RESEARCH ARTICLE

Job Satisfaction by Chinese Primary Care Doctors Following Health Care Reform

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Abstract

The purpose of this study is to compare primary care doctors' job satisfaction and factors associated with it before and after the latest health care reform in China. Data for the study were obtained from China Primary Care Workforce Surveys conducted in 2008 and 2011. Compared to results from the 2008 survey, primary care doctors (PCDs) in the 2011 survey were more satisfied with their jobs overall as well as work conditions and equipment, but less satisfied with their income. In both surveys rural CHC and village clinic doctors were less satisfied than their urban counterparts with their jobs overall, income, work condition, and equipment. Logistic regressions showed that practice setting (i.e. urban, rural, or village) and educational level were two important factors associated with job satisfaction. These findings demonstrated both significant achievements and further efforts to be made to strengthen primary care workforce and enhance their job satisfaction.

Key Words: China; healthcare reform; job satisfaction; primary care

摘要

本研究的目的是比较近期中国医改实施前后，基层医疗体系医务人员的工作满意度及其相关因素。本研究的数据来自 2008 年和 2011 年进行的中国基层医疗体系医务人员调查。与 2008 年的调查结果相比，2011 年调查显示基层医疗医务人员（Primary Care Doctors）对工作整体状况以及工作环境和医疗设备满意度提高，然而对收入的满意度降低。对于农村社区卫生服务中心和农村卫生室的医务工作者，工作整体状况、收入、工作环境和医疗设备的满意度比城市义务工作者低。Logistic 回归分析显示，工作所在地（例如：城市、乡镇、村）和受

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教育水平是两个与工作满意度密切相关的重要因素。这些研究结果显示，要加强基层医疗医务工作者队伍并提高他们的工作满意度，还需要取得显著的成果和进一步的努力。

关键词：中国，医疗改革，工作满意度，基层医疗

INTRODUCTION

China has a three-tier health care delivery system, the primary care system at the bottom, secondary hospitals in the middle and tertiary hospitals at the top. These 'grass-root healthcare facilities,' as they are referred to in China, consist of 6,903 urban community health centers (urban CHCs), 25,836 community health stations (branches of urban CHCs), 37,836 township health centers (rural CHCs), and 648,424 village clinics and other primary care facilities.[1] From 2005 to 2010, the number of urban CHCs increased by five-fold, while the number of rural CHCs and village clinics remained stable.[1] The number of staff in primary care system accounted for 40% of total health workforce in China, while the number of primary care doctors (PCDs) accounted for 39.3% of all doctors.[1] In 2010, the primary care system received 3.6 billion or 61.9% of total patient visits.[1]

Over the past two decades, it has been demonstrated that effective primary care can contribute to improved access to healthcare services, enhanced health outcomes, reduced health disparities, and cost effectiveness.[2-5] However, since the early 1980s, sustainability of the primary care system in China has been challenged and a large proportion of primary care providers (PCPs) were ill-qualified.[6-8] At the same time, healthcare costs were skyrocketing while most Chinese were not insured or under-insured, especially in rural areas. The healthcare system was inefficient, ineffective and inequitable.[9]

In 2009, China launched its new health care reform. One of its goals is to rebuild the primary care system and reduce healthcare costs due to overuse of more expensive hospital services.[10] The initial three-year strategy (2009-2011) laid out the plan to strengthen infrastructure of urban and rural CHCs and village clinics as well as to enhance the primary care workforce by providing more training opportunities.[11]

International research has established the links between provider satisfaction and improved performance, enhanced institutional loyalty (e.g. high retention and low attrition), better patient outcomes and higher patient satisfaction.[12-16] Therefore, improving primary care providers' job satisfaction is of great importance to stimulate performance of the primary care system. Chinese researchers have conducted several studies examining Chinese primary care providers' job satisfaction. In 2007, Wang et al. reported that the job satisfaction rate of 180 community health workers in Guangdong was 61.0%.[17] In 2009, Zhou et al. reported that satisfaction rate of community health providers was only 30.6%.[18] In the same year, Xing et al. found that 64.62% of rural health workers reported being satisfied with their work.[19] However, there is generally a lack of studies comparing changes in job satisfaction following the health care reform. Other studies evaluating China's health care reform mainly focused on payment mechanisms and financial incentives for providers.[8,20,21] Few studies explored both financial and non-financial factors.

