



# Adversity quotients, environmental variables and career adaptability in student nurses

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## ARTICLE INFO

### Article history:

Received 23 June 2014

Received in revised form 21 July 2014

Accepted 22 July 2014

Available online 1 August 2014

### Keywords:

Career adaptability

Adversity quotient

Clinical learning environment

Social support

Student nurses

## ABSTRACT

The cross-sectional study aimed to investigate the career adaptability and its associated factors among 431 student nurses. Participants completed questionnaires on demographics, career adaptability, adversity quotient, clinical learning environment and social support. Findings revealed that student nurses' adversity quotients, individualized clinical learning environment, and family social support associated positively with their degree of career adaptability, even after multiple adjustments. Additionally, career adaptability scores were higher among associate degree student nurses and those who had served as student leaders. These findings may provide referable evidence for schools and educators to improve student nurses' career adaptability.

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## 1. Introduction

Career adaptability is an important psychosocial meta-capacity for successful adaptation in various spheres of life, including the realm of careers (Coetzee & Harry, 2014). As a psychosocial construct, career adaptability denotes an individual's self-regulation strengths or capacities for solving unfamiliar, complex, and ill-defined problems presented by developmental vocational tasks, occupational transitions, and work traumas. Career adaptability has a strong association with individuals' general and professional well-being (Maggiori, Johnston, Krings, Massoudi, & Rossier, 2013). Moreover, career adaptability resources may increase graduates' chances of finding a fitting job as well as facilitate a successful school-to-work transition (Koen, Klehe, Vianen, & Annelies, 2012).

For students in some majors, the school-to-work transition is extensive. For example, when nursing students enter the later stages of their program, a prolonged period of transition begins. In their final year, student nurses are required to experience consolidated clinical practice to prepare them for their transition to graduate nurses (Liaw et al., 2014). So it may be useful to identify how factors of career adaptability may relate to their career development. The present study was to examine the career adaptability of student nurses; and according to Albert Bandura's reciprocal determinism (Bandura, 1986), to explore personal and environmental variables may impact student nurses' career adaptability.

### 1.1. Career adaptability

Savickas (1997) proposed the concept of career adaptability, which refers to the "readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions" (p. 254). Career adaptability consists of four factors: concern, control, curiosity and confidence. A four-dimensional scale

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of career adaptability has been developed and its structural validity was supported by empirical study conducted in 13 countries (Savickas & Porfeli, 2012). The four dimensions related positively with university graduates' job search self-efficacy and their employment status (Guan et al., 2013). And training career adaptability can raise graduates' chances of finding a good job, and facilitate a successful transition from school to work (Koen et al., 2012). Moreover, career adaptability has an effect on individual's career satisfaction and self-rated career performance above and beyond employees' personality and core self-evaluation (Zacher, 2014). Thus, career adaptability is of great importance to individual's career and social development.

Given the importance of career adaptability, the present study aimed to further examine its nomological network by examining its relation to adversity, clinical learning environment and social support in a sample of student nurses.

### 1.2. Adversity quotient

Adversity refers to an unfortunate event or circumstance or the state of serious and continued difficulty. Many students meet various hardships or adversities at school or in society. This seems particularly true for students of medicine and nursing. Previous studies have reported that a large percentage of nursing students experience psychological distress and poor adjustment during their training (Warbah et al., 2007). The most powerful stressors experienced by nursing students in clinical setting were lack of competence, harmful and unmanageable relationship with patients, difficult relationships with tutors or companions, emotional involvement, contact with suffering, and overload (Zupiria Gorostidi et al., 2007).

Thus, nursing may be required to adapt to a variety of adversities. In the present study, we examined the relation between career adaptability and adversity. We used the construct of adversity quotient, which was first described by Stoltz (1997), who conceptualized the *adversity quotient* as an index of how well an individual may respond when misfortune occurs. Individuals with a high adversity quotient are better able to cope with setbacks and choose constructive responses that turn obstacles into opportunities. In short, the adversity quotient (AQ) indexes how well a person can withstand adversity and his/her ability to surmount it (Phoolka & Kaur, 2012). The quotient is composed of four major dimensions, referred to as CORE (control, ownership, reach, and endurance). Control refers to degree of perceived ability to alter the situation possible, ownership means degree of willingness to take responsibility for improving the situation, reach refers how far the difficulty extends into other life domains, and endurance means the perceived length of time the adversity will last (Stoltz, 2004).

