Occupational Identity, Job Satisfaction and Their Effects on Turnover Intention among Chinese Pediatricians: A Cross-sectional Study

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Abstract

Objectives This study contributes to research on the paediatrician shortage by examining occupational identity, job satisfaction and their effects on turnover intention among pediatricians in China.

Methods This study employed a multi-stage stratified random sampling method to conduct a questionnaire survey. Of the 4906 survey recipients, valid data were collected from 4198 of the respondents (85.6%). Participants were from seven regions of China (south, central, north, east, northwest, southwest, northeast). Pediatricians who volunteered and provided informed, written consent participated.All variables including basic socio-demographic and work-related characteristics, occupational identity, job satisfaction and turnover intention were based on available literature, and measured on a 5- point Likert scale.Such statistical methods as exploratory factor analysis (EFA), descriptive analysis, common method bias, one-way analysis, pearson correlation analysis and mediating effect analysis were used.

Results There were significant differences among the respondents in terms of turnover intention based on age, education, marital status, region, type and grade of practice setting, professional title, years in practise, workload, rest days, and monthly income. Occupational identity and job satisfaction were both negatively related to turnover intention, and occupational identity was positively correlated with job satisfaction(r_1=-0.601, p<0.001; r_2=-0.605, p<0.001). And the result also showed that job satisfaction plays a mediating role in the association between occupational identity and turnover intention among Chinese pediatricians.

Conclusions To reduce turnover intention among pediatricians in China, it is crucial to focus on three aspects: work condition, workload and salary. We suggest healthcare managers should increase investment in pediatric, carry out reforms on salary mechanism and pay more attention to female and young pediatricians.

Background

Since the reform of the health system in China, infant mortality has decreased from 50.2‰ in 1991 to 6.1‰ in 2018 and other child health indicators have improved considerably [1]. Although pediatric services in China has improved, the child health system in China is in danger of collapse due to a shortage of pediatricians. According to China national statistics, in 2017, there were only 0.63 registered pediatricians younger than 65 years of age per 1000 children [2]. A survey about characteristics and workload of pediatricians in China shows that the distribution of pediatricians was extremely skewed (Gini coefficient 0.61) and they have been burdened with a greater workload in 2016 [3] . At the same time, the universal two-child policy implemented on January 1, 2016, which aims to address the country's population aging trend, exacerbates the shortage of pediatrician in China [4-7]. Moreover, pediatricians have one of the highest rates of turnover among physician specialists [7]. According to the *China Pediatric Resources White Paper*, from 2011 to 2014, 14310 pediatricians left their position, accounting

for 10.7% of pediatricians overall [8]. Shortage of pediatricians and high turnover rate make China's pediatric health care system facing challenges.

According to Erikson, occupational identity (OI) exists in early growth, adolescence and adulthood with the possibility of strengthening and developing [9].Subsequently,based on this, Holland defined occupational identity as a stable state and behavior formed by individuals for their career goals, interests and abilitie [10]. In contrast, Savickas put forward the self-concept of changing occupational identity [11], and Vondracek described occupational identity as a dynamic organization of career self perception [12]. Hence, we assumed that occupational identity is the development of self-consciousness and self-identity..Meeus discovered that the achievement and social support of teenagers in the educational environment promote the development of their occupational identity [13]. Early research explored occupational identity among healthcare workers. Subsequently, in the investigation of the correlation between nurses' occupational identity and environment, Leufgen we also discovered that environment has a positive effect on occupational identity [14]. Wu [15] and Zhao [16] revealed that occupational identity was associated with education, type of practice setting and salary among healthcare workers in China. However, a study conducted by Selma et al. [17] demonstrated that occupational identity was correlated with job satisfaction and intention to leave the profession among nurses in Turkey. Meanwhile, in a study, Zhang et al. [18] confirmed that occupational identity was a strong predictor of turnover intention among township health inspectors in China.

Hoppock put forward the concept of job satisfaction from the psychological and physiological perspectives, and pointed out that job satisfaction is the subjective feeling of employees for their working environment [19]. Further, Lock recognized job satisfaction as an individual's positive emotional state resulting from the evaluation of work or work experience [20]. Job satisfaction refers to the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs [21]. It is an attitude or emotional response to one’s tasks and to the physical and social conditions of the workplace [22]. In fact, job satisfaction is related to many factors. Manojlovich [23] has verified that factors in the practice environment contributed both directly to nursing job satisfaction et al. [24] and Ozyurt et al. [25] revealed that job satisfaction is inversely correlated with burnout. Jackson et al. [26] showed that women and young doctors may have a higher risk of dissatisfaction at work. In a study among Australian nurses’ job satisfaction on retention by Cowin and Leanne [27] also confirmed that experienced nurses had relatively stable job satisfaction and salary became a significant area of young nurses’ job satisfaction. Additionally, job satisfaction is usually regarded as the most representative antecedent variable to predict the turnover intention of health care providers. A previous study conducted by Porter and Sters [28] discovered that there is a significant negative correlation between job satisfaction and turnover intention. Recently, a study among doctors in the district public-private mixed health system of Bangladesh also confirmed that a significant negative correlation between job satisfaction and turnover intention [29].Tao et al. [30] demonstrated that job satisfaction was strong predicator of turnover intention among pediatricians in China. Furthermore, job satisfaction is often the mediator between other factors and turnover intention.Einar M. Skaalvik [31] explored the relationship between school environment variables and teachers' sense of belonging, and the results showed that job satisfaction was the intermediary

variable between wages and job transfer intention. In accordance with the previous study,Chan SHJ verified [32] the mediating effect of job satisfaction on career adaptability and turnover intention.One result of this study which was consistent with the previous study was that job satisfaction exerts a negative impact on turnover intention, and the indirect effect is significant.

