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Original Article

The status quo of the occupational identity of the basic-level health technicians in Qiqihar City: an investigation and analysis

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Abstract: Objective: To investigate the occupational identity of primary health technicians in Qiqihar City and to analyze its influencing factors. Methods: From September 2020 to October 2020, 436 primary health technicians were selected from the primary health centers in Qiqihar City using the convenience sampling method. After eight invalid questionnaires were excluded, the total number cases was 428. The questionnaires were used to conduct surveys and perform a data analysis. Results: In Qiqihar City, the primary health technicians are densely distributed among community hospitals, township hospitals, and village clinics. The personnel include general practitioners, specialists, medical technicians, Chinese medicine practitioners, and nurses. The occupational identity of the basic-level health technicians in Qiqihar is at a medium level. The total job stressor scores among the primary health technical personnel in Qiqihar City and the total satisfaction scores are at the moderate level. The scores and total scores of each dimension of the job stressor scale were negatively correlated with the occupational identity scores ($P<0.01$). The scores and total scores of each dimension on the satisfaction scale demonstrated a positive correlation with the total professional identity scores ($P<0.01$). A very notable difference was found in the ages and years of work experience in the occupational identity scores in our univariate analysis ($P<0.05$). Our multiple linear regression analysis revealed that years of work experience, work pressure, and job satisfaction are the influencing factors of the status quo of the occupational identity of the basic-level health technicians ($P<0.01$). Conclusion: Years of work experience, work pressure, and the job satisfaction of primary health technicians are the influencing factors of their professional identity. Thus, strengthening humanistic care and communication, alleviating the psychological pressure of basic-level health technicians, rationalizing the work tasks, and providing more training and learning opportunities remain urgent tasks for boosting the professional identity of basic-level health technicians.

Keywords: Qiqihar City, basic-level health technicians, professional identity, influencing factors

Introduction

Professional self-identity is a multi-disciplinary concept of perception towards professional goals, social values, and other factors. It is consistent with the evaluation and expectations of occupations from the perspective of society, that is, individuals' positive evaluations on other people's or groups' related occupations [1, 2]. Basic-level health technicians are viewed as medical personnel working in basic-level hospitals. As important members of the medical system, their professional self-identity is often connected to multiple systems support and influence. With the reform of our country's medical system, the relationship between the medical staff and the patients has increasingly become tense. The health technicians' overwhelming workloads and the implementation of high-quality medical services cause clinical primary care technicians to feel anxiety and pressure for long periods, and they are even susceptible to violent injuries [3, 4]. Due to the lack of social recognition and the influence of various factors, it probably debases the occupational status of primary health technicians, reduces their job satisfaction, and further prompts the loss of primary health technicians. The main goal of the present research is to improve professional self-identity of basic-level health technicians by investigating the status quo of the professional self-identity of basic-level health technicians and analyzing the related factors.

Materials and methods

Survey objective

Qiqihar has 2 million urban residents, including 1.2 million in its seven districts, and community health services have been carried out in every neighborhood. As of the end of December 2020, there are 38 community health service centers in the urban areas, 23 community health service stations, 20 community health service centers in the 9 counties, 7 community health service stations with a service coverage rate of 100, and 55 community health services in the urban areas, and except for the newly built institutions, most are included in the management of the medical insurance system. In order to fully understand the current situation of the allocation of human resources in the Qiqihar Community Health Service Center, accelerate the construction of the community health talent team, and promote the development of primary health services, starting from September 2020 to October 2020, 436 primary health technicians were selected from among 38 community health service centers and 23 urban areas in seven districts in Qiqihar City (Longsha District, Tiefeng District, Jianhua District, Fulaerji District, Angangxi District, Nianzishan District, Meilis District) and a city (Nehe City), totaling 61 community health service agencies. The data on the allocation of human resources comes from *Qiqihar City's 2020 Statistical Yearbook and Qiqihar City's 2020 Community Health Service Organization Statistical Report*, so it is representative. Inclusion criteria: (1) On-the-job medical staff who had obtained professional qualification certificates, (2) Medical staff who had been engaged in clinical work in hospitals for ≥1 year, and (3) Medical staff who voluntarily participated in this survey. Exclusion criteria: (1) Medical staff involved in advanced studies, internships, and administrative positions, (2) Those who were unable to fill out the questionnaire because they were away or on leave. The investigation was approved by the relevant departments of each hospital, and the study protocol of the present investigation received ethical clearance from the hospital. All participants to the present study provided written informed consent.