Because of the essential role of primary care in the health care system and that the quality of primary care is highly associated with providers' satisfaction, it is important to assess and enhance the satisfaction level of primary care providers. Moreover, the current health reform in China also focuses on enhancing primary care performance. Therefore, it is important to evaluate the influence of the reform on the primary care system, including the satisfaction level of the primary care workforce, an indispensable part of the system. The objective of this study is to compare PCDs' satisfaction with both financial and non-financial aspects of work and factors associated with satisfaction before and after China's latest health care reform. We used survey data from two

years, 2008 and 2011, to identify changes following the reform in order to provide an empirical base to further implement and refine the health care reform.

METHODS

Data

Data for the study were obtained from China Primary Care Workforce Survey conducted in 2008 and 2011. Sponsored by the Ministry of Health, the nationally representative survey provide a comprehensive assessment of 'grass-root' (i.e. community-based) (village, rural township and urban community) PCDs practicing in rural and urban communities.

The surveys employed multi-stage, stratified purposive sampling design in both years to ensure that surveyed samples were representative of community-based primary care workforce nationwide. Regional differences (eastern, central and western China) and variations in socio-economic and health care development were also accounted for in sampling strategy. In the 2008 survey, we first selected three provinces which represented the average-level economic development in China. In the second stage, two rural counties (three in Shandong) and one urban district were selected based on their general representativeness within the province. Lastly, five rural townships (*Xiang*) within each rural county were selected based on their general representativeness within the selected county. The townships' CHCs became the final sampling unit. In the urban setting, the districts' CHCs became the final sampling unit. In addition, five village clinics were randomly selected from each rural township to capture the practice of village doctors (formally labeled 'bare-foot' doctors). The research team then visited the selected CHCs and clinics. All PCDs were invited to participate in the survey. To ensure confidentiality, a self-administered 20-minute questionnaire was used but research staff was available to address any questions by the respondents. No respondent identifier was recorded and no local cadres were allowed to accompany the study team. All eligible PCDs agreed to participate. The final study sample in 2008 consisted of 615 PCDs, 93 in urban CHCs, 248 in rural CHCs, and 274 in village clinics.

A similar sampling strategy was employed in 2011. First, five provinces were selected including the same three provinces selected in 2008, followed by a selection of two rural counties and one urban district within each province. The criteria for selection were also similar to those used for 2008. Next, three rural townships (*Xiang*) were selected based on their general representativeness within the selected county. Finally, urban CHCs, rural CHCs and village clinics were randomly selected in each urban and rural setting, respectively. The same survey process was also followed. The final study sample in 2011 included 453 PCDs, 121 in urban CHCs, 180 in rural CHCs, and 152 in village clinics.

Measures

The outcome variables in this study represented job satisfaction of PCDs in four aspects, job overall, income, work condition, and equipment. The PCDs surveyed were asked to rate their satisfaction of each measure on a scale. Identical response categories were used on work, income and work condition: very dissatisfied (1), dissatisfied (2), average (3), satisfied (4), and very satisfied (5). For equipment, response categories were dissatisfied (1), average (2), and satisfied (3). Satisfaction was measured by the percent of PCDs who responded average, satisfied or very satisfied.

Covariates were selected based on studies that identified both intrinsic and extrinsic factors determining job satisfaction.[16,22] Intrinsic factors focused on PCDs' individual characteristics including gender, age, education, formal medical education, major and years of medical education. Extrinsic factors focused on practice characteristics such as specialty and years of medical practice. Practice setting (i.e. urban CHC, rural CHC, and village clinics) was also included to account for differences in different settings.

Analyses

The analytic strategy was to compare PCDs' job satisfaction and factors associated with it between 2008 and 2011. Profile of Chinese PCDs was first presented with summary statistics of major individual and practice characteristics by practice setting and year. Differences were assessed by Chi-squared tests for categorical variables and t-tests or ANOVA for continuous variables. In addition, PCDs' main duties and work time composition were presented by showing the average percent of time they spent on each activity. The findings were compared by practice setting based on ANOVA and by year based on t-tests.

