

A Study on Occupational and Psychological Stress Status and Countermeasures of “High-Level Talents” in Hainan Provincial People’s Hospital

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Abstract

Objective: To investigate and contrastively analyze the occupational and psychological pressure of “high-level talents” and department directors in Hainan Provincial People’s Hospital, so as to provide countermeasures for the development and management of “high-level talents” engaged in teaching, scientific research and clinical work. **Methods:** Literature study, expert consultation, Occupational Stress Scale (OSI-R) and PCL-C were used. **Results:** The research shows that “high-level talents” have different individual stress response with different educational background. Comparing the individual stress response with different educational background, the “business stress” of “high-level talents” with master’s degree is significantly different from that of doctor’s degree ($t = 0.64, P < 0.001$). The comparison of occupational stress between the high-level talent group and the department director group showed that the index, intensity and frequency of the high-level talent group in the three aspects of work stress, work stress and lack of organizational support were all higher than that of the department director group, with statistical significance ($P < 0.05$). Symptom scores of the two groups were significantly higher in the high-level talent group than in the department director group, with statistical significance ($P < 0.05$). **Conclusion:** Scientific and technological innovation is inseparable from excellent innovation team, and excellent innovation team is inseparable from excellent leading talents. Only by paying attention to “high-level talents”, can we take the path of independent innovation with Chinese characteristics, build a free trade pilot zone for the whole island of Hainan, provide the demand for talents construction in Hainan medical strategic transformation, improve the competitiveness of the hospital to the greatest extent, and better achieve the grand goal of building a research-oriented hospital.

Keywords

Hospital, High-Level Talents, Investigation, Analysis, Countermeasures

1. Introduction

In scientific and technological innovation, the spirit temperament, personality charm and enterprise of “high-level talents” have a decisive influence on the team. One or two “high-level person-times” in discipline construction often determine the status of the research team. When we emphasize teamwork and innovation, we must not ignore the role and value of “high-level person-time” of the team. Based on the research and thinking of the current situation and countermeasures of “high-level talents” in Hainan Provincial People’s Hospital, this topic systematically discusses the current situation, development, existing occupational pressure, occupational health and mental health problems and their causes, as well as the countermeasures to solve the problems. By means of literature review, data collection, investigation and analysis, in-depth interview, expert consultation and field investigation, the “high-level talents” of Hainan Provincial People’s Hospital and the persons in charge of the discipline were interviewed, and the relevant materials in the development, expansion and innovation process of such personnel were investigated and collected. After comprehensive analysis and research, the thesis was put forward. To summarize the successful experience and development countermeasures of “high-level talents” in Hainan Provincial People’s Hospital, and to provide countermeasures for the development and management of “high-level talents” engaged in teaching, scientific research and clinical work, and to provide new ideas and methods for the training and training of more high-level health talents and talent management.

On April 13, 2018, General Secretary Xi Jinping delivered an important speech at the conference celebrating the 30th anniversary of the establishment of Hainan as a special economic zone. He announced to the world that the CPC Central Committee had decided to support the construction of a pilot free trade zone on the whole island of Hainan and support Hainan to gradually explore and steadily promote the construction of a free trade port with Chinese characteristics. There are four major resources in the world: human resources, material resources, financial resources and information resources. Among them, human resource is the “first resource” among all resources (Feng, 2016). In China, a large developing country with a population of more than 1.4 billion, the development of medical and health services has a bearing on the health of millions of Chinese people and is a major livelihood issue. It is the pursuit of human society to improve people’s health and realize the ideal of having access to medical treatment. To realize the ideal we pursue, we cannot do without practitioners in the health industry, especially health professionals, who can apply medical theory

and clinical skills into practice and fulfill the sacred mission of curing diseases and saving people (Liu, 2016). The Medium-and Long-Term Talent Development Plan for Medicine and Health (2011-2020) gives a more detailed description of how to build a team of health professionals, and makes it clear that strengthening the construction of all kinds of health professionals is the main task in the future (Zhang & Li, 2017). This research adopts literature research, expert consulting method, questionnaire survey method, statistical analysis of the combination of qualitative and quantitative methods, such as the people's hospital of Hainan province "high-level talent" professional, psychological pressure in the investigation and comparison analysis, to engage in teaching, scientific research and clinical work of the high-level talent and the development and management countermeasures. To build a pilot free trade zone for the whole island of Hainan, to meet the strategic transformation needs of medical talent construction in Hainan, to study the talent evaluation strategy and evaluation mechanism in line with the actual needs and future development requirements of Hainan medical science, and the countermeasures for "high-level talents" to meet the development needs of the construction of free trade zone in Hainan island.

