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Analysis on influencing factors of clinical teachers' job satisfaction by structural equation model

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ABSTRACT: [Research objective] Analyze the influencing factors of clinical teachers' job satisfaction. [Research method] The ERG theory was used as the framework to design the questionnaires. Data were analyzed by structural equation model for investigating the influencing factors. [Research result] The modified model shows that factors of existence needs and growth needs have direct influence on the job satisfaction of clinical teachers, the influence coefficients are 0.540 and 0.380. The three influencing factors have positive effects on each other, and the correlation coefficients are 0.620, 0.400 and 0.330 respectively. [Research conclusion] Relevant departments should take active measures to improve job satisfaction of clinical teachers from two aspects: existence needs and growth needs, and to improve their work enthusiasm and teaching quality.

Keywords: clinical teachers; job satisfaction; structural equation model; influence factors

1 INTRODUCTION

In China, Clinical teachers refer to the medical staffs working in the university affiliated hospital or teaching hospital, who meet the teaching requirements, have the corresponding teaching abilities, and take the teaching task^[1]. Clinical teachers play an important role in improving medical qualities of medical students, developing medical education and improving the comprehensive strength of the hospital^[2], so the status of clinical teachers cannot be ignored.

Clinical teachers should not only be engaged in health services, but also undertake the teaching tasks of clinical theory course or practice of medical students and the scientific research work^[3]. Many aspects, such as clinical work pressure, teaching pressure and life pressure have influenced the occupation

of clinical teachers, because of "multiple identities" of clinical teachers. With the increasing requirement of health care reform to doctors and the medical student education, as well as the increasingly tense relationships between doctors and patients, the working pressure of clinical teachers will continue increasingly^[4]. This phenomenon not only brings negative impacts on the stability of clinical teachers, but also has negative impacts on the development of higher medical education.

Wang Xiuling finds in the study that the present situation of working condition of clinical teachers is not good, so job burnout has been a very common phenomenon^[5]. In 2004 China's "job burnout index" survey^[6], job burnout in the medical and education vocations is particularly prominent, and the proportions of job burnout in health care and education vocations are 37.2% and 50.3% respectively. Yang Xiuxian finds that the incidence of job burnout of

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clinical teachers is higher than that of normal population, which means the clinical teachers are at high risk of job burnout, but also shows that clinical teachers have great work pressure^[7]. Li Qingyan believes that clinical teachers' job satisfaction is not high, and the performance of job burnout displays on the appearance, such as physical fatigue, depression and decline of working enthusiasm, which makes clinical teachers lose the enthusiasm of their teaching work, and has negative impacts on the improvement of teaching quality^[8]. Wang Kaixuan also found in the survey that the teaching and scientific research enthusiasm of the majority of clinical teachers in medical colleges or universities is not high^[9]. The study of Gong Weiling on the professional pressure of teachers in universities shows that pressure will lead to unpleasant emotions for teachers, like nervousness, anxiety, restlessness, helplessness and so on, which triggers confidence decline and job dissatisfaction^[10]. Huang Danhua believes that professional pressure of clinical teachers is especially significant, because it has threatened their physical and mental health, and also has brought many negative effects to clinical teachers' job satisfaction^[11].

In view of the present situation of clinical teachers' poor working condition, this study adopts the perspective of ERG human needs theory, potential factors which may influence the job satisfaction of clinical teachers are classified. SEM is used to analyze these potential factors, the main factors that influence the job satisfaction of clinical teachers are obtained, and then the suggestion of stability of clinical teachers is put forward. This study provides references for how to improve the stability of clinical teachers, reduce the turnover rate, and improve the level of clinical education.

2 METHODS

2.1 Study population

According to the principle of stratified sampling, two cities were selected randomly in Shandong province on the basis of the level of economic development. The public hospitals in each city were divided into three layers, and 10 hospitals were randomly selected in each layer. 214 clinical teachers were investigated by systematic sampling or cluster sampling. The questionnaire was used to investigate clinical teachers and 2-4 clinical teachers were chosen to conduct in-depth interviews in each hospital.