### 1.3. Clinical learning environment

A clinical learning environment consists of all that surrounds student nurses, including the staff, the patients, the settings, the nurse mentors, and the nurse teachers (Papp, Markkanen, & von Bonsdorff, 2003). These factors interact, either positively or negatively, to influence students' learning outcomes. They also combine to shape a sense of belonging (Sedgwick & Rougeau, 2010).

### 1.4. Social support

Social support is a multi-faceted concept (Langford, Bowsher, Maloney, & Lillis, 1997) that predicts individuals' health and well-being and relates negatively to stress (Glozah & Pevalin, 2014). Hirschi, Niles, and Akos (2011) concluded that more perceived social support predicted more active engagement in career preparation. And employees' perceived support for competency development was positively associated with their perceived employability and career success (i.e. career satisfaction and perceived marketability) (De Vos, De Hauw, der Heijden, & Beatrice, 2011). Obviously, social support is also an environmental variable of student nurses' career development.

## 2. Methods

### 2.1. Participants

A total of 450 full-time student nurses in three first-class hospitals came from six public universities in Shandong Province, China. The participants complete a clinical practice in hospitals during the last year of their program. The study was conducted at the fifth month after students entered clinical settings.

### 2.2. Measures

#### 2.2.1. Demographic characteristics

A questionnaire was used to obtain the demographic characteristics of the participants, including gender (1 = male and 2 = female); age; education (1 = *baccalaureate* and 2 = *associate degree*); social practice experience (1 = *experience related to nursing profession*, 2 = *experience not related to nursing profession*, 3 = *no social practice experience*); and student leader experience (1 = yes and 2 = no). Social practice experience refers to various activities that students participate in their spare time such as tutoring, odd jobs, volunteer service, charity activities, social surveys and professional internships. These experiences may or may not relate to the nursing profession.

### 2.2.2. Career Adapt-Abilities Scale—China Form

The Career Adapt-Abilities Scale—China Form (CAAS—China) (Hou, Leung, Li, Li, & Xu, 2012) was used to measure career adaptability. The 24 items are divided into four subscales that measure the adapt-ability resources of concern, control, curiosity, and confidence. Participants provided their ratings on 5-point scales ranging from 1 (not strong) to 5 (strongest). The coefficient alpha for the CAAS—China scale is .89, which is higher than that of its subscales of Concern (.79), Control (.64), Curiosity (.71) and Confidence (.74). The coefficient alpha in the present study for the overall scale was .93, and for the subscales ranged from .81 to .87.

### 2.2.3. Adversity Response Profile

The Adversity Response Profile (ARP) (P. Stoltz, 2000) was used to measure adversity quotient. The ARP is a self-rating questionnaire designed to measure an individual's style of response to adverse situations. The ARP describes twenty scenarios. Each scenario is followed by two questions, each to be answered on a five-point bipolar scale. Each of the two answers is scored on a different subscale. There are four subscales of ten questions each: control, ownership, reach and endurance. Control measures how an individual perceives the degree of control that he or she has over adverse events. Ownership measures the extent to which the person takes responsibility for the outcomes of adversity or the extent to which the individual holds himself or herself accountable for improving the situation. Reach measures the degree to which the person perceives bad events extending into other areas of life. Endurance measures the perception of time over which bad events and their consequences will last. The AQ total score ranges from 40 to 200. Higher scores indicate better responses to adversity. In the current study, the coefficient alpha was .87.