2. Experimental Subjects and Methods

2.1. Subjects

In March 2021-in May 2021, the expert consulting method, questionnaire survey method is adopted to "high level talented person" in the people's hospital of hainan province and in our department, director of the occupational stress status, such as post-traumatic stress disorder self-report scale investigation, grasp the high-level personnel's working pressure, psychological stress conditions, the analysis and put forward corresponding countermeasures. Fifty-three "high-level talents" were selected as research group, and 55 "current department directors" (not "high-level talents") were selected as research group. Questionnaire survey was conducted to understand the occupational stress and mental health status of "high-level talents".

2.2. Survey Tools

2.2.1. Analysis of the Current Situation of "High-Level Talents" in Hainan Provincial People's Hospital

The number of "high-level talents", educational background, professional title, age hierarchy, income, scientific and technological input and output, talent incentive mechanism, scientific research mechanism and relaxed scientific research environment were investigated and compared with the director of the department of Hainan Provincial People's Hospital (not "high-level talents").

2.2.2. Research and Investigation on the Current Situation of Work Pressure of "High-Level Talents"

Based on the existing work stress theory, this paper conducts a questionnaire survey on the status quo of "high-level talents", explores the work stress status

and compares it with the director of the department of Hainan Provincial People's Hospital (not "high-level talents"), and analyzes the influencing factors of the work stress of "high-level talents". Using "Occupational Stress Scale" to conduct a questionnaire survey, and statistical analysis of the data results, this paper expounds the work stress status of "high-level talents", the main influencing factors, the characteristics of work stress, and puts forward targeted countermeasures and suggestions. Occupational Stress Inventory Revised Edition (OSI-R, 1998). OSI-R (Li et al., 2001) was developed by American psychologist Osipow in 1981 and introduced into clinical use in China after revision in 1998, showing good reliability and validity. It is suitable for the occupational stress test of adult groups in China. The OSI-R scale consists of 3 subscales, 14 subitems and a total of 140 items. It is divided into three subscales: occupational task questionnaire, stress response questionnaire and coping resource questionnaire. The occupational task questionnaire included task overload, task discomfort, task ambiguity, task conflict, responsibility, occupational environment, the individual stress response questionnaire included business, psychology, interpersonal relationship and physical stress response, and the coping resource questionnaire included leisure, self-care, social support and rational handling. Each subitem is made up of 10 items, each of which is rated on five scales, from the least to the most severe, with a score of 1 - 5. In the occupational task and stress response questionnaire, the higher the score, the higher the stress degree. In the coping resource questionnaire, the higher the score, the stronger the strain ability to pressure. The scoring results of OSI-R questionnaire were divided into four grades: high occupational stress (T score ≥ 70), moderate occupational stress (T score between 60 and 69), moderate occupational stress (T score between 40 and 59), and lack of occupational stress (T score < 40). In the subscale of coping resources, it is divided into high lack of coping resources (T score < 30), moderate lack of coping resources (T score between 30 and 39), moderate lack of coping resources (T score between 40 and 59), and strong coping resources (T score ≥ 60).