2.2 Survey instrument

ERG theory was designed for the framework of the questionnaire, including the two parts of demographic variables and job satisfaction. Job satisfaction was divided into 3 dimensions: existence, relatedness and

growth. The questionnaire includes income distribution, work environment, career development, work intensity and other items. Using the Likert scoring method, from "very inconsistent" to "very consistent" in order to score.

2.3 Theories and methods

2.3.1 ERG human needs theory

On the basis of Maslow's hierarchy of needs, what Clayton Alderfer from Yale University has carried on is closer to practical experience, and put forward a new theory of human needs. Clayton believes that human needs should be divided into 3 kinds, which are existence needs, relatedness and growth. In ERG human needs theory, existence needs is related to the basic material needs of human beings, relatedness can be met by communicating with colleagues or other people, and growth will be met by the development of individual's potential and ability^[12].

2.3.2 Structural equation model

The Swedish statistician Karl G. Joreskog proposes the structural equation model. It is a method that can establish, estimate and test the causality. The rapid development of structural equation model makes it become one of the most important tools of multivariate analysis, more and more frequently applied in many fields such as psychology, medicine and so on^[13]. The model tested the relationship between manifest variables, latent variables and error variables, and obtained the direct effects, indirect effects or the total effect of independent variables on the dependent variables^[14].

2.4 Statistical analysis

SPSS19.0 was used to carry out the statistical description of the data and factor analysis and to test reliability and validity of the questionnaire. SEM parameters were estimated by the AMOS maximum likelihood method, and the confirmatory factor analysis was performed.

3 RESULTS

3.1 Characteristics of sample

Among the investigated clinical teachers, there are 143 males (66.8%) and 71 females (33.2%), and 98.6% of them are married. The average age of the investigated clinical teachers is (40.96 ± 5.96) years old. 39.7% of clinical teachers are master's degree, and another 27.6% are PhD or above. 77 clinical teachers are attending physicians, accounting for 36.0%, and 83 clinical teachers are deputy chief physicians, accounting for 38.8%. 65.9% of clinical

Table 1. Results of single factor analysis

Items	Influence factors	Unstandardized coefficients	Std. Error	Standardized coefficients	t
X1	Sense of pride	1.100	0.096	0.619	11.473 ^a
X2	Labor remuneration	1.434	0.129	0.607	11.117 ^a
X3	Work environment	1.551	0.144	0.596	10.799 ^a
X4	Colleague relationship	0.738	0.285	0.175	2.590 ^a
X5	Career future	0.952	0.094	0.573	10.169 ^a
X6	Income distribution	1.497	0.142	0.586	10.523 ^a
X7	Leadership relationship	1.159	0.242	0.313	4.795 ^a
X8	Departmental cooperation	1.633	0.221	0.452	7.378 ^a
X9	Work value	1.049	0.128	0.491	8.212 ^a
X10	Shift duty	1.570	0.141	0.606	11.100 ^a
X11	Work intensity	0.981	0.184	0.344	5.330 ^a
X12	Government protection	1.546	0.148	0.584	10.468 ^a
X13	Personal development	1.667	0.168	0.563	9.908 ^a
X14	Full play	0.935	0.129	0.445	7.234 ^a

Note: ^a $P < 0.01$

teachers have no duties, and department directors only account for 28.9%. The average working life of the investigated clinical teachers is (16.30 ± 7.30) years, and their average monthly income is 3000-5000 yuan, accounting for 57.5%.

3.2 Single factor analysis

In order to explore influence factors of clinical teachers' job satisfaction, job satisfaction of clinical teachers was set as the dependent variable, factors that may affect the degree of satisfaction, such as income distribution, relationship between colleagues, government protection, work intensity, were set as the independent variable, giving single-element linear regression analysis. 14 factors were identified that have linear relationships with the clinical teachers' job satisfaction. Results of single factor analysis are shown in Table 1.