Secondly, comparative analyses were conducted focusing on the four measures of satisfaction by practice setting and year. The means and standard deviations of satisfaction ratings as well as proportions of being satisfied (i.e. average or above) with each of the four measures were calculated. Differences were assessed by Chi-squared tests for categorical variables and t-tests or ANOVA for continuous variables.

Lastly, associations between job satisfaction and individual as well as practice factors were examined using logistic regressions, which were conducted in both years and for each of the four satisfaction measures. Associated factors of each measure were compared between the two years.

RESULTS

Changes in Profile and Duties of Chinese Primary Care Doctors

Table 1 provides the profile of Chinese primary care doctors in 2008 and 2011. Age and gender distributions remained relatively unchanged in the two years. The average age was 40.6, and around 70% of PCDs were males. However, significant differences in other characteristics were observed between the two surveys. Firstly, the average educational level of PCDs in 2011 was significantly higher than that in 2008. More PCDs had bachelor degrees or higher and formal medical training. The average years of medical education were significantly improved from 2.8 in 2008 to 4 years in 2011 ($p<0.001$). Significant differences were also observed among doctors in urban CHCs, rural CHCs and village clinics, especially in terms of education. Urban CHC PCDs remained the best educated with more getting bachelor degree or higher. The proportion of village doctors receiving formal medical training also increased enormously from 61.3% to 98%.

Table 2 presents the duties and proportions of time devoted to each duty by PCDs. Clinical care accounted for a large proportion of PCDs' time in 2008. However, in 2011 the proportion of time spent on clinical care was decreased, mainly due to reduced proportion of time on diagnosis and treatment and home visits, despite increased time on follow-up. PCDs also spent more time on preventive care, conducting research, .administration management and meetings in 2011.

Job Satisfaction by Chinese Primary Care Doctors

Between 2008 and 2011, overall job satisfaction rate has increased significantly from 83.58% to 92.05% ($p<0.001$) (table 3). Significant increases in satisfaction with work condition (61.95% vs. 80.13%, $p<0.001$) and equipment (40.33% vs. 71.52%, $p<0.001$) were also observed. However, there was a significant decrease in satisfaction with income from 2008 to 2011 (42.6% vs. 31.57%, $p<0.001$). Figure 1 displays the four measures of satisfaction in a rank-order format across the three types of PCDs surveyed in 2008 and 2011. The satisfaction with work condition, equipment and income all correlated with overall job satisfaction, but the relationships between them were not very strong ($r=0.23$, 0.34, 0.20, respectively, $p<.001$).

In addition to the significant differences observed between the two surveys, there were significant differences among PCDs in urban CHCs, rural CHCs and village clinics. In general, although there were no significant differences in overall job satisfaction among the three, urban CHC PCDs had the highest satisfaction rates with income, work condition and equipment in both years. Compared to village doctors, in 2008, fewer rural CHC PCDs were satisfied with income, but more were satisfied with equipment. However, in 2011, village doctors were less satisfied with income and work condition than rural CHC PCDs.

Factors Associated with Primary Care Doctors' Work Satisfaction

Table 4 presents the logistic regression results of the individual and practice characteristics associated with PCDs' job satisfaction in 2008 and 2011. In general, practice location and education were two most important factors associated with job satisfaction, especially in 2011.

In 2008, compared to PCDs working in urban CHCs, rural CHC PCDs had significantly lower odds of being satisfied with work overall (OR=0.247, $p<0.01$) and being satisfied with equipment (OR=0.526, $p<0.05$), while village clinic PCDs had reduced odds of being satisfied with equipment (OR=0.353, $p<0.01$). In 2011, PCDs working in both rural CHCs and village clinics had significantly lower odds of being satisfied with work overall (OR=0.286, $p<0.05$ for rural CHC PCDs; and OR=0.128, $p<0.01$ for village clinic PCDs) and work condition (OR=0.355, $p<0.01$ for rural CHC PCDs; and OR=0.283, $p<0.01$ for village clinic PCDs). In addition, village clinic PCDs were less likely to be satisfied with income than urban CHC PCDs in 2011 (OR=0.364, $p<0.01$).