2.2.3. Posttraumatic Stress Disorder Self-Rating Scale (PCL-C)

The PTSD Checklist-Civilian Version (PCL-C) (Blanchard et al., 1996) was developed by The Behavioral Science Division of The Posttraumatic Stress Disorder Research Center in November 1994 according to The DSM-W. A 17-item PTSD symptom questionnaire. The Chinese translation was completed in July 2003 by Professor Chao Jiang, Professor Jie Zhang from buffalo college of state university of New York and PTSD research center. The PCL-C scale is designed to evaluate the post-traumatic experience of ordinary people in their daily life (in terms of psychological stress). Participants were asked to rate how much they had been disturbed by problems and complaints in the past month on a five-point scale of 1 "not at all," 2 "somewhat," 3 "moderate," 4 "considerable," and 5 "extreme." It can be divided into four factors, respectively: alert increased response; Avoidance response; Recurrent response of traumatic experience; Social

dysfunction response. The higher the score, the higher the probability of PTSD. This table provides a continuous score based on the number and severity of symptoms. It is a multi-dimensional tool to observe PTSD, and can provide a more detailed description of the main symptoms of PTSD for clinical treatment and nursing. It can also be used as a tool to evaluate the effect of psychological intervention in clinical research. In the United States, the PCL-C scale is used to diagnose PTSD symptoms and to evaluate the effectiveness of intervention or treatment of PTSD. The Chinese version of PCL-C has a good reliability and effect, and has a good degree of differentiation. 17-37: No obvious symptoms of PTSD; 38-49: some degree of symptoms of PTSD; 50-85: Has obvious symptoms of PTSD and may be diagnosed with PTSD.

2.2.4. Statistical Methods

Epidata3.1 was used to establish a database to double input data, and SPSS23.0 software was used for data analysis. The data of normal distribution were statistically described by mean \pm standard deviation. The t test or analysis of variance were used to compare the measurement data between different categories or groups. The influencing factors of individual stress, individual stress response and stress response level were analyzed by multiple Logistic regression. The rank sum test of X^2 test or nonparametric test, the test level $\alpha = 0.05$ (bilateral).

3. Results

3.1. Comparison of General Data of the Subjects

A total of 117 questionnaires were issued. After eliminating invalid questionnaires, a total of 108 valid questionnaires were collected in this survey with a recovery rate of 92.3%. The age, length of service, educational level and marital status of the subjects are shown in **Table 1**.

3.2. Comparison of Occupational Stress of High-Level Talents with Different Educational Backgrounds

Table 2 shows that “high-level talents” have different individual stress responses with different educational backgrounds. Pair comparison of individual stress responses with different educational backgrounds shows that the “business stress” of “high-level talents” with master’s degree is significantly different from that of those with doctor’s degree ($t = 0.64$, $P < 0.001$), while other differences have no statistical significance.

Table 1. General information of 108 subjects.

	Age (Year)			Length of service (years)			Record of formal schooling		Marriage status		Birth	
	30 - 39	40 - 49	≥ 50	<5	5 - 10	>10	Undergraduate course	Bachelor degree	Have baby	or above	YES	NO
persons	3	28	77	2	43	63	22	86	96	12	13	95
Composition than (%)	2.8	25.9	71.3	1.9	39.8	58.3	20.4	79.6	88.9	11.1	12.0	88.0

Table 2. Comparison of stress response levels of “high-level talents” with different educational levels ($\bar{x} \pm s$).

Group	Individual stress response	Business stress response	Psychological tension response	Interpersonal tension response	Somatic tension response
Undergraduate course (8)	92.96 ± 14.97	20.98 ± 3.99	25.01 ± 5.20	23.97 ± 3.71	22.96 ± 5.40
A master’s degree (23)	91.19 ± 11.26	22.37 ± 1.82	23.65 ± 4.57	23.37 ± 2.41	21.83 ± 4.83
Dr.	83.51 ± 19.77	17.76 ± 4.353	22.14 ± 5.21	22.51 ± 5.12	23.14 ± 6.49
F value	1.65	1.04	1.07	0.48	0.32
P value	0.204	<0.001	0.351	0.621	0.731

3.3. Comparison of Stress Response Levels between the Department Director Group and the High-Level Talent Group

As can be seen from **Table 3**, there is no significant difference in individual stress response between the high-level talent group and the department director group. Hospitals have higher requirements for “high-level talents”, who are required to have achievements in the forefront of science and technology in their field, have international vision and professional knowledge, and have higher requirements in terms of comprehensive effect. If you don’t want to be eliminated by the hospital and society, you need to spend more time and energy in work (Yu et al., 2019).