### 2.2.4. Clinical Learning Environment Scale for Nursing

The Clinical Learning Environment Scale for Nursing (Zhu & Li, 2005) was used to evaluate the quality of nursing clinical learning environment. The scale contains 42 items that are classified into 6 dimensions: interpersonal relationship, working atmosphere and group culture, involvement, task orientation, innovation, and individualization. Interpersonal relationship assesses the relationships between student nurses and mentors and other staff. Working atmosphere and group culture assess the work attitude and team spirit demonstrated by the nurses. Involvement assesses the extent to which student nurses participate actively in ward activities. Task orientation assesses the extent to which ward activities are clear and well organized. Innovation assesses the extent to which clinical teachers plan new, interesting teaching techniques and learning activities. Individualization assesses the extent to which student nurses are allowed to make decisions and are treated differentially according to their ability or interest. Each dimension is composed of 7 items that are rated on a 5-point Likert-type scale ranging from 1 strongly disagree to 5 strongly agree. The coefficient alpha for the scale was reported by Zhu and Li (2005) as .98. In the present sample, coefficient alpha was .97.

### 2.2.5. Scale of Perceived Social Support

The Chinese version of the 12-item Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) was used to measure student nurses' perceived social support. It contains three subscales: family, friends, and significant others (4 items per subscale). Participants rated the items on a 7-point Likert response format with endpoints of strongly disagree to strongly agree. Higher scores indicate greater support. The coefficient alpha for the total score was reported as .88. In the present study, the coefficient alpha for the total score was .95, and .89 for the family subscale, .91 for the friends subscale, and .88 for the significant others subscale.

## 2.3. Procedures

The study used a cross-sectional design. Permission to conduct this study was obtained from the Medical Ethics Committee of the University. After explaining the purpose of the study, student nurses were asked to indicate whether they would like to participate in the study by completing informed consent forms. Participants for the study consisted of 450 students. For all participants, completion of these questionnaires took no more than 20 min. Four hundred and thirty one (95.8%) student nurses completed the questionnaires, 19 were excluded because their questionnaires had missing data.

## 2.4. Data analyses

SPSS 16.0 was used for data analysis. According to the result of Kolmogorov–Smirnov test, data were normally distributed. Preliminary analyses were conducted to describe the sample. Analysis of variance (ANOVA) and *t*-test were used to explore career adaptability differences relative to different demographic characteristics. Pearson correlation coefficients were calculated to evaluate the relations between adversity quotient, clinical learning environment, social support, and career adaptability. As the main analytic step, multiple regression analysis was conducted to identify the association of career adaptability with adversity quotient, clinical learning environment and social support in student nurses.  $P \leq 0.05$  was considered statistically significant.

## 3. Results

### 3.1. The characteristics of participants

Of the 431 student nurses, 43 (44.2%) were male and 388 (55.8%) were female.

Average age was 21.93 (SD 1.15) years, and age ranged from 19 to 25. There were 204 (47.3%) baccalaureate student nurses and 227 (52.7%) associate degree student nurses. During their school life, 213 (49.4%) had served as student leaders, 401 (93%) had social practice experiences.

### 3.2. Mean scores and correlations between career adaptability and other variables

The mean score on the CAAS was 3.93 with a standard deviation of .52. We examined the correlations between adversity quotient, clinical learning environment, social support and career adaptability in student nurses. Scores and correlation coefficients are presented in Table 1. Significant positive correlations were found between career adaptability and other variables ( $p < .01$ ). A similar pattern of significant positive correlations were also found between subscales of career adaptability and other variables' ( $p < .01$ ), except the ownership subscale of adversity quotient ( $p > .05$ ).

### 3.3. Career adaptability differences between demographic groups

As appropriate, *t*-test and ANOVA analyses were calculated to determine if there were differences in career adaptability between demographic groups. The career adaptability scores for different demographic groups appear in Table 2.

The career adaptability scores of associate degree student nurses were higher than that of baccalaureate student nurses ( $p = .001$ ). Student nurses who had served as student leaders had higher scores than those who did not have this experience ( $p < .001$ ). But there were no significant differences between gender and different social practice experience groups ( $p > .05$ ).

### 3.4. Regression analysis of career adaptability

Multiple regression analysis was performed with career adaptability as the dependent variable. Demographic characteristics and subscales of adversity quotient, clinical learning environment and social support were entered as a set of independent variables. As shown in Table 3, the associated factors of career adaptability were associate degree, student leader experience, control of adversity quotient, individualized clinical learning environment and social support from family. Five variables explained 28.5% of the variance in career adaptability.