According to Mobley [33], turnover intention (TI) is considered to be the best and intuitive predictor of actual turnover behavior, and it refers to the probability that an employee will voluntarily leave his or her job in the period ahead [34]. Some related research on turnover intention has been undertaken extensively by scholars in various fields.As a study initiated by Mobley [35] pointed out,turnover intention is a summative factor of other turnover related factors and it's significantly related to employee turnover. In another studies,Shader [36] proposed that job and role stress are important factors leading to turnover intention and the results of the Han, S. S's [37] survey also indicated that job burnout, work pressure, workplace, working hours, self-efficacy and other factors are predictors of turnover intention. Based on these studies,Scanlan, J.N [38] further explored the factors influencing occupational therapists' job well-being and turnover intention, and discovered that all indicators of job happiness were significantly related to turnover intention. As recognition has increased regarding the importance of the association between turnover intention and the actual level of organization management [39], a large number of studies have focused on turnover intention in occupational populations. A study among Jordanian nurses in psychiatric units by Alsaraireh et al [40]. found a significant negative correlation between job satisfaction and turnover intention. Zhang et al. [18] demonstrated that professional identity, job satisfaction and work engagement were strong predicator of turnover intention among township health inspectors in China.

In a stressful practice environment, pediatricians are subject to higher workloads and work pressure and relatively low salaries, which may place pediatrician at risk for emotional exhaustion and increased turnover intention [41] Related to this issue is the benign professional attitude construction of pediatricians. However, few investigations have been conducted to the status of occupational identity, job satisfaction and turnover intention among pediatrician.And no one has explored the mechanism of action between occupational identity, job satisfaction and turnover intention among pediatrician.This study is the first to analyse and explore the influence of occupational identity and job satisfaction on Chinese pediatricians and verify their impact on turnover intentions. Based on the above-mentioned theoretical analysis and empirical demonstration, we attempted to link the relationship and moderating effect among occupational identity, job satisfaction and turnover intention. The model was presented in Table 2 and Fig 2.We assumed that occuptional identity and job satisfaction directly affect turnover intention. Meanwhile, through job satisfaction, occuptional identity has an indirect effect on turnover intention.So, this study aimed to verify the direct impact of occupational identity and job satisfaction, and to explore and quantify the influence mechanism of job satisfaction as an intermediate variable. We administered a survey to registered pediatricians in China to identify the key factors that influence how pediatricians perceived toward their work, explore the relations between occupational identity, job satisfaction and turnover intention and develop new and better ways to address the shortage of pediatrician.

Methods

Setting and Participants

This study is a part of a research project by the Humanities and Social Sciences of the Ministry of Education of China, Exploration on Reasons and Countermeasures for the Shortage of Pediatricians in China. Judging from the experience of sample size summarized by Yuan et al [42], when the overall scale is more than 100,000 people, the sampling ratio is less than 1%. According to the national statistics, by the end of 2016, the number of pediatricians in China was 114,010 so the minimum sample size is 1,141(1%). For the purpose of data reliability and validity, the estimated sample size for this survey is 4,500.The research object of the influencing factors of turnover intention is the in-service pediatricians of medical institutions nationwide. Inclusion criteria:1) Sign a labor contract or other related labor agreement with the public medical institution;2) Registered doctors with a license for practicing doctors;3) Work in relevant departments of pediatrics of the public medical institution.

From August 2018 to December 2018, this study employed a multi-stage stratified random sampling method to conduct a questionnaire survey. Firstly according to China's geographical divisions,we divides the country into 7 regions of South China, Central China, North China, East China, Northwest China, Southwest China, Northeast China, and according to the proportion of provinces in each region, randomly selects 4 provinces in East China, 2 provinces in South China,North China, Southwest China and Northwest China. And 1 province in Central China and Northeast China.Secondly, we randomly selects 3 cities in the total provinces. Then according to the proportion and grades of local medical institutions, we randomly selects 10 medical institutions and each randomly selects 10 to 12 pediatricians (including attending physicians and residents).

The data was collected through self-administered questionnaires based on collaboration with the Pediatric Society of the Chinese Medical Doctor Association (PS-CMDA) and the Neonatal Society of the Chinese Medical Doctor Association (NS-CMDA)., including four parts besides the cover letters. In order to reduce survey bias, firstly, this study adopted a self-filled questionnaire survey method. The cover letter informs the respondents that their information is confidential and only used for academic research. Every doctor who accepted the questionnaire survey voluntarily filled out the questionnaire after informed consent and participated in the questionnaire survey. Secondly, the project team conducted standardized training for multiple investigators, including research purpose, investigation content, investigation methods, and questionnaire distribution, recovery, and entry. Due to the long distance for some investigators, the training was conducted online. A total of 4,906 questionnaires were distributed and 4,198 questionnaires were actually collected. The questionnaire recovery rate was 85.6%.

Study Measures

The study questionnaire, comprising 46 items, was based on world-widely accepted scale and translated into Chinese. The predicted time to finish questionnaire was 10–15 min.

