

# Job Satisfaction and Self-Perceived Health Status among Primary Care Providers in China

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## Research

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# Abstract

**Background:** Healthcare providers' health and safety can influence the quality of patient care. The attitude towards work, either satisfaction or dissatisfaction, could influence the way in which people perceive their health status. To check this hypothesis, some studies have shown an association between healthcare providers' health status and job satisfaction. The present study examined the associations between self-perceived health status and job satisfaction among primary care providers in China, and the moderating effect of job type.

**Methods:** Data were collected by using questionnaire survey among Chinese primary care providers, who work for general practice teams (GPTs). The GPT members' self-perceived health, job satisfaction, and job type were evaluated, where job satisfaction comprised work, promotion and training, and work environment. Multivariate logistic regression analysis was performed.

**Findings:** Of the 536 participants, 48.51% reported good physical health, and 55.78% reported good mental health. Participants reported being moderately satisfied with their job. Self-perceived physical and mental health were significantly and positively associated with job satisfaction in similar magnitudes. Promotion and training satisfaction were more strongly associated with physical health, whereas work environment had the strongest association with mental health. Job type moderated this association, wherein the association was significant only for non-general practitioners (non-GPs).

**Conclusion:** Primary care providers' job satisfaction is significantly associated with their self-perceived health. Actions are needed to increase their job satisfaction and therefore to improve their health. Meanwhile, further research into GPs' health determinants is needed.

## Background

Employees' health status is of vital importance, because it may significantly affect work performance and productivity. In healthcare settings, this is even more noticeable, as healthcare providers' health and safety can influence the quality of patient care (Scheepers et al., 2015; Tyzuk, 2012; Williams et al., 2007). This makes healthcare providers' occupational health even more significant and warrants attention to both their physical and mental health. A study showed that physicians' risk of physical and mental illness is partly attributed to their work (Ghosh & Joshi, 2008).

An emerging body of evidence suggests that individuals' job satisfaction is associated with their health, although research specifically on healthcare providers is scarce. A study reported people who have lower job satisfaction were more likely to have more severe physical illness, and poor mental health among senior civil servants in the UK (Bogg & Cooper, 1995). In the context of the Danish public service system, job dissatisfaction was shown to be a predictor of mental health disorders including depression, anxiety, and substance abuse (Jensen et al., 2010). A study in Nigeria concluded that psychological disorders are more prevalent among doctors who are dissatisfied with their job (Ofili et al., 2004). A meta-analysis of 485 studies suggested that employees' job satisfaction was strongly associated with mental health and

moderately associated with subjective physical health (Faragher et al., 2005). Nurses in a South Korean hospital reported being happier when their job satisfaction was higher (Hwang, 2019). In a teaching hospital in Malaysia, nurses' job satisfaction was significantly associated with depression (Ghawadra et al., 2019). Thus, it can be suggested that the relationship between health status and job satisfaction is consistent across different healthcare occupations.

This study particularly focused on Chinese primary care providers. In China, primary care providers work as members of the general practice team (GPT). As "gatekeepers" of the healthcare system, GPTs provide fundamental care to the general population and play a crucial role in public health management. Thus, the occupational health status of Chinese GPT members requires more attention and investigation. In a GPT, members who have various job types, including general practitioner (GP), clinical physician, traditional Chinese physician, pharmacist, nurse practitioner, and administrator. Since the characteristics of different job types in the same setting may vary from some perspectives (Bovier, et al., 2009; Deshpande & DeMello, 2010), we speculated that the association between GPT members' perceived health status and job satisfaction may differ by job types. However, regarding the relationship between health providers' health status and job satisfaction, existing literature has predominantly focused on a specific job type such as doctors and nurses (Ofili et al., 2004; Hwang, 2019). An empirical comparison of different job types has yet to be conducted.