## 4. Discussion

In our study, career adaptability differed between demographic groups. First, the associate degree student nurses had higher career adaptability than baccalaureate student nurses. It may be that the associate degree students expected to enter the job market immediately upon graduation and may have been more oriented to job-search issues. Pettigrew, Dienger, and O'Brien King (2011) found that most of baccalaureate students envisioned themselves as staff nurses 5 years post-graduation, and they planned to continue their education and eventually earned a master of science in nursing (MSN) degree or advanced nursing practice certificate. Moreover,

**Table 1**  
Means, SD, correlation coefficients between career adaptability and other variables (N = 431).

	M	SD	1	2	3	4	5
1. Career adaptability	3.93	0.52					
2. Career adaptability—concern	3.79	0.64	.77**				
3. Career adaptability—control	3.99	0.63	.83**	.54**			
4. Career adaptability—curiosity	3.91	0.64	.86**	.55**	.60**		
5. Career adaptability—confidence	4.03	0.62	.84**	.48**	.61**	.71**	
6. AQ	3.34	0.44	.24**	.23**	.23**	.14**	.18**
7. AQ—control	3.39	0.60	.28**	.31**	.25**	.17**	.20**
8. AQ—ownership	3.33	0.44	.07	.08	.06	.03	.06
9. AQ—reach	3.20	0.66	.21**	.19**	.24**	.12**	.15**
10. AQ—endurance	3.44	0.44	.13**	.11*	.13**	.09*	.11**
11. CLE	3.64	0.63	.34**	.23**	.28**	.29**	.32**
12. CLE—interpersonal relationship	3.57	0.76	.30**	.21**	.24**	.27**	.28**
13. CLE—working atmosphere and group culture	3.68	0.68	.28**	.18**	.27**	.22**	.27**
14. CLE—involvement	3.58	0.72	.30**	.20**	.24**	.25**	.31**
15. CLE—task orientation	3.81	0.63	.29**	.23**	.24**	.24**	.24**
16. CLE—innovation	3.65	0.76	.30**	.20**	.23**	.27**	.27**
17. CLE—individualization	3.55	0.75	.32**	.22**	.26**	.29**	.31**
18. Social support	5.58	0.97	.41**	.31**	.34**	.36**	.35**
19. Social support—family	5.67	1.07	.42**	.31**	.35**	.35**	.35**
20. Social support—friends	5.57	0.99	.38**	.28**	.33**	.31**	.31**
21. Social support—significant others	5.51	1.03	.36**	.28**	.30**	.31**	.31**

AQ = adversity quotient.

CLE = clinical learning environment.

\*  $p < .05$

\*\*  $p < .01$

**Table 2**  
Career adaptability differences between demographic groups (N = 431).

Variables		N	Career adaptability (M ± SD)	F/t	p
Gender	Male	43	3.97 ± 0.51	.49	.625
	Female	388	3.93 ± 0.53		
Education	Baccalaureate	204	3.84 ± 0.55	3.42	.001
	Associate degree	227	4.01 ± 0.49		
Student leader experience	Yes	213	4.03 ± 0.48	3.76	<.001
	No	218	3.84 ± 0.55		
Social practice experience	Yes, professional	244	3.90 ± 0.51	1.49	.227
	Yes, not professional	157	3.98 ± 0.54		
	No	30	3.88 ± 0.50		

employment opportunity for associate degree nursing graduates has decreased (Raman, 2013). Facing employment pressure, new associate degree graduates are competing with baccalaureate graduates (Auerbach, Buerhaus, & Staiger, 2011). So associate degree student nurses may be more concerned about their future employment opportunities, make early preparation for their career, and pay more attention to future career development.

Second, student nurses who had served as student leaders displayed better career adaptability than those who did not. Student leaders may have been more involved in curricular and extra-curricular activities that enhanced their career adaptability resources. This suggests that providing students with leadership opportunities may improve their career adaptability and career outcomes. Of course, this possibility must be examined in the future study.