- Part 1 included basic socio-demographic and work-related characteristics, including age, gender, education, marital status, type and grade of practice setting, professional title, years in practice, number of hospital beds administered, rest day in a week and monthly salary.
- In part 2, occupational identity was measured using a 10-item Chinese version of the occupational identity scale (CPIS) developed by Cai (2003) and based on the original Occupational Identity Scale (Tyler & McCallum, 1998) [43, 44]. Items included “My present job makes me feel very proud” and 9 other items. The CPIS has a 5-point response format, ranging from 1= “strongly disagree” to 5= “strongly agree”. Total scores can range from 10 to 50 and higher scores indicate higher levels of occupational identity.
- In part 3, job satisfaction was measured using the Chinese version of the Minnesota Satisfaction Questionnaire-Short Version (MSQ-short version) developed by Wu and based on MSQ-short version developed by Weiss [45], a well-known and stable instrument used for measuring job satisfaction. The MSQ-short version includes 20 items. It includes two subscales: Intrinsic Job Satisfaction (IJS) (consisting of 12 items, including activity, independence, variety, social status, moral value, security, social service, authority, ability utilization, responsibility, creativity, achievement) and Extrinsic Job Satisfaction (EJS) (consisting of 6 items including supervision-human relation, supervision-technical, company policies and practices, salary, recognition). Two additional items explore satisfaction with working conditions and co-worker relationships. Results are reported as General Job Satisfaction (GJS), which is a total score for all 20 items and subscale scores for intrinsic job satisfacton and extrinsic job satisfaction [46, 47]. The 20 items in the MSQ-short version are rated on a 5-point Likert scale (ranging from 1= “very dissatisfied with this aspect of my job” to 5= “very satisfied with this aspect of my job”). Item responses are summed or averaged to create a total score range from 20 to 100– the lower the score is, the lower the level of job satisfaction [47].
- Part 4 consisted of a 4-item instrument measuring turnover intention developed by Farh that is considered to have high internal uniformity and retest reliability [48, 49]. The responses are based on a 5-point Likert scale (ranging from 1= “strongly disagree” to 5= “strongly agree”). Total scores can range from 4 to 20 and higher scores indicate higher levels of turnover intention.

Statistical Analysis

We analysed the collected data with SPSS 23.0 with the following objectives: 1) exploratory factor analysis (EFA) was used to scientifically assess the responsibility and validity of the whole questionnaire. 2) descriptive analysis including number (N) and percentage (%) for socio-demographic and work-related characteristics as well as the values of means and standard deviations (SD) for occupational identity, job satisfaction, and turnover intention. 3) a controlling for effects of an unmeasured latent methods factor employed to common method bias: construct three models with four items of occupational identity(10 items),internal job satisfaction(12 items),external job satisfaction(6 items),turnover intention(4 items) and compare model differences in AMOS 24.0; after adding the common method factor to the four-factor model, several indicators including root mean square error of approximation (RMSEA) and standardized

root mean square residual(SRMR) reduced or increased not more than 0.05, while comparative fit index (CFI) and Tucker-Lewis index (TLI) reduced or increased not more than 0.1,which reflected an acceptable fit between the current data and hypothesized model; 4) one-way analysis of variance to compare group differences on the measurements of the socio-demographic variables; 5) pearson correlation analysis of occupational identity, job satisfaction and turnover intention; and 6) bootstrap method used to mediating effect analysis: set internal job satisfaction and external job satisfaction as mediator variable(M), occupational identity as independent variable(X) and turnover intention as outcome variable(Y) and then choose model 6 as well as bootstrap samples 5000 in SPSS PROCESS; X→Y path regression equation and X/M→Y path regression equation must be significant, and the confidence interval for indirect effects does not include 0, which reflected the effect of mediation is statistically significant.

Reliablity and validity

In accordance with the EFA results, the Kaiser-Meyer-Olkin (KMO) of CPIS was 0.924 and bartlett's test of sphericity was significant (χ^2=21,661.103, P<0.01).The Kaiser-Meyer-Olkin (KMO) of MSQ was 0.941 and bartlett's test of sphericity was significant (χ^2=35,957.862, P<0.01).The Kaiser-Meyer-Olkin (KMO) of TI was 0.784 and bartlett's test of sphericity was significant (χ^2=5,533.583, P<0.01). They were all greater than 0.70, indicating a better possibility of factor analysis. Reliability analysis was used and we found that Cronbach's α for CPIS, MSQ and TI were 0.905, 0.919 and 0.810. It is generally believed that the coefficient is above 0.8, and the reliability of the scale is acceptable.

Results

Descriptive Analysis of the Socio-demographic and Worked-related Characteristics

A total of 4906 paediatricians were invited to participate in the study, and valid data were collected from 4198 of the paediatricians (85.6%). Table 2 provides the descriptive statistics for the individual variables analysed in this study. The age of the respondents varied between 20 and 74 years old, and approximately 85% of the respondents were younger than age 50 years of age. A majority of the participants were female (70.1%), and the majority of paediatricians in China are female. In terms of education, most of the respondents had a university degree or above (94.7%), and most held a bachelor's degree. A majority of the participants were married at the time of the study (88.7%).