Therefore, the objective of this study was to investigate the relationship between Chinese GPT members' self-perceived health status and job satisfaction. Moreover, we examined whether this relationship varies across different job types. To the best of our knowledge, this study is the first to examine the relationship of self-perceived health status with job satisfaction by job types in the context of Chinese primary care system. We hypothesized that a) Chinese GPT members' self-perceived physical and mental health is positively associated with their job satisfaction, and b) job type moderates this relationship.

## Methods

### Participants and Data Collection

We conducted primary data collection by using an adapted Minnesota Job Satisfaction Questionnaire (Abugre, 2014; Hancer & George, 2003). The validity and reliability was tested in our previous study (Qiu, 2020). The selection of study sites was based on purposive sampling, with input from our local research partner from health bureaus. The sample size was calculated based on findings from a previous paper (Deshpande & DeMello, 2010), and adjusted for site specific variations and refusal rate. Our sample consisted of 851 GPT members from all the 38 primary care institutes across 5 counties located in 5 cities in 3 Chinese provinces (1 eastern and 2 western provinces). A self-administered questionnaire-based survey was conducted to collect GPT members' individual data. The survey was targeted all GPT members in these 5 counties, and questionnaires were distributed to those who voluntarily agreed to participate. The entire process was monitored by trained inspectors. In addition to individual-level data, we also collected team-level and facility-level data. Data on GPTs that participants belonged to and the

institutes where they worked were also collected, primarily from the team leader and institute operation systems, respectively.

## **Questionnaire and Measures**

The individual-level questionnaire consisted of two parts. The first part comprised questions on participants' demographic characteristics and self-perceived indicators, such as health and stress. The second part comprised 40 questions on participants' job satisfaction.

### ***Health Measures***

Two self-perceived health aspects, physical health and mental health, were investigated in this study. Participants were asked two questions: "How do you perceive your physical health status?" and "How do you perceive your mental health status?" Responses were made on a 5-point likert scale (1 = very bad, 2 = bad, 3 = fair, 4 = good, 5 = very good). Participants who rated their health status as 4 or 5 were considered as healthy levels.

### ***Job Satisfaction***

The Minnesota Satisfaction Questionnaire (MSQ) is a widely-used measure to assess the level of job satisfaction (Abugre, 2014; Hancer & George, 2003). In this study, the short-form MSQ, which consisted of 20 questions, was mainly used to evaluate GPT members' satisfaction with their work. Two more categories—satisfaction with promotion and training (P&T) and satisfaction with work environment—were added, in which each category consisted of ten questions. It must be noted that all questions were slightly modified for the Chinese context. Responses were made on a 5-point likert scale (5 = very satisfied, 4 = satisfied, 3 = neither satisfied nor dissatisfied, 2 = dissatisfied, and 1 = very dissatisfied). With a detailed scoring system, we were able to examine the overall job satisfaction and their satisfaction in three constructs. The overall job satisfaction scores were obtained by summing the scores on all questions.

### ***Job Type***

In a GPT, members undertake various tasks and responsibilities. Satisfaction with job and self-perceived health status vary with job characteristics. Since the interest of this study was the GP group, we divided all participants into two groups: GPs and non-GPs.

### ***Control Variables***

Based on previous studies, we adjusted for confounding variables (Delattre et al., 2019; Virtanen et al., 2005; Wang et al., 2012). Control variables primarily included demographic characteristics, such as age, gender, hukou status (registered residency status in China), education level, marital status, level of professional rank (the categories of professional levels included none, junior, intermediate, deputy senior and senior levels.), number of children, and employment status. Employment status was included,

because a previous study reported that temporary workers were more likely to have psychological disorders (Virtanen et al., 2005). Two job stressors—self-reported stress and burnout—were also included. Job stress can strongly affect physicians' physical and mental health (Williams et al., 2002), and burnout from too much workload is often reported among primary care providers and is known to have a considerable negative effect on individuals' health status (Virtanen et al., 2005). Stress and burnout were assessed by asking participants the following questions: "How stressed do you feel at work?" and "How exhausted do you feel at work?" For these questions, the response were categorized as "not at all," "little," "moderately," "somewhat," or "very much." In this study, responses in "moderately," "somewhat," and "very much" were considered to indicate stress or burnout. In addition, institute fixed effect was included to eliminate unobserved institute effects.