Methods

Survey method

The questionnaires were formulated and issued under the guidance of investigators who were uniformly trained by the medical department of each hospital. The questionnaires were distributed and retrieved on the spot. A total of 436 questionnaires were released, and 436 were retrieved. Eight invalid questionnaires were excluded, so the effective recovery rate was 98.17% (428/436).

Survey tools

General information survey form: The form includes questions on gender, age, marital status, educational background, years of work experience, professional title, and most-recent health check, and the number of medical leave days per year, etc.

Occupational identity scale: The occupational identity scale [5] covers occupational cognition assessment, occupational social support, occupational social skills, occupational self-reflection, and occupational frustration. There are 5 dimensions involving 30 items. A 5-point Likert scale was applied to score each item, with the total possible score ranging from 30 to 150 points. A higher score indicates better occupational identity.

Job stressors questionnaire: The job stressor questionnaire [6] includes workload, medical professional work, work risk, patient and family member attitudes, and interpersonal relationships. There are a total of 5 dimensions and 22 items, with each item being scored using 5-point Likert scale. The higher the score, the greater the work pressure on the primary health technicians.

Job Satisfaction Scale: Job Satisfaction Scale [7] includes scheduling, wellbeing, career development, work-family conflict, collegial relations, social opportunities, work being praised and recognized, job control, and sense of responsibility. There are 8 factors covering 31 items in total, and each item is scored using a 5-point Likert scale. The total possible score ranges from 31 to 155 points. The score is directly proportional to job satisfaction.

Table 1. Distribution of the primary health technicians in Qiqihar City

Classification	Number (n)	Ratio (%)
Sites		
Community hospitals	184	42.99
Township hospitals	143	33.41
Village clinics	101	23.6
Profession		
General practitioners	201	46.96
Specialists	100	23.36
Medical technicians	40	9.35
Chinese medicine practitioners	37	8.65
Nurses	50	11.68

Table 2. Occupational identity scores of the basic-level health technicians in Qiqihar City (n=428)

Dimensions	Number of items	Score (x ± s, points)
Occupational cognitive evaluation	9	25.89±4.23
Occupational social support	6	18.43±4.18
Occupational self-reflection	6	15.54±4.22
Occupational social skills	6	17.76±4.43
Occupational frustration response	3	8.75±1.89
Total score	30	86.37±18.72

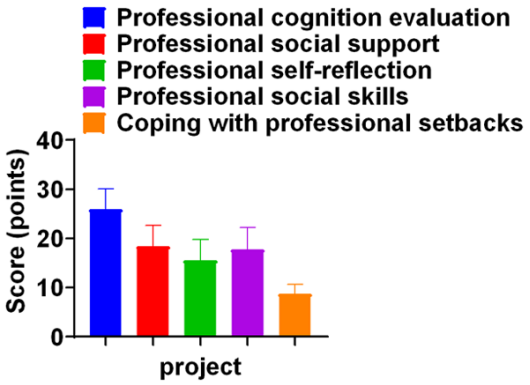

Figure 1. Occupational identity scores of the basic-level health technicians in Qiqihar City.

Statistical analysis

All the statistical analyses were carried out using the commercial software "Statistical Package for the Social Sciences" (IBM SPSS software for Windows, version 21.0, IBM Corp., Armonk, NY, USA; released 2012) after recording the data. The measurement data were represented by ($\bar{x}$ ± s), the comparisons between groups were examined using t tests, and the comparisons among groups were examined using analyses of variance. The correlation was conducted using Pearson correlation analyses. The regression analysis method was used to analyze the influencing factors of the occupational identity of primary health technicians. For all the statistical analyses, a *p*-value less than 0.05 was considered statistically significant.

Results

Distribution of the primary health technicians

In Qiqihar City, the primary health technicians are densely distributed among community hospitals, township hospitals, and village clinics. The personnel include general practitioners, specialists, medical technicians, Chinese medicine practitioners, and nurses. See **Table 1**.