Furthermore, compared to PCDs with technical school education or lower, PCDs with bachelor degree or higher were less likely to be satisfied with work overall (OR=0.282, $p<0.05$), work condition (OR=0.418, $p<0.05$), and equipment (OR=0.438, $p<0.05$).

DICUSSION

This study provided comparative information on the profile and job satisfaction of Chinese community-based PCDs in two years before and after the health care reform was enacted. The findings demonstrated both achievements and deficiencies in the primary care system in China, which provided important lessons for further implementing and refining health care reform.

First, the fact that primary care doctors were better educated than before suggests that workforce policies on training and personal development have achieved success. However, the study also indicated that PCDs with bachelor degree or higher were more likely to be dissatisfied in 2011, suggesting that there are still inadequacies in the system to recruit and retain practitioners with higher education.

Secondly, the improvement of satisfaction of physicians, especially the notable improvement in satisfaction among urban CHC doctors with work condition and village doctors with equipment, suggests that resources devoted to infrastructure development were effective in improving community-based healthcare facilities. However, the decline in satisfaction with income, especially among village doctors, also reflects the fact that the income level of PCDs was low and not commensurate with the effort they put in. In fact, in the 2011 survey, we also found significant differences in monthly income among urban CHC PCDs (RMB 2092.5 yuan), rural CHC PCDs (RMB 2046.99 yuan), and village clinic doctors (RMB 1247.13 yuan). To enhance their satisfaction and maintain high morale with patient care, policymakers need to address the income deficiency and at least bring their income to the level of other major professions such as lawyers and business people. An effective performance appraisal system should be developed that ties higher income or bonuses to higher productivity and quality of patient care.

Thirdly, the urban-rural gap in the primary care system was still large despite government's effort in reducing urban-rural disparities. Indeed, prioritizing rural communities should be the next focus of healthcare reform. As our study demonstrated, huge gaps remained between rural and urban PCDs in almost every aspect including infrastructure, PCDs' educational level, and job satisfaction. These could all significantly influence PCDs' performance and quality of care, and affect the overall health care in rural communities. Although it is one of the most difficult tasks in the reform, overcoming rural-urban disparities remains a top concern and requires immediate attention.

Finally, as the major workforce for the Equalization of Essential Public Health Services Program, a major initiative to improve access to public health services nationwide, urban and rural primary care facilities have shifted their focus from clinical care to community-based public health work. However, the increasing work pressure of PCDs must also be recognized and dealt with. Our study showed that PCDs now spent more time on administrative chores and community services. Although community services are important, it nevertheless takes away PCDs' time for patient care. As a result, PCDs tend to rush through their patient care or postpone seeing their patients, leading to access and quality concerns. One policy option is to develop more diversified primary care teams with nurses and public health practitioners responsible for the majority of the community based services. Enhancement in management could also relieve the administrative burden on physicians.

There are, however, limitations in this study. First, this study is a cross-sectional study rather than a cohort study, which dictates that association rather than causal relationship can be studied. Secondly, with only three provinces in 2008 and five in 2011 included in the sampling frame and the purposive sampling method (due to limited number of units included in each stratum) instead of random selection, the representativeness of the study sample and comparability between years could be compromised. However, experts do believe that the selected provinces, counties, districts, and villages were generally representative of the typical economic and health development in the respective locale. In addition, the method of data collection (i.e. self-report) could make some measures less reliable. For example, income and benefits could be under reported while work hours exaggerated. Although independent means of corroborations were unavailable, we are generally confident about the overall reliability of respondents' answers, since the study was anonymous and no local cadres were present during data collection. The high participation rate indicates that respondents were generally interested in the study, and judged by the relatively lower level of satisfaction reported, we do not think respondents were hesitant in reporting what they felt. Finally, this study only examined the situation before 2011. The later implementation of the essential medicine policy and the pay-for-performance system may impose further impact on the primary care system. More follow-up studies need to be conducted.

In conclusion, significant achievements have been made in strengthening primary care workforce in China and enhancing their job satisfaction. However, more work needs to be done in establishing a well-functioning incentive and performance appraisal system, narrowing urban-rural gaps, developing diversified primary care teams, and enhancing management in the primary care system.