3.4. Comparison of Occupational Stress between Department Director Group and High-Level Talent Group

The comparison of occupational stress between the high-level talent group and the department director group showed that the index, intensity and frequency of the high-level talent group in the three aspects of work stress, work stress and lack of organizational support were all higher than that of the department director group, with statistical significance ($P < 0.05$). It indicates that “high-level talents” have a higher degree of stress in medical, teaching and scientific research than “department directors”, as shown in **Table 4**.

3.5. Comparison of Post-Traumatic Stress Disorder (PCL-C) Scores between the High-Level Talent Group and the Department Director Group

Symptom scores of the two groups were significantly higher in the high-level talent group than in the department director group for intrusive symptoms, high alertness, avoidance symptoms and PCL-C total scores ($P < 0.05$, $P < 0.01$), as shown in **Table 5**.

4. Discussion

Occupational stress is caused by the interaction between individual characteristics and working environment factors (Lu, 2019). In the comparison of “high-level talents” with different educational backgrounds, the vocational tension

Table 3. Comparison of stress response levels between the two groups ($\bar{x} \pm s$).

Group	Individual stress response	Business stress response	Psychological tension response	Interpersonal tension response	Somatic tension response
Section director group (55)	90.01 ± 13.01	21.02 ± 3.98	24.01 ± 5.02	22.98 ± 4.30	21.97 ± 5.02
High-level talent group (53)	92.99 ± 15.99	22.01 ± 3.98	25.00 ± 5.31	24.01 ± 2.98	22.99 ± 5.99
T value	1.06	1.29	1.00	1.45	0.96
P value	0.292	0.199	0.322	0.150	0.341

Table 4. Comparison of occupational stress between department director group and high-level talent group (M, Q).

indicators		Section director group (55)	High-level talent group (53)	Z value	P value
Work stress	M	4986.00	6596.00	-5.002	<0.001
Work stress index	Q	73,017.00	9901.00		
Intensity of work	M	81.90	111.98	-4.600	<0.001
	Q	68.96	82.90		
Frequency of work stress	M	54.93	61.89	-2.853	<0.005
	Q	107.90	128.98		
Pressure of work	M	4901.20	6299.90	-3.901	0.002
Working pressure index	Q	6698.90	9801.00		
Working pressure intensity	M	83.95	111.97	-4.679	<0.001
Working pressure Frequency	M	57.96	59.90	-2.676	<0.005
	Q	101.95	120.93		
Lack of torganizational support	M	5301.00	6672.90	-3.009	0.002
	Q	7101.00	9859.90		
Lack of intensity in job support	M	84.97	109.90	-3.669	<0.001
	Q	70.98	84.93		
Lack of frequency in job support	M	54.97	60.90	-2.86	<0.001
	Q	107.93	121.97		

Table 5. Comparison of post-traumatic stress disorder (PCL-C) scores between the high-level talent group and the department director group ($\bar{x} \pm s$).

Symptoms of stress disorder	Section director group (55)	High-level talent group (53)	T value	P value
Intrusive symptoms	71.98 ± 12.01	32.01 ± 13.00	16.58	<0.001
High alertness	73.97 ± 9.16	31.94 ± 7.59	26.00	<0.001
Withdrawal symptoms	54.06 ± 9.96	40.59 ± 12.97	6.04	<0.001
PCL-C	64.97 ± 8.59	38.98 ± 7.07	17.20	<0.001

of “high-level talents” with bachelor’s degree is higher than that of master’s degree and doctor’s degree, which indicates that the higher the educational background is, the lower the vocational tension is. This is also because at present, general hospitals have higher and higher educational requirements on medical

staff, and doctors undertake greater clinical, teaching and scientific research tasks. Doctors with lower educational qualifications face greater competitive pressure and higher professional stress level (Wang, 2018). This survey will survey two groups of people, “high-level talents” and “department directors”. The work pressure and work pressure index, intensity and frequency of “high-level talents” are higher than those of “department directors”. This may be due to the fact that hospital leaders require heavy work tasks and strong work responsibilities for “high-level talents”, which causes professional pressure. It is suggested that the occupational population of “high-level talents” has a greater risk of mental and psychological problems, and the social support they receive is lower than that of “department directors”, which should be attached great importance to by health authorities, units and society (Liu, 2008).

