

Research on the Relationship among the Vulnerability of Village Clinic Doctors, Autonomy Tendency, Professional Identity and Turnover Intention

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Abstract. Objective To analyze the relationship among the vulnerability of rural doctors, autonomy tendency, professional identity and turnover intention. **Methods** Assumption was rested on the qualitative interview and theoretical research, and then regression analysis was adopted to analyze the mutual relationship among variables and verifies these assumptions. **Results** The point of external disturbance force of the village clinic doctors was 3.39 ± 0.46 , including 3.31 ± 0.35 of disturbance from job, and 3.45 ± 0.59 of disturbance from environment. The point of resilient of village clinic doctors was 3.43 ± 0.40 , the instrumental support was 2.57 ± 0.59 , the emotional support was 3.83 ± 0.57 , and the competency was 3.87 ± 0.47 . The village clinic doctors' vulnerability index was 0.50 ± 0.06 , which was in the moderate level on the whole. The regression coefficient of vulnerability to turnover and professional identity are 0.351 and -0.598; the regression coefficient of professional identity to turnover intention is -0.458; the regression coefficient of interaction between autonomy and professional identity to turnover was -0.517. **Conclusion** Vulnerability has a significant positive effect on the turnover intention of village clinic doctors, which is mainly through the role of professional identity. Autonomy tendency has a negative influence on professional identity and turnover intention.

1.Introduction

Village clinic doctors come from the construction of rural tertiary health service network. They have made great contributions in maintaining the health of rural residents for a long time with low resources. At present, the village clinic doctors are still the main force of rural health work, and it plays an irreplaceable role in ensuring the health of rural residents. It was known as the bottom of China's rural three-tier preventive network, the rural public health "gatekeeper", and the "umbrella" of rural resident's health [1]. With the increasing of the rural social aging and hollowing out, deepening of medical reform, and the growing of health needs of residents, village clinic doctors gradually faced with low income, high risks, no pension, poor career prospects and other factors in a comprehensive way[2-4]. Thus, it results the increasing of vulnerability, decline of job stability, and high turnover intention [5-7]. In this study, the method of set pair analysis (SPA) is adopted to calculate the vulnerability index from the dimension of external disturbance and resilient, then the method of multiple linear regression is adopted to analysis the relationship among vulnerability, autonomy tendency, professional identity and turnover intention. This study has a profound theoretical and

realistic meaning in the stability of village clinic doctors and the sustainable development of rural three-tier preventive network.

2. Data Resources and Research Methods

2.1 Research Instruments.

The questionnaire designed by our group was adopted to investigate the basic situation and living conditions, job satisfaction, job training, salary and practicing environment of village clinic doctors, as well as their competency, social status, career attitude and interpersonal relationship. All these items are scored by likert-type scale using 5 points and the highest score is 5.

Through factor analysis with maximum variance orthogonal rotation, a total of 7 common factors are identified, including disturbance from job (3 items), disturbance from environment (4 items), competency (10 items), instrumental support (4 items), emotional support (2 items), autonomy tendency (3 items), and turnover intention (3 items). Their cumulative variance contribution rate is 71.95%. The factor loading of all the items in their common factors is higher than 0.5, which shows a high internal construction validity. By reliability analysis, Cronbach 's alpha of every dimension are 0.769, 0.801, 0.840, 0.880, 0.851, 0.720 and 0.880 respectively, indicating the content of the questionnaire measurement subject has higher reliability.

2.2 Research Subject.

Multi-stage stratified random sampling method was adopted to select samples. Research samples are from 54 towns in Shandong Province based on different economic levels, which are selected from eighteen counties of six cities October and November in 2015. The details are as follows: two cities are selected from each developed, developing and undeveloped areas, then three counties are select by the same principle from each city, then three towns are select by the same principle from each county and eighteen to twenty village clinic doctors are selected to do the questionnaires. All the 1035 village clinic doctors returned the questionnaire, in which, 1018 questionnaires were effective, Of the rate, men account for 67.3%, women account for 32.7%. The average age is 44.9 ± 10.8 , doctors under 30 years old account for 5.1%, ~ 40 years old account for 37.9%, ~ 50 years old account for 30.0%, ~ 60 years old account for 15.0%, doctors elder than 61 years old account for 12.0%.