With respect to practice setting , a majority of the participants worked in a government general hospital (71%), and smaller percentages worked in a children's hospital (8.1%) or other settings (1.7%). A considerable majority of the respondents worked in a secondary (40.5%) or tertiary (55.8%) practice setting. Of the respondents, 29.3% were junior doctors, 30.6% were middle doctors, and 40.0% were senior doctors. Over half of the participants reported working for over 10 years (54.2%). Most of the respondents reported being responsible for 5-15 hospital beds (68.5%) and they were most likely to have 1day of rest each week(42.6%). Monthly salary <10000 yuan was reported by 82.5% of the respondents.

Common method bias analysis of Occupational Identity, Job Satisfaction and Turnover Intention

We used controlling for effects of an unmeasured latent methods factor to verify whether there was a common method bias. The single factor model has a poor fit, and the four-factor model has a good fit(Table 3). After adding the common method factor to the four-factor model, the fitting index of model was not improved a high degree. The RMSEA and SRMR reduction values was not more than 0.05(Table 3), and the CFI and TLI increased values was not more than 0.1(Table 3), which indicates the fitting date of model with the method factor no significant improvement was made, indicating that although common method bias may exist, it has less impact on the study [50].

The Status Quo of Occupational Identity, Job Satisfaction and Turnover Intention among Paediatricians

The mean score for occupational identity was 28.52 and ranged from 10 to 50 (SD=8.516) (Table 4). The ANOVA revealed that with the exception of marital status, all the socio-demographic and work-related characteristics were tested to be significantly associated with occupational identity (Table 4 & Table 5).

In the terms of job satisfaction, the distribution of the pediatricians' responses to the 20 5-point indicators within the 4 dimensions is shown in Table 4 and Table 5. The mean total score for general job satisfaction was 61.15 ranging from 20 to 100 (SD=12.252) (Table 4). In addition, the mean score for intrinsic job satisfaction was 38.39 (ranged from 12 to 60), while the mean score for extrinsic job satisfaction was 16.34 (ranged from 6 to 30).The results of the ANOVAs revealed that age, gender, region, grade of practice setting, professional title, years in practice, workload, rest day, monthly income were significantly associated with general job satisfaction (Table 4 & Table 5).

The mean total score for turnover intention was 11.35 ranging from 4 to 20 (SD=3.289) (Table 4). The research results also indicated that there were significant differences among the respondents in terms of turnover intention based on age, education, marital status, region, type and grade of practice setting, professional title, years in practise, workload, rest days, and monthly income (Table 4 & Table 5).

Pearson Correlation Analysis of Occupational Identity, Job Satisfaction and Turnover Intention

Correlation analysis was conducted on the occupational identity, job satisfaction and turnover intention among Chinese pediatricians (Table 6). The study validated that the level of occupational identity was positively correlated with the respondents' scores on general job satisfaction as well as intrinsic job satisfaction and extrinsic job satisfaction (r_1=0.702, p<0.01; r_2=0.704, p<0.01; r_3=0.564, p<0.01). The study validated that the level of turnover intention was negatively correlated with the respondents' scores

on occupational identity, general job satisfaction, intrinsic job satisfaction and extrinsic job satisfaction (r_1=-0.601, p<0.01; r_2=-0.605, p<0.01; r_3=-0.563, p<0.01; r_4=-0.557, p<0.01).

Mediating effect analysis of Occupational Identity, Job Satisfaction and Turnover Intention

We used bootstrap method to analysis mediating effect, which showed that intrinsic job satisfaction and extrinsic job satisfaction will mediate relationships between occupational identity and turnover intention. The direct effect means X→Y path regression, and the indirect effect meansX/M→Y path regression.The total effect is sum of the direct effect and the indirect effect and relative mediating effect is the proportion of the indirect effect in the total effect.So the total indirect effect is 0.09 and the total effect is 0.223. The mediating effect analysis found that occupational identity generates turnover intention through four paths: First, occupational identity directly affects turnover intention, and the direct effect is -0.133 (-0.120□-0.145) (Fig 2). Second, occupational identity indirectly affects turnover intention through intrinsic job satisfaction. The indirect effect is -0.028 (-0.017□-0.039) and the ratio of mediating effect is 12.56% (Table 7). Third, occupational identity indirectly affects turnover intention through extrinsic job satisfaction. The indirect effect is -0.015 (-0.011□-0.019) and the ratio of mediating effect is 6.73% (Table 7). Forth, occupational identity indirectly affects turnover intention through intrinsic job satisfaction and extrinsic job satisfaction. The indirect effect is -0.047 (-0.053, -0.0400) and the ratio of mediating effect is 21.08% (Table 7).

Discussion

The study has explored the effects of occupational identity, job satisfaction and turnover intention among pediatrician in China. Our findings demonstrate that occupational identity and job satisfaction, occupational identity and job satisfaction, job satisfaction and turnover intention are prevalent among Chinese pediatricians. Furthermore, we show that pediatricians with increased job satisfaction and occupational identity were significantly less likely to get strong turnover intention.