## **Data Analysis**

Since the self-perceived health measures were dummy variables, multivariable logistic regression models were applied in this study (Snyder et al., 2020). Data from participants who did not provide complete responses were excluded from the final sample.

First, we described all variables in terms of means and standard deviations, or numbers and percentages. Among the independent variables, job satisfaction and job type were the main interest of this study. Thus, we examined the distribution of being physically and mentally healthy based on job satisfaction or job type. Next, we presented the distribution of being physically and mentally healthy by joint categorization of job satisfaction and job type. Finally, the odds ratio and 95% confidence interval of job satisfaction on health were reported with full sample estimation and by job type. The equality of the odds ratio between GP group and non-GP group was tested using chi-square analysis. All analyses were conducted using Stata 14.

# **Results**

## **Descriptive Statistics**

Descriptive statistics for all the variables are shown in Table 1. Of the 851 participants, data from 536 individuals with complete responses were analyzed. Higher proportion of participants reported better mental health (55.78%) than physical health (48.51%). Regarding job satisfaction, participants reported being moderately satisfied with their job with a mean score of 3.20. Among the three categories of job satisfaction, participants reported the highest satisfaction with work environment (3.33) and the least satisfaction with the work itself (3.09). In this study, 30.41% of the participants were GPs.

Over 70% of the participants were aged between 26 and 45 years, and most of them (81.16%) were female. Further, 72.20% had urban hukou, and 74.30% reported being married. More than half of the participants had completed undergraduate education, and approximately 40% had achieved middle professional rank. Approximately 75% of respondents had one or more children. Only 36.38% were employed with official human resource registration (which guarantees a permanent job position).

Regarding stress and burnout, 98.51% of the participants reported being stressed, and 86.94% reported burnout, indicating that job stress and burnout were common among GPT members.

Detailed self-perceived health distribution by job satisfaction or job type is presented in Table 2. Higher job satisfaction—overall satisfaction or satisfaction with each of the three components—was associated with GPT members perceiving better physical and mental health. There was a greater difference between the satisfied and unsatisfied groups in terms of mental health, except for satisfaction with P&T. Furthermore, the non-GP group reported better physical (60.12%) and mental health (54.60%). Comparing the physical health and mental health of all groups in Table 2, our sample reported better mental health, except for the non-GP group.

Table 3 shows the distribution of self-perceived health status by job satisfaction and job type, respectively. Generally, higher overall job satisfaction was associated with better physical and mental health, except for GPs' satisfaction with their work and the work environment. GPs reported better physical health when they were not satisfied with the work itself (42.57% vs. 35.48%) or the work environment (40.79% vs. 39.08%). Comparing the GP and non-GP groups, GPs reported poorer physical and mental health even with a similar degree of job satisfaction.

## **Results of the Logistic Regression Analysis**

All participants' self-perceived physical and mental health was significantly associated with individual job satisfaction (Table 4). The odds ratio was similar for physical and mental health. The odds of reporting good physical or mental health was 1.02 (95% CI=[1.01, 1.03]) times one-unit increase in the overall job satisfaction score. Physical health had significant association with P&T satisfaction, while mental health had significant association with work environment satisfaction. One-unit increase in P&T satisfaction was associated with 1.07 (95% CI=[1.04, 1.11]) times the odds of reporting good physical health. A one-unit increase in satisfaction with work environment was associated with 1.08 (95% CI=[1.04, 1.12]) times the odds of reporting good mental health. Moreover, the results showed that burnout could significantly predict physical and mental health status, whereas stress could not.