As to their education background, doctors under junior high school degree(including junior high school degree) account for 6.4%, doctors with a technical secondary school degree account for 76.1%, while doctors with college degree or above account for 17.5% As to their professional titles, doctors with no title account for 68.2%, the ones with primary title account for 19.5% and the rest with intermediate title or above account for 12.3%.

2.3 Theoretical Framework.

Vulnerability was first proposed by the American scholar G.F White [8], which was gradually introduced into other disciplinary fields. Although different fields has different concepts of vulnerability, generally speaking, they conform to the same measurement dimensions which include external disturbance within the system and coping ability to external disturbance. [9-11]. The attribute of the system is the reflection of the common state that the system is affected by external disturbance. And it can only be reflected by dealing with disturbance.

2.4 Research Methods.

While giving out questionnaires to research subjects, the researcher also carries out qualitative interviews to relevant experts, village clinic doctors and basic health management staff. Firstly, theoretical analysis and assumptions are established based on the data from qualitative interviews. Then, the researcher need to verify the relevant assumptions.

Set Pair Analysis also be employed to calculate vulnerability scores of village clinic doctors. SPA is mainly used in uncertain analysis of complex system, and the core idea is to analyze the uncertain and certain factors in a couple of set. Based on the property of sets, the uncertainty is named "difference" and certainty is divided into "opposite" and "identity". SPA analyses things and its system through "difference", "opposite" and "identity" [12].

Based on the above ideas, set M as the evaluation of village clinic doctors vulnerability index, and N as evaluation criteria of village clinic doctors, M and N junction synthesis set pair $H = \{M, N\}$. The economy of village health vulnerability can be expressed as $Q = \{E, G, W, D\}$, in which E is the evaluation programs (m), G for the two indicators of the evaluation schemes (n), W is the index weight (in this study assumes equal weight of each index and 1 for both), D equals evaluation matrix of Q. And the index value is d_{kp} ($k=1,2,\dots P=1,2; m,\dots N$). Then, the best and worst index among evaluation programs should be settled, which form the optimal set U and the worst set V. Furthermore, we can calculate the opposite degree c_{kp} and identity degree a_{kp} of d_{kp} (it can be verified through equation 1 or equation 2). A_k in H and the optimal scheme in H similarity index r_k (formula 3-5) also can be calculated [16-17].

Negative relationship between d_{kp} and evaluation results:
$$\begin{cases} c_{kp} = \frac{d_{kp}}{U_p + V_p} \\ a_{kp} = \frac{U_p V_p}{d_{kp}(U_p + V_p)} \end{cases} \quad (1)$$

Positive relationship between d_{kp} and evaluation results:
$$\begin{cases} c_{kp} = \frac{U_p V_p}{d_{kp}(U_p + V_p)} \\ a_{kp} = \frac{d_{kp}}{U_p + V_p} \end{cases} \quad (2)$$

$$r_k = a_k / (a_k + c_k) \quad (3)$$

$$a_k = \sum W_p a_{kp} \quad (4)$$

$$c_k = \sum W_p c_{kp} \quad (5)$$

3. Theoretical Analysis and Hypotheses

3.1 Vulnerability and Turnover Intention.

The vulnerability of village clinic doctors is the state under the combined interaction of external disturbance, self resilient and external support. The increase of vulnerability shows that village clinic doctors are increasingly affected by external disturbance. Consequently, their original function is difficult to perform, turnover intention gradually increased, and job stability decreased. In the interview, some rural doctors said the fact was that there were more requirements, more difficult jobs, and less salary. If he had any chance, he would have quit the job. Based on this, the following hypothesis has been put forward:

H1: The vulnerability of village clinic doctors has a significance positive effect on their turnover intention.