Of the 12 intrinsic job satisfaction items, workload received the lowest score. According to data provided by the PS-CMDA, in Beijing Childrend’s Hospital, each pediatrician should offer 80 to 100 visits each day and sometimes up to 150 visits per day. Similar conditions have also been observed in other pediatric medical centres [51].Also□number of hospital beds and rest day are two of the major factors affecting pediatricians’ turnover intention. On the whole, compared to the participants administering ≦10 hospital beds, pediatricians administering > 10 hospital beds attached to lower occupational, job satisfaction and higher turnover intention. According to Wang (2010) , the standard of the number of hospital beds peditricians in tertiary general hospitals administer is 9.11 [52] . In our study, 52.0% of the pediatricians administered >10 hospital beds and over half of participants administered more hospital beds than related reference criteria. In addition, when we pay more attention to the rest day, 80.0% of the participants taken 0 or only 1 rest day a week(Table 2). On the one hand, with the implementation of the

two-child policy, the reach of a new baby boom has put a demand on the children's health services and requested more talents to contribute on paediatrics. On the other hand, pediatrics are exposed to the phenomenon of turnover among pediatricians. The leave of pediatricians with rich experience, especially young pediatricians, bothers medical institutions. According to the China Pediatric Resources White Paper, from 2011-2014, the loss rate of under 35-year-age group was 14.6%, the loss rate of under 35-to-45-year-age group was 11%, and the loss rate of 45-to-60-year-age group was 6.8% [8]. Therefore, the heavy workload is the product of the contradiction between the shortage of talent supply and the increasing demand for services.

With a limited pediatric workforce and increasing demand for child health care, pediatrician are facing unprecedented challenges. Of the 6 extrinsic job satisfaction items, salary received the lowest score. At the same time, salary is one of and the direct and indirect significant predictors of turnover intention.Salary is identified as the contributing factor on high level of turnover intention [53-55]. A survey performed by the PS-CMDA, which found that approximately 96% of pediatricians were not satisfied with their salaries in 2011 [51]. When compared to other industry, according to national data, in 2017, the average salary of urban employees in the financial industry reached 122,851 CNY and that of urban employees in the computer services and software industry was 133,150 CNY, the salary of pediatricians was behind that of the two other industry [56]. On the one hand, the low salary of physician is controlled strictly by the government to keep health care affordable [57]. According to a survey conducted by the PS-CMDA, in 2015, the workload of pediatricians in general hospitals was 1.68 times that of non-pediatricians, while the income earned by pediatricians represented 46% of the income earned by non-pediatricians [58]. Compared to other physicians, because of limited revenue pediatric department generate, there exist the income gap which makes pediatricians more likely to get fatigue and frustration.

Through Pearson correlation analysis, we observed that there were active correlations between occupational identity,intrinsic job satisfaction and extrinsic job satisfaction. Thus they have negative correlations with turnover intention. These findings are consistent with those found a negative correlation between occupational identity and turnover intention among Chinese nurses [59, 60], and a study directed towards job satisfaction and turnover intention among pediatricians illustrated the negative impact of age and job satisfaction on turnover intention [61]. Moreover, the mediating effect analysis found that in addition to directly affecting turnover intention, occupational identity will also affect internal job satisfaction, and then external job satisfaction, and ultimately affect turnover intentions and the highest indirect effect is 21.08%. It means that occupational identity generates turnover intention through internal job satisfaction(12.56%) rather than extrinsic job satisfaction(6.73%) and internal job satisfaction also effects external job satisfaction.Although internal job satisfaction and external job satisfaction are in the same direction, they are inconsistent in their role. There must be other variables that affect the effect of the two. This suggests that future research should also fully explore the impact latent variables of internal job satisfaction and external job satisfaction.

Strengths and limitations of this study

To our knowledge, this is the first time to investigate occupational identity, job satisfaction and turnover intention at a national level and study the relationships between occupational identity, job satisfaction and turnover intention among pediatricians in China. We spend a lot of time and energy investigating many pediatricians and try to achieve a representative sample by planning a reasonable method for sample selection in China.

This is only a cross-sectional study, no causal inferences can be made. In addition because the questionnaire involves personal privacy, some respondents maybe conceal their real situation and report bias occur in the study. Third, the study was focused only on the relationships between occupational identity, job satisfaction and turnover intention among pediatricians. The study was conducted is from a unilateral view, and some factors may have been ignored. Therefore, we should expand the field of investigation and identify additional problems in future research. On the basis of the research, in-depth interviews with stakeholder groups can be conducted to introduce new variables of research value to explore influencing factors. Through the follow-up survey of pediatricians and cohort research, we can understand the true status and needs of pediatricians, and at the same time, we can go deep into the research direction to carry out corresponding empirical research on the salary performance of pediatricians and the promotion of professional titles.

Conclusions

Pediatricians play a vital role in driving the child health system in China.The results show that higher occupational identity and job satisfaction contribute to reduce turnover intention, which not only provides new ideas for explaining the resignation of pediatricians, but also provides possible and feasible new methods to reduce the tendency and behavior of resignation. Based on the results, we suggest that the healthcare managers improve the vacation polices, increase financial investments in pediatric, fund pediatric infrastructure, scientific research, education and other projects: provide grant allowances to pediatricians and, most importantly, reform salary mechanism for pediatricians. In addition, the government should pay attention to the rights of young pediatricians, as they present a large percentage of Chinese pediatricians but get high level of turnover intention, and provide them with more talent selection, advanced learning opportunities, and strengthen their psychological construction.

Declarations

Ethics approval and consent to participate

Ethical clearance was obtained from the ethics committee of Zhujiang Hospital of the Southern Medical University. (2018-JWC-001)Signed informedconsent was obtained from each participant. Confidentiality and anonymity were assured and confirmed. Participants were informed of their rights to withdraw from the study. All data have been secured safely with limited access to the authors only.