3.3 The reliability and validity test

Using Cronbach's alpha coefficient to test the reliability of all factors that have linear relationships with clinical teachers' job satisfaction. It can be known that the Cronbach's alpha coefficient is 0.864. It is generally believed that when the Cronbach's alpha coefficient is between 0.8-0.9, it shows that the reliability is very good, and the reliability is better when it is between 0.7-0.8^[15]. The questionnaire has a very good internal consistency through the test.

Kaiser proposed that when the statistical value of KMO is greater than 0.80, it is suitable for factor analysis^[16]. After the use of exploratory factor analysis (EFA) test, it shows that $KMO=0.855$, $\chi^2=1622.554$, $df=91$, and $P < 0.0001$ in Bartlett's test. This result proves that it is suitable to carry out factor analysis. 3 common factors are extracted by the varimax method and the extracted common factors are in agreement with the dimension structure of the questionnaire design. According to ERG theory, the common factors

are named as existence needs (F1, Cronbach's alpha coefficient is 0.858), growth needs (F2, Cronbach's alpha coefficient is 0.861), and relatedness needs (F3, Cronbach's alpha coefficient is 0.817). Loadings of the extracted common factors are more than 0.500, the variance contribution rates are 26.20%, 16.97%, and 23.32%, and the cumulative contribution rate is 66.49%, which shows good construct validity. Factor analysis results are shown in Table 2.

Table 2. Results of factor analysis

Items	F1	F2	F3
X6	0.822	0.186	0.179
X2	0.815	0.250	0.043
X3	0.759	0.223	0.299
X12	0.720	0.292	0.079
X10	0.703	0.216	0.219
X11	0.519	-0.017	-0.144
X1	0.279	0.832	0.021
X14	0.121	0.806	0.186
X9	0.050	0.803	0.174
X5	0.341	0.773	-0.007
X13	0.455	0.550	0.222
X7	0.119	0.146	0.862
X4	0.010	-0.018	0.853
X8	0.196	0.281	0.770

3.4 Constructions and evaluation of SEM

Construct the possible structural equation model according to the results of factor analysis and the ERG theory, and the initial model is shown in Figure 1.

The initial model shows that the path coefficient of relatedness needs of job satisfaction is too small, so this path will be deleted. Use GFI, RMR, NFI, PNFI and other indicators of absolute fitness index and relative fitness index to test the fitness of the model. According to the revised index, increase the covariations between error variables e1-e5, e3-e4, e2-e12 and e11-e12, resulting in a modified model as shown in Figure 2.

The fitness evaluation index and the test results of SEM model are shown in Table 2. In terms of absolute