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Table 1. Profile of Chinese Primary Care Doctors

	2008				2011			
	Total (n=615)	Urban CHC (n=93)	Rural CHC (n=248)	Village Clinic (n=274)	Total (n=453)	Urban CHC (n=121)	Rural CHC (n=180)	Village Clinic (n=152)
Gender (%)								
Male	70.1	60.2***	56.5***	85.8***	66.9	48.8***	64.4***	84.2***
Female	29.9	39.8***	43.6***	14.2***	33.1	51.2***	35.6***	15.8***
Age (mean,SD)	40.6 (10.91)	43.6*** (13.29)	36.2*** (9.44)	43.6*** (9.86)	40.2 (10.42)	42.7*** (12.96)	37.9*** (9.29)	41.0*** (8.79)
Education (%)								
≤High School	17.6###	3.2***	5.2***	33.6***	4.0###	2.5***	0.6***	9.2***
Tech. School	42.4###	15.1***	37.1***	56.6***	40.4###	13.2***	34.4***	69.1***
Asso. Degree	31.1###	57.0***	44.8***	9.9***	34.4###	37.2***	43.9***	21.1***
≥Bachelor	8.9###	24.7***	12.9***	0.0***	21.2###	47.1***	21.1***	0.7***
Formal Med. Educ. (%)								
Yes	79.7###	94.6***	94.4***	61.3***	97.6###	96.7	97.8	98.0
No	20.3###	5.4***	5.7***	38.7***	2.4###	3.3	2.2	2.0
Major (%)								
Western	51.6###	72.0***	68.0***	29.9***	60.3###	67.8***	65.6***	48.0***
Chinese	10.4###	11.8***	11.3***	9.1***	16.6###	16.5***	20.0***	12.5***
Other	38.0###	16.1***	20.7***	61.0***	23.2###	15.7***	14.4***	39.5***
Years of Med. Educ. (mean;SD)	2.8### (1.25)	3.4*** (1.25)	3.1*** (1.07)	2.3*** (1.21)	4.0### (2.37)	5.0*** (2.85)	3.8*** (1.68)	3.6*** (2.46)
Prac. Spec. (%)								
Primary Care	73.7###	73.1***	44.7***	100.0***	66.4###	54.6***	45.8***	100.0***
Surgical	7.0###	4.3***	15.9***	-	9.3###	10.9***	16.2***	-
Obgyn	9.3###	4.3***	21.5***	-	7.1###	6.7***	13.4***	-
Chinese	1.6###	4.3***	2.4***	-	5.8###	7.6***	9.5***	-
Other	8.3###	14.0***	15.5***	-	11.3###	20.2***	15.1***	-
Years of Med. Prac. (mean;SD)	19.5# (11.68)	22.0*** (13.86)	14.5*** (9.51)	23.2*** (11.02)	18.2# (10.81)	19.8** (13.42)	16.0** (9.74)	19.4** (9.24)

Between Group: # 0.05≥p≥0.01; ## 0.01>p≥0.001; ### p<0.001 based on χ^2 test or t-test.
Within Group: * 0.05≥p≥0.01; ** 0.01>p≥0.001; *** p<0.001 based on χ^2 test or ANOVA.

Table 2. Primary Care Doctors' Job Duties (% of time)