- Consent to publish

Not applicable.

- Availability of data and materials

All authors confirm that the data of this study will be made available from the corresponding author on reasonable request.

- Competing interests

The authors declare that they have no competing financial interests.

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- Authors' Contributions

Wanjun Deng, Zhichun Feng, Oudong Xia and Bin Wang carried out the investigation work and the data collection and interpretation. Wanjun Deng, Zhichun Feng, Oudong Xia, Tingting Yang and Lan Lin participated in the design and coordination of investigation work, and acquisition of data. Wanjun Deng, Xinying Yao, Jun Jiang and Wenhao Zhong participated in the study design, data collection, analysis of data and preparation of the manuscript. Xinying Yao, Lan Lin and Oudong Xia carried out the study design, the analysis and interpretation of data and drafted the manuscript. All authors read and approved the final manuscript.

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Abbreviations

OI: occupational identity; JS: job satisfaction; TI: turnover intention; GJS: general job satisfaction; IJS: intrinsic job satisfaction; EJS: extrinsic job satisfaction; PS-CMDA: the Pediatric Society of the Chinese Medical Doctor Association; NS-CMDA: the Neonatal Society of the Chinese Medical Doctor Association.

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Tables

Table 1 The Theoretical Hypotheses

Hypotheses
1. The pediatricians' occupational identity has a direct negative effect on turnover intention
2. The pediatricians' job satisfaction has a negative effect on turnover intention
3. The pediatricians' occupational identity has an indirect negative effect on turnover intention through the mediating effect of job satisfaction

Table 2 Descriptive data for the socio-demographic and worked-related characteristics of the pediatricians

Characteristic	Total sample		Characteristic	Total sample	
	N	%		N	%
Age (years)			**Grade of practice setting**		
20-29	594	14.1	Primary	100	2.4
30-39	1635	38.9	Secondary	1700	40.5
40-49	1337	31.8	Tertiary	2342	55.8
50-59	610	14.5	Not rated	56	1.3
>=60	22	0.05	**Professional title**		
Gender			Junior	1231	29.3
Male	1256	29.9	Middle	1286	30.6
Female	2942	70.1	Senior	1681	40.0
Education			**Years in practice**		
College graduate	223	5.3	<1 year	156	3.7
Bachelor’s degree	3035	72.3	1-5 years	894	21.3
Master’s degree	817	19.5	6-10 years	868	20.7
Doctorate degree	123	2.9	11-15 years	606	14.4
Marital			16-20 year	459	10.9
Not married (single and others)	475	11.3	>20 years	1215	28.9
Married	3723	88.7	**Number of hospital beds**		
Region			<5	379	9
Northeast China	534	12.7	5-10	1634	38.9
North China	537	12.8	11-15	1243	29.6
East China	632	15.1	16-20	409	9.7
South China	659	15.7	>20	533	12.7
Central China	597	14.2	**Rest day / week**		
Northwest China	635	15.1	0 day	1568	37.4
Southwest China	604	14.4	1 day	1790	42.6
Type of practice setting			2 days	821	19.6
General hospital	2980	71.0	3 days	19	0.5

Children's hospital	342	8.1	**Monthly income (CNY)**		
Maternal and child care service centre	806	19.2	<10000	3462	82.5
Other	70	1.7	10001-20000	637	15.2
			20001-30000	73	1.7
			>30000	26	0.6

Table 3 Common method bias

Model	c2	df	RMSEA	SRMR	TLI	CFI
Single factor model	19055.63	464	0.098	0.071	0.708	0.727
Four-factor model	11181.44	458	0.075	0.057	0.829	0.842
Four-factor model + Common method factor	8802.427	429	0.068	0.051	0.858	0.877

Table 4 Descriptive data and ANOVA results for the socio-demographic characteristics of the pediatricians

Characteristic	Occupational identity		General job satisfaction		Intrinsic job satisfaction		Extrinsic job satisfaction		Turnover intention	
	Mean (SD)	P	Mean (SD)	P	Mean (SD)	P	Mean (SD)	P	Mean (SD)	P
Age (years)		**		**		**		**		**
20-29	28.02 (8.51)		61.64 (13.25)		38.14 (8.10)		17.03 (4.61)		11.94 (3.51)	
30-39	26.81 (8.13)		59.93 (12.31)		37.42 (7.69)		16.13 (4.46)		11.82 (3.21)	
40-49	29.21 (8.51)		61.14 (11.60)		38.80 (7.21)		15.98 (4.38)		11.06 (3.11)	
50-59	31.82 (8.31)		63.85 (12.14)		40.23 (7.640)		16.97 (4.52)		10.20 (3.30)	
>=60	35.23 (8.11)		64.91 (8.18)		41.36 (4.44)		17.00 (3.51)		9.91 (2.00)	
Gender		**		**		**		**		-
Male	27.61 (8.82)		59.64 (13.03)		37.31 (8.25)		15.96 (4.60)		11.48 (3.27)	
Female	28.90 (8.36)		61.80 (11.85)		38.85 (7.27)		16.50 (4.42)		11.30 (3.30)	
Education		**		-		-		**		*
College graduate	29.46 (9.39)		61.89 (12.13)		39.34 (7.51)		16.08 (4.54)		11.19 (3.24)	
Bachelor’s degree	28.15 (8.48)		60.91 (12.22)		38.28 (7.60)		16.21 (4.47)		11.44 (3.31)	
Master’s degree	29.20 (8.14)		61.59 (12.11)		38.41 (7.49)		16.74 (4.38)		11.15 (3.22)	
Doctorate degree	31.41 (9.37)		62.94 (14.09)		39.29 (8.67)		17.10 (5.14)		10.71 (3.33)	
Marital		-		-		-		**		**
Not married (single and other)	28.28 (8.30)		61.85 (12.79)		38.14 (7.86)		17.23 (4.40)		11.83 (3.47)	
Married	28.55 (8.54)		61.06 (12.18)		38.42 (7.58)		16.22 (4.48)		11.29 (3.26)	
Total	28.52 (8.52)		61.15 (12.25)		38.39 (7.61)		16.34 (4.48)		11.35 (3.29)	