As for personal factors, our study showed that adversity quotient associated positively with student nurses' career adaptability. This result is similar to a previous study which reported that career adaptability was negatively related to individual's perceived barriers (indicating low adversity quotient) (Soresi, Nota, & Ferrari, 2012). And Phoolka and Kaur (2012) concluded that adversity quotient can be useful to predict performance, persistence, resilience, longevity and response to change. Obviously, an individual's adversity quotient plays an important role in people's life and career.

Regarding environmental variables, clinical learning environment was positively correlated to student nurses' career adaptability, and individualized clinical learning environment was independently associated with students' career adaptability. The finding is partially supported by the previous study which identified that individualized supervisory relationship can be more uniquely tailored to reflect students' learning needs, help students in their professional development and in recognition of his or her professional and personal self (Warne et al., 2010). Clinical learning environment is an important component of nursing education. A welcoming clinical practice environment is an instrument for students to learn (Henderson, Cooke, Creedy, & Walker, 2012). Although clinical learning environment is crucial for nursing students, there was a big gap between students' perceptions of the actual clinical learning environment and the ideal clinical learning environment they desired (Chan & Ip, 2007; Ip & Chan, 2005). Thus, nursing schools and educators should make effort to create a supportive and positive clinical learning environment, allow students to make decisions and treat them differentially according to students' ability or interest, so that student nurses' career adaptability will be improved and their transition from students to nurses will be completed successfully.

In addition, social support from family is another important factor that impact on student nurses' career adaptability. This conforms to the findings from previous studies which reported that perceived social support was a single significant predictor of career adaptability development (Hirschi, 2009) and engagement in adolescent career preparation (Hirschi et al., 2011). Studies reveal that

**Table 3**  
Multiple regression analysis of career adaptability (N = 431).

Variables	B	SE	β	t	p value	Collinearity statistics	
						c	VIF
Constant	1.871	.169	–	11.049	.000	–	–
Associate degree	.092	.046	.088	1.980	.048	.476	2.099
Student leader experience	.181	.043	.173	4.189	.000	.914	1.094
AQ-Control	.168	.036	.193	4.638	.000	.601	1.663
CLE-Individualization	.116	.033	.166	3.529	.000	.283	3.532
Social support-family	.160	.022	.327	7.280	.000	.293	3.412

F = 29.446,  $p < .001$ , R = .543,  $R^2 = .295$ , adjusted  $R^2 = .285$ , SE = .442.

AQ = adversity quotient.

CLE = clinical learning environment.

VIF: variance inflation factor.



family plays an important role in students' career. A study concluded that family support was associated with college students' career development (Metheny & McWhirter, 2013), and family process variables (e.g., warmth, support, attachment, autonomy) impacted a host of career constructs (Whiston & Keller, 2004). Moreover, significant others' social support impacted young adults' career exploration (Creed, Fallon, & Hood, 2009). And in the long run, in high job demand and low-control work situations, nurses were revealed the highest turnover intention. Social support may reduce this turnover rate (Chiu, Chung, Wu, & Ho, 2009). Therefore, the finding indicates that providing student nurses with social support is a useful method to improve their career adaptability, especially the support from family.

There were several limitations in the present study. First, the information concerning all variables of participants was obtained through self-report measures. Student nurses completed the questionnaires in a personal manner which might result in an information bias. Future studies should use multiple measures to accurately assess student nurses' career adaptability and relevant variables. Second, the cross-sectional design limits the causal inferences that might be drawn from the results. The consequences might have a temporal bias on the process. Longitudinal studies are needed to identify the cross-lagged and causal relationship between adversity quotient, clinical learning environment, social support and career adaptability.

## 5. Conclusions

Given the above findings, it is essential for student nurses to promote their career adaptability. In order to achieve this goal, they should improve their ability to cope with adversity, when faced with adverse events. Moreover, clinical teachers should provide student nurses positive clinical learning environment and individualized teaching methods. In addition, nursing teachers should provide more opportunities for nursing students to serve as student leaders, especially baccalaureate student nurses. Parents are also crucial to students' career development. Their support could help their children to improve career adaptability and facilitate a successful transition.

## Acknowledgments

This project is funded by the Natural Science Foundation of Shandong Province [No. ZR2013CM039] and Shandong University [No. 2013ZD038].

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