In this study, it was found that the probability of psychological stress of “high-level talents” was significantly higher than that of “department director”, and the score of high alertness, intruder symptom and PCL-C were also higher than that of “department director”. “High-level talents” cannot get rid of the painful memories of the event, repeatedly experience the mental pain of touching the scene, and show high alertness such as irritability and irritability (Evren et al., 2018). At the same time, this study showed that “high-level talents” were accompanied by obvious depression and anxiety, and regression analysis also confirmed that depression and anxiety were important influencing factors for the total score of PCL-C, which was similar to the results of previous studies. Negative events lead to a decline in the psychological endurance of “high-level talents”, unable to maintain a healthy and positive mental state, and prone to pessimism, disappointment and anxiety (Murphy et al., 2017). Because “high-level talents” are in negative emotional states such as depression and anxiety, they tend to exaggerate the severity of life events, which aggravates the psychological stress reaction of “high-level talents”. The negative physical and mental effects of life events on “high-level talents” are not simply linear, but also influenced by the environment, individual cognitive evaluation, coping style, social support, personality characteristics, life experience and other factors (Zhan et al., 2019). When the inner conflicts of “high-level talents” cannot be well solved, they have poor self-guidance, lack of confidence and hope for recovery, and cannot correctly evaluate their own gains and losses, which are manifested as low mood, easy irritation, anxiety, etc. (Cao & Song, 2018). In short, high-level talents play an important role in the development of hospitals. Hospitals should aim at the needs of high-level talents, not only to meet the material needs, but also to pay attention to cultural construction and adjust the organizational structure to enhance the soft power of hospitals, so as to create a platform suitable for talent development. Psychological intervention should be carried out when necessary to improve the mental state and the impact of negative life events on the hospital talents. At the same time, hospitals should not focus on introduction and neglect training, and should not only attract and retain people (Gong et al., 2018). Strengthen talent training, improve the overall level of the hospital, to provide

talent intelligence support for the sustainable development of the hospital.

5. Conclusion

With the development of industrialization, information technology, urbanization and modern science and technology, people's work stress is constantly increasing, and the study of work stress has become an important category of psychology, management, medicine and sociology (Yuan & Sun, 2018). In this study, it will focus on the causes of the work pressure of "high-level talents" in Hainan Provincial People's Hospital, as well as the corresponding individual responses and various individual coping styles under this situation. At the same time, the increase of personal psychological pressure caused by work pressure, the occurrence of negative emotions such as irritability and depression, physical discomfort and chronic fatigue syndrome lead to the physical and mental health damage of "high-level talents" and affects their work efficiency. All these are the significance of studying the work stress and mental health of "high-level talents". The medical service environment, team communication, career growth, organizational communication, leadership and management encountered by scientific research and technical personnel in their work positions, as well as various occupational negative task problems encountered in specific work tasks, were examined as well as the nervous response of "high-level talents" and the investigation of coping resources in such a specific environment (Wang et al., 2016). Therefore, the research on the current situation of work pressure of "high-level talents" will enable us to better understand the work pressure and psychological pressure of "high-level talents" group, so as to put forward corresponding countermeasures and suggestions, improve the working environment, guarantee the mental and physical health of researchers, and improve the efficiency of scientific research. Job stress status of "high-level personnel" group, will allow us to better understand the current work of the "high-level personnel", put forward the corresponding improvement Suggestions, is not only beneficial to scientific and technological personnel's own physical and mental health, but also to improve its work efficiency, better work on research, promote the development of science and technology innovation (Zhan et al., 2019). The relationship between evaluation mechanism, talent management and science and technology management is discussed, and the application of strategic mechanism research in talent evaluation reform of Hainan Provincial People's Hospital is demonstrated. The establishment of the evaluation index system will provide a new thinking and work experience for the health service management in Hainan Province to meet the needs of talent construction in Hainan's medical strategic transformation.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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