 0.52	3.00 ± 0.50	3.39 ± 0.48	3.45 ± 0.50	0.000	0.000	0.000	0.253

Table 4
Correlation coefficients among study variables (N = 1060).

	1	2	2.1	2.2	2.3	2.4	2.5	3	3.1	3.2	3.3	3.4	4	4.1
1 Optimism														
2 Educational environment	0.29													
2.1 Learning	0.23	0.91												
2.2 Teachers	0.28	0.80	0.68											
2.3 Academic self	0.24	0.80	0.69	0.47										
2.4 Atmosphere	0.26	0.91	0.77	0.67	0.68									
2.5 Social self	0.22	0.80	0.66	0.51	0.62	0.69								
3 Career adaptability	0.43	0.51	0.46	0.39	0.43	0.47	0.40							
3.1 Concern	0.35	0.36	0.34	0.33	0.30	0.32	0.24	0.82						
3.2 Control	0.26	0.38	0.34	0.27	0.36	0.34	0.33	0.66	0.37					
3.3 Curiosity	0.38	0.43	0.38	0.33	0.35	0.41	0.33	0.89	0.75	0.37				
3.4 Confidence	0.43	0.50	0.46	0.36	0.42	0.47	0.41	0.93	0.65	0.57	0.76			
4 Career motivation	0.26	0.60	0.54	0.44	0.55	0.53	0.50	0.41	0.27	0.34	0.31	0.41		
4.1 Expectancy	0.31	0.51	0.44	0.33	0.53	0.45	0.40	0.43	0.28	0.36	0.33	0.43	0.81	
4.2 Value	0.21	0.57	0.52	0.43	0.49	0.50	0.48	0.35	0.23	0.29	0.27	0.35	0.96	0.62

Note. All $P < 0.01$.

Table 5
Hierarchical regressions of career adaptability and career motivation (N = 1060).

	Career adaptability		Career motivation		
	Model 1	Model 2	Model 3	Model 4	Model 5
Female (male as reference)	−0.05	−0.04	−0.04	−0.03	−0.03
Age	−0.02	−0.00	0.05	0.02	0.02
2nd academic year (1st year as reference)	−0.06	−0.04	−0.07	−0.03	−0.03
3rd academic year (1st year as reference)	−0.16**	−0.11*	−0.06	0.05	0.07
University 2 (university 1 as reference)	−0.02	−0.02	0.25***	0.25***	0.25***
University 3 (university 1 as reference)	0.03	−0.03	0.37***	0.30***	0.30***
Optimism		0.32***		0.10***	0.06*
Educational environment		0.40***		0.56***	0.51***
Career adaptability					0.12***
R^2	0.03***	0.36***	0.08***	0.42***	0.43***
ΔR^2		0.33***		0.34***	0.01***

Note.
* $P < 0.05$.
** $P < 0.01$.
*** $P < 0.001$.

5. Discussion

Using the career construction model of adaptation, we assessed the relationships between optimism, educational environment, and career motivation among Chinese nursing undergraduates, and the mediating effect of career adaptability in these relationships. Results demonstrated that optimism, as well as educational environment, had positive relationship with career motivation. Furthermore, career adaptability was a partial mediator between personal, situational variables, and career motivation.

With regard to personal factors, our study showed that optimism was positively associated with nursing undergraduates' career motivation and career adaptability. The positive relationship between optimism and academic achievement motivation has been previously reported among students (Sarouni et al., 2016). Higgins et al. (2010) found that those with higher levels of optimism performed more career behaviors, for example, being more confident in career decisions and more active in career exploration. However, the correlation between optimism and career motivation was weak ($r = 0.26$, $P < 0.01$) in this study. This finding is similar to the report that optimism has no unique influence on goal-specific expectancies (Rand, 2009).

In the nursing program, the school educational environment builds the foundation of professional knowledge and identity (Dmitrienko et al., 2017), and the clinical learning environment gets nursing undergraduates involved in real working environment to shape their professional attitudes and norms (Yousefy et al., 2015). With less attention being paid to the effect of the school educational environment