3.2 Intermediary Role of Professional Identity.

Research has shown that [7,13-14] since the new medical reform, workload of village clinic doctors has been increased, the work difficulty has been increased and the work pressure has been on the increase. The serious shortage of work income, security system and other instrumental support caused the continuous decline of professional identity of village clinic doctors. Furthermore, the reform of rural teachers, increase of rural migrant workers and other changes in social environment has aggravated doubts about their professional value. The decline of professional identity directly leads to the increase of turnover intention. During the interview, some village clinic doctors expressed that the current status of village clinic doctors were different, but it used to be a glorious career. They also said that they needed to work the whole day to treat patients even during night with low salary of 2000 RMB per month. And the poor salary even can not afford the school tuition of their children. They also said that they were brothers with rural teachers. But it was different that rural teachers had a high income and security with the reform of rural teachers while they were still in the same condition. Now more and more people are working in the city and they earn more than village clinic doctors. It is not the low consciousness of village clinic doctors that no one wants to work in this field, it is the low salary and low conditions that lead to the awkward situation. Based on this, the following hypotheses have been put forward:

H2a: The vulnerability of village clinic doctors has a negative effect on their professional identity.

H2b: The Professional identity of village clinic doctors has a notable negative effect on their turnover intention.

H2c: The vulnerability of rural doctors has an indirect effect on their turnover intention through the negative effect on their Professional identity.

3.3 Regulating Effect of Autonomy Tendency.

Autonomy tendency is the embodiment of self values, personality and other intrinsic characteristics of employees, which refers to the tendency of individuals preference in accordance with their hobbies or relatively independent environments [15]. Research shows that [16] autonomy tendency has a positive effect on employee engagement, psychological ownership and so on. But it has an insignificant effect on professional identity. Based on this, the following hypotheses have been put forward:

H3a: Autonomy tendency can't adjust the effect from vulnerability to professional identity.

H3b: Autonomy tendency can negatively adjust the effect from professional identity of village clinic doctors to their turnover intention.

4. Data Analysis and Results

4.1 Vulnerability Status of Village Clinic Doctors.

Analysis shows that overall external disturbance force of village clinic doctors is 3.39 ± 0.46 , among which disturbance force from work is 3.31 ± 0.35 and disturbance force from environment is 3.47 ± 0.59 . And resilient of village clinic doctors is 3.43 ± 0.40 , among which instrumental support is 2.57 ± 0.59 , emotional support is 3.83 ± 0.27 , competency is 3.87 ± 0.47 . The overall vulnerability of village clinic doctors is 0.50 ± 0.06 points based on SPA. The clustering analysis indicates that 27.24% of vulnerability level belongs to the state of "high level", 30.30% is in the "medium" level. Differences of vulnerability among people with different demographic characteristics: the differences of village clinic doctors lie in the differences of age, education background and practice qualification ($P < 0.05$); those who have low working periods, high education background and practicing doctors' qualifications is higher in vulnerability index.

4.2 Current Situation of Autonomy Tendency, Professional Identity and Turnover Intention of Village Clinic Doctors.

Analysis shows that autonomy score is 4.29 ± 0.59 , professional identity score is 3.11 ± 0.74 and turnover intention is 2.79 ± 1.07 . Different scores in autonomy tendency lie in the differences of different education background of village clinic doctors, while different scores in professional identity and turnover intention lie in the differences of working periods ($P < 0.05$). Village clinic doctors who graduated from technical secondary school have relatively low autonomy scores while those who have a high seniority have higher professional identity scores and lower turnover intention scores.

4.3 Correlation Analysis of Variables.

Test results of the correlation among variables are shown in table 1. There is a positive correlation relationship among the vulnerability, autonomy, professional identity and turnover intention of village clinic doctors.

Table 1 Correlation analysis of variables

variables	Working age	Education background	Practice qualification	Vulnerability	Autonomy tendency	Professional identity	Turnover intention
Working age	1						
Education background	-0.337**	1					
Practice qualification	0.123**	0.046	1				
vulnerability	-0.199**	0.152**	0.076*	1			
Autonomy tendency	-0.035	0.067*	0.014	-0.072*	1		
Professional identity	0.082**	-0.041	-0.008	-0.589**	0.165**	1	
Turnover intention	-0.091**	0.110	0.190	0.357*	-0.139**	0.165**	1

* $P < 0.05$, ** $P < 0.014$

4.4 Regression Analysis and Hypotheses Testing.

4.4.1 Direct Effect Testing of Vulnerability on Turnover Intention

As is shown in model 6, table 2, the regression coefficient of vulnerability to turnover intention is 0.351, that is to say, vulnerability has a significant positive effect on turnover intention. Thus H1 is validated.