The basic situation of the occupational identity of the basic-level health technicians

The occupational identity score of the basic-level health technicians in Qiqihar was (86.37±18.72) points, which is at a medium level. See **Table 2** and **Figure 1**.

The job stressor and satisfaction scores of the primary health technicians and their correlations with occupational identity

The total job stressor score of the primary health technical personnel in Qiqihar City was (50.13±9.37), and the total satisfaction score was (79.26±9.43) points, and they fall at the moderate level. Our Pearson correlation analysis showed that the scores and the total scores of each dimension of the job stressor scale were negatively correlated with the total occupational identity scores (P<0.01). The scores and total scores of each dimension of the satisfaction scale demonstrated a positive correlation with the professional identity overall score (P<0.01). See **Table 3**.

A univariate analysis of the status quo of the occupational identity of the primary-level health technicians

A very notable difference was found in the ages and years of work experience in the occupa-

Table 3. Qiqihar City's primary health technicians' job stressors and satisfaction scores and their correlation with professional identity (n=428)

Items	Number of items	Score ($\bar{X}$ ± s)	Total professional identity score	
			r	*P*
job stressors scores	22	50.13±9.37	-0.397	<0.01
Workload	3	12.62±3.18	-0.658	<0.01
Specialized medical work	5	8.21±2.09	-0.319	<0.01
Work risk	4	10.39±3.11	-0.574	<0.01
Attitude of patients and their families	4	9.68±2.44	-0.487	<0.01
Interpersonal relationship	6	9.23±2.15	-0.428	<0.01
satisfaction scores	31	79.26±9.43	0.574	<0.01
Schedule	6	12.47±3.12	0.785	<0.01
Wellbeing	3	7.82±1.18	0.439	<0.01
Career development	4	10.79±2.54	0.695	<0.01
Work-family balance	3	10.64±2.86	0.562	<0.01
Social opportunity	4	6.14±0.87	0.386	<0.01
Colleague relationship	2	5.17±0.35	0.495	<0.01
Compliment and recognition from work	4	12.64±2.57	0.748	<0.01
Work controlling and responsibility	5	13.59±3.26	0.723	<0.01

tional identity scores in our univariate analysis (P<0.05), but we detected no significant differences in the other indicators, as shown in **Table 4**.

Analysis of the influencing factors of the status quo of the occupational identity

The occupational identity score of the basic-level health technicians was used as a dependent variable, and the job stressor scores, job satisfaction scores, and factors (age, years of work experience) with statistical significance were determined using a univariate analysis as independent variables. The alpha level was set a priori at P≤0.05, and a multiple linear regression analysis was performed. The results revealed that years of work experience, work pressure, and job satisfaction are all influencing factors of the status quo of the occupational identity of basic-level health technicians (P<0.01). It is assumed that the lower the years of work experience, the higher pressure they feel. Additionally, the job satisfaction is proportional to professional identity. See **Table 5**.

Discussion

The work of primary health technicians is an essential link in the medical service chain [8], and the primary health human resources are challenged. The shortage of basic-level health technicians has become a major challenge in the health field, and it can be attributed to the resignation of technical staff. Numerous trials demonstrate that the resignation of these health technicians is closely associated with their low professional identity [9-12]. It is important to acknowledge that professional identity is also one of major factors affecting the work enthusiasm and service quality of primary health technicians [13]. Therefore, it if pivotal significance to investigate the status quo of the occupational identity of basic-level health technicians and to explore the corresponding influencing factors, in order to improve the service quality of primary health technicians and to reduce the turnover rate.

The present study found that in Qiqihar City primary health technicians' occupational identity status, job stressor and job satisfaction scores were (86.37±18.72) points, (50.13± 9.37) points, and (79.26±9.43) points, which are in the middle level. Among them, the scores and total scores of each dimension of the job stressor scale for basic-level health technicians were negatively correlated with occupational identity, and the job satisfaction scale scores were positively correlated with occupational identity.