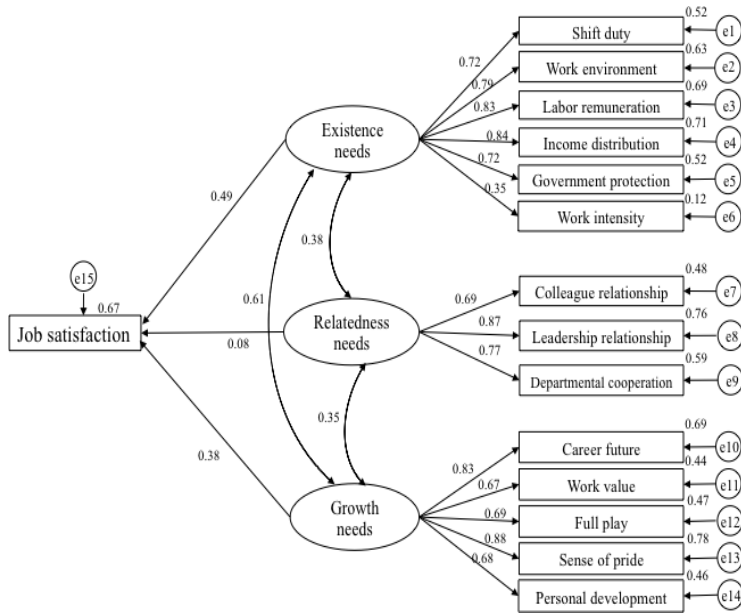


Figure 1. The initial model of SEM

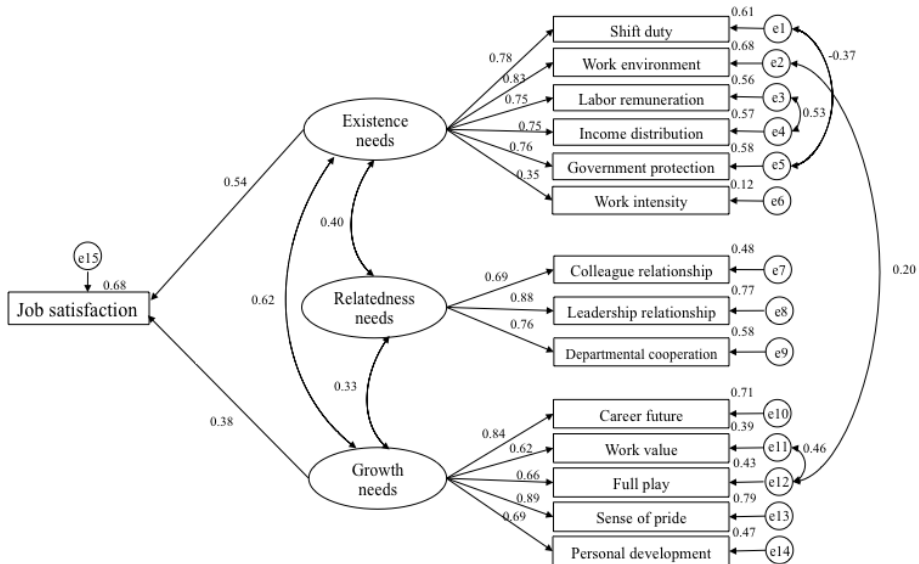


Figure 2. The modified model of SEM

fit measurement, the value of goodness-of-fit index (GFI) is 0.904 and that of root mean square error of approximation (RMSEA) is 0.071. In terms of incremental fit measurement, the value of normed fit index (NFI) is 0.911, that of incremental fit index (IFI) is 0.952, that of comparative fit index (CFI) is 0.951, and that of Tucker-Lewis index (TLI) is 0.937. In terms of parsimonious fit measurement, the value of parsimony-adjusted (PNFI) is 0.711. All the indicators can be accepted as standards^[17], indicating that the model fit is good, as shown in Table 3.

Table 3. Test results of the fitness of SEM.

Index	Fitness Standard	Test value
GFI	>0.90	0.904
RMSEA	<0.08	0.071
NFI	>0.90	0.911
IFI	>0.90	0.952
CFI	>0.90	0.951
TLI	>0.90	0.937
PNFI	>0.50	0.711

3.5 *Analysis on the influencing factors of clinical teachers' job satisfaction*

The modified model shows that factors of existence needs and growth needs have direct influence on the job satisfaction of clinical teachers, and the influence coefficients are 0.540 and 0.380. It shows that the two factors have positive correlation with job satisfaction, and the greatest impact on job satisfaction is the existence needs.

The standardized coefficient of working environment is the biggest (0.830), which indicates that working environment can obviously reflect the evaluation of existence needs of clinical teachers. That of shift duty is also higher, which is 0.780. In growth needs, the standardized coefficient of sense of pride is the highest, which is 0.890, and the second is career future, which is 0.840.