Strictly speaking, a significant relationship was only observed when the job type was not GP. For non-GPs, a one-unit increase in the overall job satisfaction was associated with 1.03 (95% CI=[1.02, 1.04]) times the odds of reporting good physical and mental health. Among the three aspects of job satisfaction, environment satisfaction had the largest odds ratio on non-GPs' self-reported health. One-unit increase in work environment satisfaction was related to 1.10 (95% CI=[1.05, 1.14]) times the odds of reporting good physical health and 1.09 (95% CI=[1.05, 1.14]) times the odds of reporting good mental health. The results showed a significant difference (at 95% CI) between GPs and non-GPs with regards to the relationship of physical health with overall job satisfaction, work satisfaction, and work environment satisfaction. In contrast, only the relationship between mental health and work satisfaction significantly varied across job types.

## Discussion

In this study, self-perceived health status of the GPT members was generally not positive, in keeping with the findings from previous studies (Ghawadra et al., 2019; Ofili et al., 2004). Less than half of the participants reported good physical health, whereas approximately 55% perceived themselves to be mentally healthy. The level of overall job satisfaction was not high (mean score = 3.20), and 54% reported being satisfied with their work. Participants reported being most satisfied with the work environment and least satisfied with the work itself. In contrast, Ghawadra et al. (2019) reported a much higher job satisfaction level, with 92% nurses being satisfied with their job, although only 30% doctors reported being very satisfied or satisfied with their jobs at a teaching hospital in Nigeria (Ofili et al., 2004). This suggests that job type may influence the level of job satisfaction.

Our study provides a precise assessment of the relationship between health and job satisfaction, and the findings are consistent with those reported in existing literature. GPT members' self-perceived physical and mental health were both significantly and positively associated with their job satisfaction (Faragher et al., 2005; Ghawadra et al., 2019; Bovier et al., 2009; Hwang, 2019). A meta-analysis by Faragher et al. (2005) reported a much stronger relationship between job satisfaction and mental health, compared with the association between job satisfaction and physical health. However, our results showed similar odds ratio (OR=1.02) for both physical and mental health. This finding is plausible, considering the high correlation between self-perceived physical and mental health (correlation coefficient = 0.631) in our sample.

This study is not the first to investigate the relationship between detailed dimensions of job satisfaction and individual health. Bovier et al. (2009) used the subscales of work-related satisfaction to assess the association between job satisfaction and mental health of primary care physicians in Switzerland. They reported that not all subscales were significant predictors of mental health; the ones that were significant were satisfaction with current income, social prestige, and professional relationships. We similarly assessed subscales of job satisfaction in the present study, but using different components of job satisfaction— work itself, P&T, work environment. We found that all three components significantly predicted physical and mental health. Furthermore, the magnitude of this relationship varied moderately across the three components of job satisfaction. More detailed subscales of job satisfaction are needed in the future to better understand the implications of this relationship.

We also found that the relationship between self-reported health status and job satisfaction differs between GPs and non-GPs. GPs' health was not significantly associated with job satisfaction, whereas non-GPs' health was. This finding might be explained by the fact that non-GPs are more sensitive to unhappiness and dissatisfaction with their job, which is supported in literature. Freeborn et al. (2002) conducted a survey of primary care providers' job satisfaction and well-being conditions. Compared to primary care physicians, physician assistants and nurse practitioners reported a higher level of daily stress during work. These findings suggest that physicians might be better able to manage work stress;

thus, their health status is not affected easily. Therefore, our finding that job type was an important moderator in the relationship between primary care providers’ health and job satisfaction was supported.

**Limitations**

The present study contributed to the limited literature on primary physicians’ health and job satisfaction. Our questionnaire survey is novel, in that data were collected at three levels (individual, team, and institutional). We used individual level data for the current study.

A limitation of this study was that it employed a cross-sectional design, which precluded causal inferences. A panel dataset through follow-up surveys in the future would provide us with longitudinal data. Although our participants were selected from three provinces in China, our sample was not nationally representative. In addition, participants’ health status was self-reported, which is not an objective measure of health.