It is reported [14] that work stress is negatively correlated with occupational identity, and

Table 4. A univariate factor analysis of the status quo of the occupational identity of the basic-level health technicians in Qiqihar City

Factors	Number	occupational identity score (x ± s)	*F/t*	*P*
Age (years)			2.489	0.013
<25	67	78.46±14.37		
25~35	231	84.23±17.32		
>35	130	94.25±19.39		
Gender			0.259	0.795
Male	231	86.17±16.34		
Female	197	86.60±17.93		
Educational background			0.455	0.649
Junior college	98	85.79±21.37		
Bachelor's degree	256	86.89±19.93		
Master's degree or above	74	85.34±18.34		
Marital status			0.347	0.729
Single	98	86.87±16.35		
Married	330	86.22±16.29		
Professional title			1.297	0.163
Primary titles	89	83.69±17.38		
Intermediate titles	208	86.78±17.49		
Senior titles	62	89.33±17.52		
Work experience (years)			2.717	0.007
<5	134	81.14±15.23		
5~10	149	86.43±17.30		
>10	145	91.14±20.51		
Number of medical leave days per year (d)			1.693	0.091
<10	178	84.59±18.43		
≥10	250	87.64±18.32		
Whether one passed the latest health check			0.740	0.460
Yes	417	86.47±17.19		
No	11	82.58±17.93		

Table 5. An analysis of the influencing factors of the status quo of occupational identity of the basic-level health technicians in Qiqihar City

Factors	*B*	*β*	*t*	*P*
Working years	0.821	0.239	6.213	<0.01
Work pressure	-1.436	-0.249	4.593	<0.01
Job satisfaction	0.325	0.127	5.172	<0.01

another study found [15] that routine medical work stress has a significantly negative impact on occupational identity. In the meantime, high-intensity occupational pressure can easily cause negative emotions among basic-level health technicians, diminish their work enthusiasm, and reduce their professional identity [16]. Professional identity also determines an individual's basic work attitude, and it has an impact on self-cognition and professional experience. If the internal professional identity is not established, a sense of satisfaction cannot be achieved. This may lead to decreased job satisfaction under the combined action of individual factors and external factors. We performed a multiple linear regression analysis and found that years of work experience, work pressure, and job satisfaction are all influencing factors of the occupational identity in basic-level health technicians (P<0.01). With fewer years of work experience, greater work pressure, and dissatisfaction with their work, their professional identity shows a decrease. The following may be accountable. Work experience provides patients with accessible medical services and enables them to promptly respond to

emergencies. If they fail in such responses, there is no chance they will get compliments or recognition from their superiors. Consequently, one cannot realize the value of one's position, nor can one secure a sense of accomplishment and satisfaction from his work. This makes basic-level health technicians more psychologically stressed, and their occupational identity scores are also lower. Of note, the working years are connected to their professional title, and the ones with fewer years of work experience are not valued by their superiors. Under the arduous tasks of medical care, trivial tasks and chores are usually done by people with lower professional titles [17]. What's more, night shifts and overtime work are more frequent, and thereby few opportunities are available for studying outside of work. With the long-term accumulation of many factors, anxiety and fatigue are constantly an issue, and they can further lead to low work efficiency, high work pressure, and a loss of interest in work, resulting in job burnout [18, 19]. Eventually, a decline in professional identity occurs. The shorter working years often result in poor welfare benefits, and the work enthusiasm is directly affected by income [20]. If the enthusiasm for work is not high, it will produce a sense of burnout, resulting in low work efficiency, and work efficiency is in turn connected to performance, bonuses, and often overtime is required to get the work done. When long-term workloads and payment are not matched, one can easy experience negative emotions such as frustration, irritability, complaining about unfairness, etc., and thus becoming dissatisfied with the current work, which will also exacerbate job burnout. This repeated cycle will eventually lead to a decline in the professional identity of the basic-level health technicians, and they may choose to leave. However, some limitations of our study should be acknowledged. First, the potential influencing factors of professional identity could be other than those included in the questionnaire. Second, small beta values were observed in our study, which may be related to the sample size. Additional studies with a larger sample size are warranted to investigate the factors associated with professional identity.

To sum up, the years of work experience, work pressure, and job satisfaction of primary health technicians are the influencing factors of their professional identity. Thus, to strengthen humanistic care and communication, alleviate the psychological pressure of basic-level health technicians, rationalize work tasks, and provide more training and learning opportunities remains urgent tasks to improve the professional identity of basic-level health technicians.

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Disclosure of conflict of interest

None.

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