	2008				2011			
	Total (n=615)	Urban CHC (n=93)	Rural CHC (n=248)	Village Clinic (n=274)	Total (n=453)	Urban CHC (n=121)	Rural CHC (n=180)	Village Clinic (n=152)
Clinical Care	62.6###	63.7	56.6	67.4	56.3###	57.5	53.8	58.2
Diagnosing & treating	38.2###	37.1***	33.2***	43.0***	31.6###	32.3	30.9	31.8
Explaining condition & Treatment options	14.5	18.4***	16.3***	11.5***	14.1	16.4***	15.4***	10.6***
Home visit	5.7##	3.4***	3.1***	8.7***	4.6##	3.0***	2.7***	8.1***
Follow-up (e.g. postpartum visit)	4.2###	4.8	4.0	4.2	6.1###	5.8***	4.8***	7.8***
Preventive Care	9.2###	10.9	8.0	9.7	15.1###	15.6	13.4	16.7
physical exam, evaluation	2.7###	3.5	2.5	2.7	5.3###	6.6	5.0	4.5
Health education & consultation	5.5###	6.9*	5.0*	5.5*	7.5###	7.5	7.3	7.7
Immunization	0.9###	0.5***	0.5***	1.5***	2.3###	1.5***	1.0***	4.5***
Administration	15.2	14.8	22.3	9.0	15.9	16.5	20.0	10.6
Preparing paper work (patient's record)	12.8	11.5***	20.0***	6.8***	12.7	13.4***	16.7***	7.4***
Administration management & meeting	2.5#	3.3	2.3	2.3	3.2#	3.1	3.3	3.2
Training / Research	4.9##	5.1	4.5	5.2	6.7##	6.5	6.4	7.2
Training or academic exchange	3.5	3.9	3.1	3.8	3.8	3.3	4.0	4.1
Research	1.4###	1.1	1.4	1.4	2.8###	3.2	2.4	3.1
Others (e.g. taking a break)	8.1##	5.6*	8.5*	8.7*	6.1##	4.4**	6.4**	7.2**

Between Groups: # 0.05 ≥ P ≥ 0.01; ## 0.01 > P ≥ 0.001; ### P<0.001 based on t-test.
Within Groups: * 0.05 ≥ P ≥ 0.01; ** 0.01 > P ≥ 0.001; *** P<0.001 based on ANOVA.

Table 3. Chinese Primary Care Doctors' Job Related Satisfaction

	2008				2011			
	Total (n=615)	Urban CHC (n=93)	Rural CHC (n=248)	Village Clinic (n=274)	Total (n=453)	Urban CHC (n=121)	Rural CHC (n=180)	Village Clinic (n=152)
Overall Job Satisfaction	3.28$^{\#}$	3.43	3.26	3.26	3.41$^{\#}$	3.40	3.46	3.36
(mean; SD; %Satisfied)	1.03	0.96	1.02	1.05	0.79	0.73	0.78	0.86
	83.58%$^{\#\#\#}$	91.40%	81.85%	82.48%	92.05%$^{\#\#\#}$	95.87%	91.67%	89.47%
Income	2.22	2.48**	2.11**	2.23**	2.18	2.32***	2.31***	1.92***
(mean; SD; %Satisfied)	1.03	1.08	1.00	1.01	0.91	0.85	0.89	0.92
	42.60%$^{\#\#\#}$	48.39%*	36.69%*	45.99%*	31.57%$^{\#\#\#}$	40.50%***	35%***	20.39%***
Work Cond.	2.69$^{\#\#\#}$	2.98**	2.64**	2.64**	3.13$^{\#\#\#}$	3.24	3.15	3.01
(mean; SD; %Satisfied)	1.02	1.04	0.98	1.03	0.87	0.74	0.91	0.92
	61.95%$^{\#\#\#}$	64.52%	58.87%	63.87%	80.13%$^{\#\#\#}$	89.26%**	78.33%**	75%**
Equipment	1.42$^{\#\#\#}$	1.63***	1.51***	1.27***	2.05$^{\#\#\#}$	2.10	2.08	1.97
(mean; SD; %Satisfied)	0.53	0.57	0.55	0.45	0.78	0.75	0.83	0.76
	40.33%$^{\#\#\#}$	59.14%***	48.79%***	26.28%***	71.52%$^{\#\#\#}$	76.86%	69.44%	69.74%

Notes:
[overall , Income, work condition]: Satisfaction item is coded as (1) Very Dissatisfied, (2) Dissatisfied, (3) Average, (4) Satisfied, and (5) Very Satisfied.
[Equipment]: Satisfaction item is coded as (1) Dissatisfied, (2) Average, (3) Satisfied.
'% satisfied' reflects the % of respondents who were among average, satisfied or very satisfied.
Between Groups: $^{\#}$ 0.05≥ P>0.01; $^{\#\#}$ 0.01≥P >0.001; $^{\#\#\#}$ P≤0.001 based on t-test or chi-squared test.
Within Groups: * 0.05≥ P>0.01; ** 0.01≥P >0.001; *** P≤0.001 based on ANOVA or chi-squared test.