4.4.2 Examination of the Mediating Role of Professional Identity

As is shown in model 2, table 2, the regression coefficient of vulnerability on professional identity is -0.598, indicating that vulnerability of village clinic doctors has a significant negative impact on professional identity. Hence, H2a is validated. In Model 7, after the introduction of the role of Professional identity, the regression coefficient of professional identity on turnover intention is -0.458, which indicates that professional identity has a negative impact on turnover intention. So H2b was validated. After the introduction of professional identity, the effect of vulnerability on the turnover intention has decreased (regression coefficient decreases from 0.351 to 0.078). Therefore, it can be considered that Professional identity has a intermediary role between vulnerability and turnover intention. So H2c is validated.

4.4.3 Examination of the Mediating Role of Autonomy Tendency

As is shown in model 4, table 2, after the introduction of the interaction terms of vulnerability and autonomy, the regression coefficient of interaction terms on professional identity is 0.006, which indicates that there is no mediating role between autonomy tendency and professional identity. Thus H3a is validated. In model 9, after the introduction of the interaction terms of vulnerability and autonomy, the regression coefficient of interaction terms on turnover intention is -0.517, which shows that autonomy has a notable negative adjustment between Professional identity and turnover intention. Therefore H3b is validated.

Table 2 Regression analysis of variables

variables	Professional identity					Turnover intention			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Control variables									
Working age	0.066*	-0.024	-0.012	-0.012	-0.101	-0.041	-0.050	-0.054	-0.057*
Education background	-0.014	0.023	0.017	0.017	-0.026	-0.051	-0.041	-0.046	-0.041
Practice qualification	-0.012	0.035	0.033	0.033	0.026	-0.005	0.012	-0.001	0.011
Independent variables									
vulnerability		-0.598**	-0.587**	-0.592**		0.351**	0.078	0.343**	0.097
Moderator variables									
Autonomy tendency			0.033	0.127				0.125**	0.165**
Mediating variables									
Professional identity							-0.458**		
Interaction items									
vulnerability × autonomy tendency				0.006					
Professional identity × autonomy tendency									-0.517**
Ajusted R ²	0.002	0.345	0.364	0.363	0.006	0.123	0.259	0.140	0.253
F	1.781	121.30**	105.19**	87.56**	3.094	32.78*	64.49**	30.64**	52.28**

*P<0.05, **P<0.014

5. Discussion and Implications

5.1 Vulnerability has a significance positive effect on the turnover intention of village clinic doctors. The reducing of vulnerability is vital for the stabilization of village clinic doctors.

Analysis shows that vulnerability has a positive effect on turnover intention. Therefore, the reducing of vulnerability is meaningful for the maintenance of rural three-tier health preventive network. Vulnerability results from the interaction of external disturbance and resilient of village clinic doctors, which can be improved by increasing salary, improving pension system, solving medical disputes, improving living conditions and narrowing the income gap between village clinic doctors and the same kind group in other districts. In this way can we lessen the external disturbance effect and improve the resilient of village clinic doctors.

5.2 It is through the effect on professional identity that vulnerability has an influence on turnover intention of village clinic doctors. Thus , it is the crux to improve the professional identity of village clinic doctors.

The analysis indicates that the main effect path of vulnerability to the turnover intention of village clinic doctors is vulnerability affects turnover intention through professional identity, during which professional identity is the hinge. Therefore, comprehensive measures should be taken to enhance the attractiveness of the occupation to improve the professional identity of village clinic doctors. Specifically, a series of professional titles can be established to broaden career development channels of village clinic doctors. And the post allowance should be implemented and enhanced to improve

their incomes. Besides, positive publicity should be increased to improve the social image of village clinic doctors..

5.3 The autonomy tendency has a negative regulating effect on the turnover intention of village clinic doctors. Hence, the improvement of autonomy tendency is an effective way to stabilize the existing of village clinic doctors.

The analysis signifies that turnover intention of village clinic doctors can be lessened by improving their autonomy tendency. Therefore, the work initiative and enthusiasm of village clinic doctors can be improved by increasing the income distribution policy incentives and enhancing the implementation of performance wage. And working responsibility of village clinic doctors can be promoted by strengthening post responsibility training and perfecting the supervision and management mechanism, which can prevent the generation of turnover intention of village clinic doctors.

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