The statistical test was 2-tailed, and $P<0.05$ was considered significant.

*$p<0.05$; **$p<0.01$

Table 4 Descriptive data and ANOVA results for the work-related characteristics of the pediatricians

Characteristic	Occupational identity		General job satisfaction		Intrinsic job satisfaction		Extrinsic job satisfaction		Turnover intention	
	Mean (SD)	P	Mean (SD)	P	Mean (SD)	P	Mean (SD)	P	Mean (SD)	P
Region		**		**		**		**		**
Northeast China	27.62 (7.68)		61.19 (11.72)		38.52 (7.35)		16.40 (4.34)		11.73 (3.11)	
North China	29.97 (8.74)		62.12 (13.31)		38.93 (8.13)		16.68 (4.79)		10.95 (3.38)	
East China	29.21 (8.26)		61.14 (12.39)		38.39 (7.57)		16.15 (4.49)		10.92 (3.17)	
South China	28.33 (8.47)		61.77 (11.67)		38.49 (7.43)		16.79 (4.18)		11.36 (3.23)	
Central China	27.95 (8.52)		60.60 (11.58)		38.08 (7.39)		16.07 (4.27)		11.58 (3.09)	
Northwest China	27.60 (8.74)		59.03 (12.25)		37.46 (7.53)		15.35 (4.55)		11.64 (3.25)	
Southwest China	29.03 (8.87)		62.39 (12.60)		38.96 (7.79)		16.98 (4.56)		11.29 (3.68)	
Type of practice setting		**		-		-		**		**
General hospital	28.22 (8.50)		60.87 (12.15)		38.25 (7.56)		16.19 (4.42)		11.44 (3.30)	
Children's hospital	29.47 (8.60)		62.55 (12.39)		38.93 (7.46)		17.21 (4.66)		10.70 (3.34)	
Maternal and child care service centre	29.00 (8.46)		61.50 (12.68)		38.56 (7.87)		16.47 (4.64)		11.28 (3.22)	
Other	30.73 (8.62)		62.43 (10.49)		39.71 (7.11)		16.57 (3.62)		11.56 (3.21)	
Grade of practice setting		**		**		**		**		**
Primary	28.31 (8.95)		59.46 (11.39)		37.54 (7.45)		15.77 (3.99)		11.49 (3.37)	
Secondary	27.73 (8.49)		60.01 (12.26)		37.93 (7.73)		15.74 (4.47)		11.69 (3.25)	
Tertiary	29.08 (8.45)		62.04 (12.14)		38.73 (7.46)		16.79 (4.45)		11.10 (3.29)	
Not rated	29.39 (9.84)		61.89 (14.90)		39.36 (9.63)		16.23 (4.82)		11.41 (3.39)	

Professional title	**	**	**	**	**
Junior	27.70 (8.62)	61.20 (13.04)	37.89 (8.00)	16.85 (4.60)	11.81 (3.44)
Middle	26.81 (8.11)	59.02 (11.70)	37.25 (7.37)	15.47 (4.32)	11.77 (3.12)
Senior	30.42 (8.38)	62.75 (11.83)	39.62 (7.32)	16.62 (4.42)	10.70 (3.20)
Years in practice	**	**	**	**	**
<1 year	31.13 (8.36)	64.91 (13.47)	39.58 (8.08)	18.43 (4.75)	10.92 (3.45)
1-5 years	27.88 (8.54)	61.12 (12.88)	37.91 (7.90)	16.83 (4.54)	11.68 (3.44)
6-10 years	26.69 (8.01)	59.93 (12.21)	37.57 (7.64)	15.95 (4.42)	12.00 (3.13)
11-15 years	27.20 (8.58)	60.25 (12.00)	37.90 (7.45)	15.99 (4.38)	11.61 (3.20)
16-20 year	28.23 (8.36)	59.92 (11.83)	37.86 (7.47)	15.66 (4.42)	11.24 (3.18)
>20 years	30.72 (8.37)	62.49 (11.71)	39.61 (7.28)	16.41 (4.41)	10.61 (3.21)
Number of hospital beds	**	**	**	**	**
<5	30.03 (8.51)	63.02 (13.08)	39.36 (7.90)	17.16 (4.77)	10.63 (3.36)
5-10	28.38 (8.15)	61.46 (11.87)	38.62 (7.30)	16.39 (4.38)	11.45 (3.16)
11-15	27.75 (8.42)	60.36 (11.78)	37.82 (7.37)	16.15 (4.38)	11.58 (3.28)
16-20	27.90 (8.70)	59.64 (12.74)	37.46 (8.13)	15.85 (4.44)	11.40 (3.35)
>20	30.14 (9.34)	61.89 (13.24)	39.04 (8.26)	16.39 (4.76)	11.00 (3.49)
Rest days / week	**	**	**	**	**
0 day	26.29 (8.43)	58.15 (12.29)	36.54 (7.74)	15.41 (4.41)	12.16 (3.22)
1 day	29.32 (8.38)	62.27 (12.02)	39.12 (7.43)	16.63 (4.45)	11.01 (3.20)
2 days	30.90 (7.98)	64.32 (11.43)	40.25 (6.98)	17.41 (4.35)	10.55 (3.28)