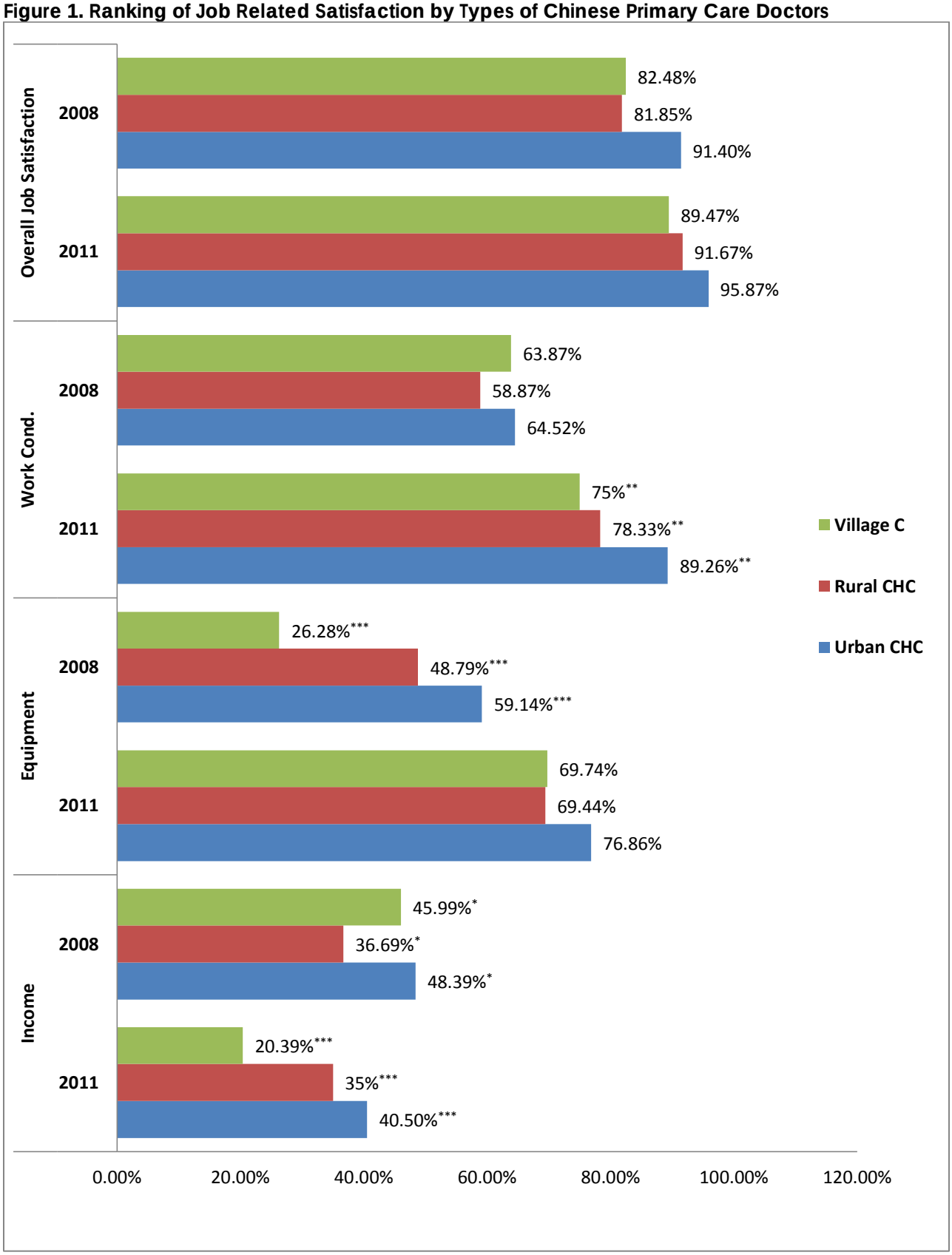
Table 4. Logistic Regressions on Characteristics Associated with Job Satisfaction