**Conclusion**

The objective of our study was to evaluate the relationship between job satisfaction and self-perceived health status in the Chinese primary care setting. The study showed that primary care providers with higher job satisfaction level were more likely to perceive good physical and mental health. Since less than half of our participants reported good physical health and only 55% reported good mental health, there is an urgent need to promote Chinese primary care providers’ job satisfaction in order to improve their health status. Meanwhile, it is notable that this relationship was significant among primary care providers, except for GPs. Therefore job satisfaction interventions may be more effective for non-GPs than for GPs. More research into the predictors of GPs’ health is needed.

**Implications for Occupational Health Practice**

Health intervention strategies should focus on improving Chinese primary care providers’ job satisfaction. Among the different dimensions of job satisfaction, participants reported being least satisfied with their work, whereas work environment had the strongest association with healthcare providers’ physical and mental health. Therefore, adequate workfare and a comfortable work environment should be provided as initial measures, and non-GPs need more attention when implement these interventions.

On the one hand, work satisfaction can be increased by improving work stability, flexibility and employees’ sense of achievement as well. On the other hand, primary care work should be given more importance. It is the government’s and healthcare facilities’ responsibility to help build primary care physicians’ and workers’ social reputation and to improve the doctor-patient relationship.

**Tables**

**Table 1 Descriptive Statistics of Working Sample (n=536)**



Measures	n/Mean	%/SD
Perceived physical health		
Healthy	260	48.51
Unhealthy	276	51.49
Perceived mental health		
Healthy	299	55.78
Unhealthy	237	44.22
Overall satisfaction/40	3.20	0.59
Work satisfaction/20	3.09	0.64
P&T satisfaction/10	3.29	0.66
Environment satisfaction/10	3.33	0.61
Job type		
GP	163	30.41
Non-GP	373	69.59
Age range (years)		
19-25	63	11.75
26-35	224	41.79
36-45	163	30.41
46-55	78	14.55
56-65	8	1.49
Gender		
Female	435	81.16
Male	101	18.84
Hukou status		
Urban	387	72.20
Rural	149	27.80
Marital status		
Married	429	74.30
Unmarried	107	25.70
Highest education level		
College and below	260	48.51
Undergraduate and above	276	51.49
Professional title		
Primary and below	317	59.14
Intermediate and above	219	40.86
Number of children		
0	130	24.25
1	314	58.58
2 and more	92	17.16
Employment status		
Official	195	36.38
Others	341	63.62
Stress		
Stressed	528	98.51
Not stressed	8	1.49
Burnout		
Burnout	466	86.94
Non-burnout	70	13.06

Note. P&T: Promotion and Training. GP: General Practitioner.

**Table 2 Self-Perceived Health by Job Satisfaction or Job Type (n=536)**

Variables	Physically healthy n(%)	Physically unhealthy n(%)	Mentally healthy n(%)	Mentally unhealthy n(%)
Overall job satisfaction				
Satisfied	163(56.40)	126(43.60)	192(66.44)	97(33.56)
Unsatisfied	97(39.27)	150(60.73)	107(43.32)	140(56.68)
Work				
Satisfied	144(58.06)	104(41.94)	168(67.74)	80(32.26)
Unsatisfied	116(40.28)	172(59.72)	131(45.49)	157(54.51)
P&T				
Satisfied	142(58.20)	102(41.80)	157(64.34)	87(35.66)
Unsatisfied	118(40.41)	174(59.59)	142(48.63)	150(51.37)
Environment				
Satisfied	158(55.24)	128(44.76)	189(66.08)	97(33.92)
Unsatisfied	102(40.80)	148(59.20)	110(44.00)	140(56.00)
Job type				
GP	65(39.88)	98(60.12)	74(45.40)	89(54.60)
Non-GP	195(60.12)	178(39.88)	225(54.60)	148(45.40)
Total	260	276	299	237

Note. P&T: Promotion and Training. GP: General Practitioner.