3 days	34.53 (6.35)	66.89 (12.17)	41.68 (7.08)	18.11 (4.78)	10.89 (3.41)
Monthly income (CNY)	**	**	**	**	**
<10000	27.86 (8.46)	60.42 (12.215)	37.96 (7.60)	16.08 (4.47)	11.61 (3.24)
10001-20000	31.19 (8.02)	63.95 (11.678)	40.01 (7.19)	17.31 (4.25)	10.21 (3.19)
20001-30000	33.03 (8.05)	68.34 (10.737)	42.42 (6.35)	19.07 (4.22)	9.19 (3.32)
>30000	37.46 (8.12)	70.77 (14.866)	44.42 (9.94)	19.19 (5.36)	10.54 (4.07)

The statistical test was 2-tailed, and $P<0.05$ was considered significant.

*$p<0.05$; **$p<0.01$

Table 6 Pearson bivariate correlations

Item	Mean	SD	1	2	3	4
1) Occupational identity	28.52	8.516	NA			
2) General job satisfaction	61.15	12.252	.702**	NA		
3) Intrinsic job satisfaction	38.39	7.607	.704**	.953**	NA	
4) Extrinsic job satisfaction	16.34	4.481	.564**	.878**	.706**	NA
5) Turnover intention	11.35	3.289	-.601**	-.605**	-.563**	-.557**

The statistical test was 2-tailed, and $P<0.05$ was considered significant.

*$p<0.05$; **$p<0.01$

Table 7 Mediating effects analysis of occupational identity on turnover intention

Mediation variable	Indirect effect	Boot SE	Boot CI		Relative mediating effect/%
			Lower bound	Upper bound	
IJS	-.028	.006	-.017	-.039	12.56
EJS	-.015	.002	-.011	-.019	6.73
IJS EJS	-.047	.003	-.040	-.053	21.08

Figures

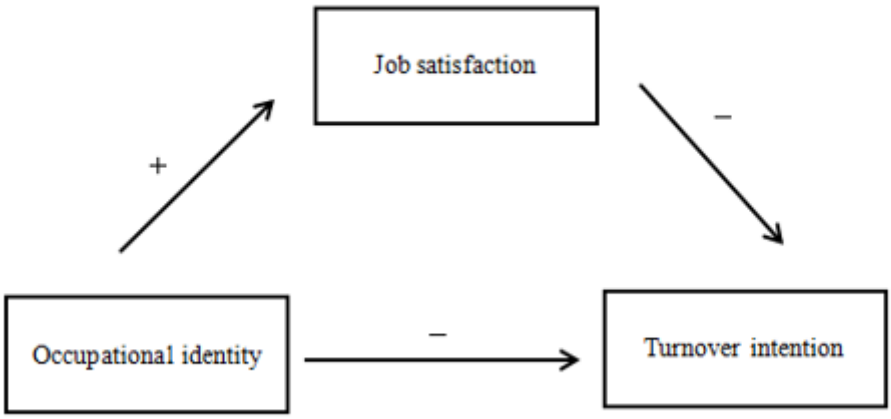
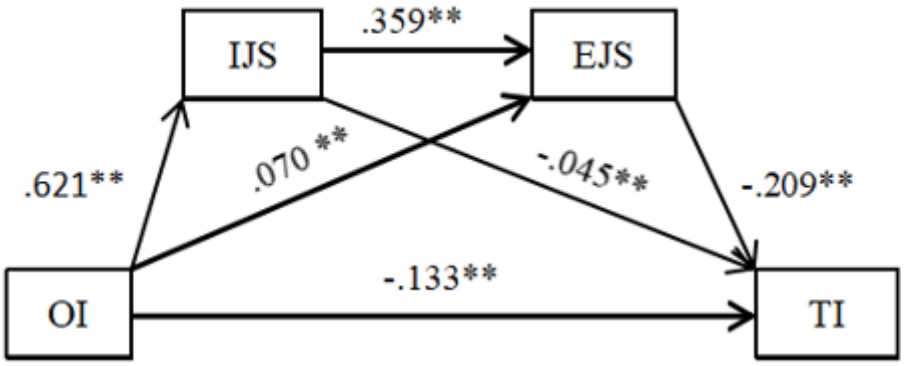


Figure 1

The theoretical model and hypotheses



The statistical test was 2-tailed, and $P<0.05$ was considered significant.

*$p<0.05$; **$p<0.01$

Figure 2

Mediating effect model. The statistical test was 2-tailed, and P<0.05 was considered significant. *p<0.05; **p<0.01

Supplementary Files

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