Figure 2 shows that there is a significant positive correlation between existence needs and growth needs, and the correlation coefficient is 0.620; there is a positive correlation between existence needs and relatedness needs, and the correlation coefficient is 0.400; there is a positive correlation between relatedness needs and growth needs, and the correlation coefficients is 0.330.

4 DISCUSSION AND SUGGESTION

4.1 *Existence needs and growth needs have direct impacts on job satisfaction*

It can be seen through the SEM that existence needs and growth needs are positively correlated with job satisfaction, which shows that both of them have direct impacts on job satisfaction and professional loyalty of clinical teachers. ERG human needs theory is different from the theory of Maslow's hierarchy of needs, which did not consider that all kinds of hierarchy of needs are a rigid structure. It shows that the existence needs and relatedness needs of clinical teachers have not been fully met, they still can work for individual growth needs, and different needs can play a role at the same time. Therefore, when the clinical teachers' existence needs and growth needs are satisfied, and the higher the degree of satisfaction of each dimension is, the higher the total satisfaction of their work is, and the stronger the sense of identity is. In addition, the three influencing factors have a positive effect on each other.

4.2 *Existence needs has the greatest influence on job satisfaction*

The influence coefficient of existence needs factor on job satisfaction is 0.540, which is the greatest influence on the job satisfaction of clinical teachers. The existence needs factor is the basis of clinical teachers'

work enthusiasm. In the work, the degree of satisfaction of the income distribution, labor remuneration, working environment, government protection, rationality of duty or off-duty, and working pressure, will influence the enthusiasm of clinical teachers. Clinical teachers as a group of people should do the medical work and teaching tasks, and their mentality will be changed in high requirements and work intensity, which result in that their work enthusiasm and initiative will be volatile. Therefore, only when the basic requirements of clinical teachers are satisfied so as to enable them to gain a sense of security, they can get the driving force of work and make their job satisfaction improve.

4.3 *Provide clinical teachers with good working environment*

In terms of existence needs, the standardized coefficient of work environment is the biggest, which indicates that working environment is very important for clinical teachers. Comfortable working environment is helpful for clinical teachers to maintain a positive working attitude, which is helpful to improve their work efficiency, so it should be active for clinical teachers to create a good working environment. In addition, the harmonious degree of social relationship of clinical teachers, can also affect their work in a certain extent. Therefore, hospitals and universities should facilitate communications between clinical teachers and leaders, colleagues, patients and students, as far as possible to improve social acceptance of clinical teachers, to create a good working environment and social environment.

4.4 *Pay attention to development needs of clinical teachers and enhance their sense of pride*

According to the model, we can conclude that, in terms of growth needs, standardized coefficients of clinical teachers' pride and their career prospects are the largest, which are 0.890 and 0.840 respectively, and it means that pride and career prospects are key factors. It will stimulate them to produce much stronger personal development when the clinical teachers can feel the pride of professional and good development prospects in the work process, and they will be more willing to obtain a better development platform through their own learning. The competition for talents in different levels of hospitals of China is more and more fierce. How to improve the job satisfaction of doctors in different levels hospitals, especially the job satisfaction of clinical teachers, and how to ensure their stability, are urgent problems to be solved as soon as possible. Therefore, government departments or hospitals should attach the great importance to the realization of clinical teachers' own value and the development of personal growth. Through the professional title promotion, business

training and other measures, we should satisfy their career achievements and sense of honor, so as to maintain their enthusiasm, initiative and creativity in their work.

5 CONCLUSION

The importance of clinical teachers as the backbone of higher medical education is self-evident. With the rapid development of society, the mass of people put forward higher requirements for the medical technology and services of medical staffs. It is very important to mobilize the enthusiasm of clinical teachers in hospitals, and improve their job satisfaction, and is of great significance to provide better medical services and training of medical reserve forces. Therefore, we should start with the existence needs and growth needs, by improving their satisfaction with the two kinds of needs, to improve the overall job satisfaction of clinical teachers.

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