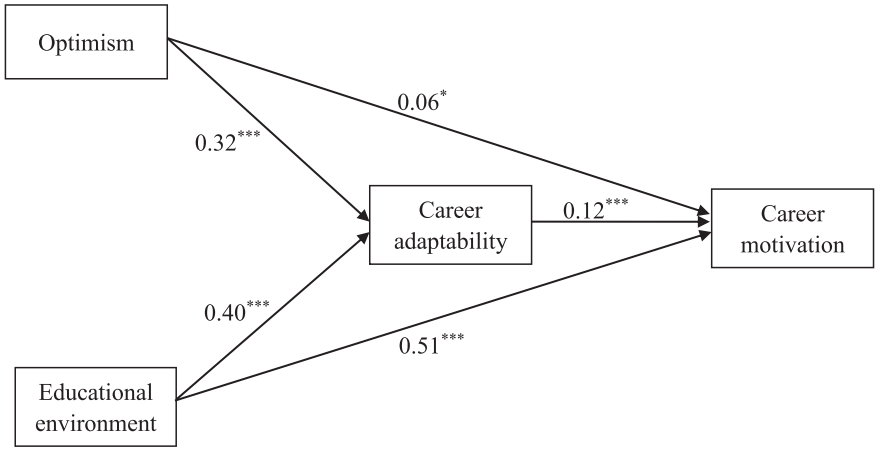

Fig. 2. The mediation model of career adaptability in the relationships between optimism, educational environment, and career motivation in nursing undergraduates. Values are standardized coefficients. *$P < 0.05$. **$P < 0.01$. ***$P < 0.001$.

on undergraduates' career development, a positive and strong relationship ($r = 0.60$, $P < 0.01$) between educational environment and career motivation was found in this study. This is partially supported by previous studies which found that the educational climate contributed to learning motivation, career identity and certainty of career choice (Ariani, 2017; Kuijpers et al., 2011). In addition, the educational environment influenced undergraduates' attitudes towards their specialties, stimulated their interest to explore their future career, and in turn affected their career choices (Mahendran et al., 2015). Thus, educators should create a supportive and positive educational environment, which would provide undergraduates with more information and positive role models about the value of their academic major and career. Previous studies have proved that academic support programs (Freeman and All, 2017) and career guidance intervention (Meijers and Kuijpers, 2014) could improve students' professional competencies and retain them in nursing.

This study also found that career adaptability mediated the relationships between optimism, educational environment, and career motivation. Empirical works have been performed to confirm the mediation effect of career adaptability between personal and situational factors and career related outcomes (Hirschi et al., 2015). Our results suggest the incentive and sustaining effect of career adaptability on undergraduates' career motivation. Optimists tend to hold a higher level of career adaptability and take more initiative for focusing on and exploring their future career (Buyukgoze-Kavas, 2016). Furthermore, the educational environment provides the resources and opportunities to understand the career (Mahendran et al., 2015). All these factors help undergraduates develop their career expectancy and career value (career motivation).

5.1. Implications and Limitations

There are many external factors such as the complex healthcare environment, heavy workloads, and job insecurity which severely hinder nursing undergraduates' enthusiasm and motivation for choosing nursing as a lifetime career (Lyu et al., 2016). However, intrinsic factors including the significant value and fast development of nursing work, altruistic motivation, and interest, have been identified as being more influential (Halperin and Mashiach-Eizenberg, 2014; Nesje, 2015). Therefore, schools and educators should attach more importance to the intrinsic career motivation of nursing undergraduates, encouraging them to be more optimistic, offering them a more supportive and professional educational environment, and providing guidance and career education to promote their career adaptability, so that nursing undergraduates will gradually build correct occupation value and sufficient career expectancy.

There were some limitations in our study. First, considering the cross-sectional design, we cannot infer any causal relationships among the variables. Longitudinal studies are warranted to test the causal effects. Second, the data was gathered from undergraduates who major in nursing at 3 universities in China. More representative samples could improve the generalization of the findings. Third, this study just focused on the impact of school educational environment on career adaptability and career motivation. Studies including both school educational environment and clinical learning environment are needed.

6. Conclusions

In nursing undergraduates, the educational environment had a relatively strong positive association with career motivation, while optimism had a weak one. Furthermore, career adaptability partially mediated the effect of educational environment on career motivation, as well as optimism on career motivation. Our findings make some contributions to the literature through exploring the relationships between personal and situational factors, career adaptability, and career motivation among nursing undergraduates. Nursing educators should take measures to enhance undergraduates' career adaptability and optimism, and especially to improve the educational environment, in order to promote the undergraduates' motivation for engaging in the nursing profession.

Conflicts of Interest

No conflict of interest has been declared by the authors.

Contributions

Wenjie Fang contributed to the analysis and interpretation of data, and was responsible for drafting the manuscript. Yanting Zhang, Jiaojiao Mei and Xiaohui Chai collected the data and participated in the review of the results. Xiuzhen Fan contributed to the conception and design of the study, and the revision of the manuscript. All authors contributed to critical revision of the paper and approved the final manuscript for submission.

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