**Table 3 Self-Perceived Health by Job Satisfaction and Job Type (n=536)**

Variables	Physically healthy n(%)	Physically unhealthy n(%)	Mentally healthy n(%)	Mentally unhealthy n(%)
Job type is GP (n=163).				
Overall job satisfaction				
Satisfied	33(41.25)	47(58.75)	42(52.50)	38(47.50)
Unsatisfied	32(38.55)	51(61.45)	32(38.55)	51(61.45)
Work				
Satisfied	22(35.48)	40(64.52)	31(50.00)	31(50.00)
Unsatisfied	43(42.57)	58(57.43)	43(42.57)	58(57.43)
P&T				
Satisfied	35(44.87)	43(55.13)	39(50.00)	39(50.00)
Unsatisfied	30(35.29)	55(64.71)	35(41.18)	50(58.82)
Environment				
Satisfied	34(39.08)	53(60.92)	45(51.72)	42(48.28)
Unsatisfied	31(40.79)	45(59.21)	29(38.16)	47(61.84)
Job type is non-GP (n=373).				
Overall job satisfaction				
Satisfied	130(62.20)	79(37.80)	150(71.77)	59(28.23)
unsatisfied	65(39.63)	99(60.37)	75(45.73)	89(54.27)
Work				
Satisfied	122(65.59)	64(34.41)	137(73.66)	49(26.34)
Unsatisfied	73(39.04)	114(60.96)	88(47.06)	99(52.94)
P&T				
Satisfied	107(64.46)	59(35.54)	118(71.08)	48(28.92)
Unsatisfied	88(42.51)	119(57.49)	107(51.69)	100(48.31)
Environment				
Satisfied	124(62.31)	75(37.69)	144(72.36)	55(27.64)
Unsatisfied	71(40.80)	103(59.20)	81(46.55)	93(53.45)

Note. P&T: Promotion and Training. GP: General Practitioner.

**Table 4 Self-Perceived Health, Job Satisfaction, and Other Predictors (n=536<sup>a</sup>)**

VARIABLES	Physical health Odds ratio [95% CI]		Mental health Odds ratio [95% CI]	
Job satisfaction	Full		Full	
Overall <sup>b</sup>	1.02* [1.01, 1.03]		1.02* [1.01, 1.03]	
Work <sup>b</sup>	1.04* [1.02, 1.06]		1.04* [1.02, 1.06]	
P&T <sup>b</sup>	1.07* [1.04, 1.11]		1.07* [1.03, 1.10]	
Environment <sup>b</sup>	1.07* [1.03, 1.11]		1.08* [1.04, 1.12]	
Job satisfaction	GP	Non-GP	GP	Non-GP
Overall <sup>b</sup>	1.00 [0.98, 1.02]	1.03* [1.02, 1.04]	1.01 [0.99, 1.03]	1.03* [1.02, 1.04]
p value	0.0126		0.1073	
Work <sup>b</sup>	0.99 [0.95, 1.03]	1.06* [1.04, 1.08]	1.00 [0.97, 1.04]	1.05* [1.03, 1.08]
p value	0.0029		0.0215	
P&T <sup>b</sup>	1.06 [0.98, 1.13]	1.09* [1.05, 1.13]	1.07 [1.00, 1.15]	1.07* [1.03, 1.12]
p value	0.4191		0.9479	
Environment <sup>b</sup>	0.96 [0.88, 1.05]	1.10* [1.05, 1.14]	1.02 [0.94, 1.11]	1.09* [1.05, 1.14]
p value	0.0088		0.1285	

Note. P&T: Promotion and Training. GP: General Practitioner. CI=confidence interval.

<sup>a</sup>Some observations (<20) in the study sample were dropped in the regression analysis due to collinearity.

<sup>b</sup>The associations between health and the overall or the three aspects of job satisfaction were estimated. All control variables were always included in each regression analysis.

\*  $p < .05$ .

## Declarations

Ethics approval: Not applicable.

Consent for publication: Not applicable.

Availability of data and material: The data that support the findings of this study are collected by Health and Family Planning Bureau in all the five counties.

Competing interests: The authors declare that they have no competing interests.

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Authors' contributions: JW, HL and JZ conceptualized the study; JZ provided the analyses; all authors drafted and approved the final manuscript.

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