	Satisfaction with Work		Satisfaction with Income		Satisfaction with Work Condition		Satisfaction with Equipment	
	2008	**2011**	**2008**	**2011**	**2008**	**2011**	**2008**	**2011**
Location (Odds Ratio;95% C.I.)								
Urban CHC (ref)								
Rural CHC	0.247** (0.100, 0.609)	0.286* (0.088,0.933)	0.638 (0.370,1.099)	0.896 (0.512,1.568)	0.888 (0.513,1.539)	0.355** (0.164,0.770)	0.526* (0.303,0.911)	0.55 (0.296,1.022)
Village Clinic	0.366 (0.131, 1.023)	0.128** (0.029,0.568)	1.215 (0.636,2.322)	0.364** (0.174,0.762)	1.303 (0.673,2.523)	0.283** (0.110,0.730)	0.353** (0.183,0.681)	0.555 (0.254,1.213)
Gender								
Male (ref)								
Female	1.371 (0.793, 2.372)	0.946 (0.420,2.130)	1.234 (0.838,1.819)	1.585* (1.003,2.505)	1.461 (0.983,2.171)	1.495 (0.839,2.663)	1.3 (0.880,1.920)	1.217 (0.748,1.983)
Age	1.054 (0.962, 1.155)	1.042 (0.920,1.181)	1.12** (1.048,1.197)	1.005 (0.940,1.074)	1.081 (1.010,1.157)	0.975 (0.901,1.056)	1.005 (0.939,1.075)	1.027 (0.956,1.103)
Education								
≤Technical School (ref)								
Associate Degree	0.596 (0.322, 1.104)	0.601 (0.235,1.534)	1.263 (0.805,1.981)	0.81 (0.471,1.391)	1.42 (0.904,2.230)	0.771 (0.414,1.438)	1.332 (0.851,2.086)	0.986 (0.563,1.726)
≥Bachelor Degree	0.469 (0.186, 1.179)	0.282* (0.083,0.957)	0.994 (0.484,2.044)	0.503 (0.250,1.012)	1.115 (0.556,2.233)	0.418* (0.181,0.962)	0.967 (0.482,1.940)	0.438* (0.213,0.904)
Formal Med. Educ.								
Yes	1.194	2.364	1.205	0.514	1.115	1	1.098	1.586

	(0.623, 2.289)	(0.250,22.395)	(0.730,1.990)	(0.134,1.977)	(0.665,1.869)	(- , -)	(0.631,1.910)	(0.375,6.700)
No (ref)								
Major								
Western (ref)								
Chinese	0.994	0.609	0.954	0.991	1.011	0.788	1.133	1.659
	(0.444,2.224)	(0.225,1.649)	(0.520,1.749)	(0.489,2.006)	(0.552,1.852)	(0.373,1.664)	(0.610,2.104)	(0.781,3.526)
Other	0.841 (0.492,1.437)	1.949	1.151	0.935	1.045	1.032	0.982	1.468
		(0.680,5.588)	(0.773,1.713)	(0.537,1.629)	(0.698,1.564)	(0.559,1.903)	(0.648,1.489)	(0.846,2.547)
Years of Med. Educ.	0.889	0.937	0.928	1.064	0.905	1.051	0.984	1.056
	(0.724,1.092)	(0.813,1.080)	(0.788,1.094)	(0.972,1.164)	(0.766,1.069)	(0.917,1.204)	(0.827,1.170)	(0.942,1.182)
Practice Specialty								
Primary Care (ref)								
Chinese	1	2.558	2.224	0.89	1.255	6.16	1.84	2.146
	(-,-)	(0.239,27.383)	(0.535,9.246)	(0.293,2.706)	(0.284,5.549)	(0.707,53.702)	(0.439,7.720)	(0.504,9.129)
Other	1.158	0.677	1.376	1.005	1.104	1.013	1.705*	1.339
	(0.606, 2.210)	(0.255,1.800)	(0.842,2.247)	(0.593,1.702)	(0.682,1.786)	(0.528,1.944)	(1.056,2.753)	(0.761,2.355)
Years of Med. Prac.	0.917*	0.937	0.912**	1.024	0.944	1.012	0.986	0.973
	(0.842, 0.999)	(0.832,1.055)	(0.857,0.971)	(0.961,1.092)	(0.886,1.006)	(0.938,1.091)	(0.924,1.052)	(0.908,1.042)

*p<0.05; **p<0.01

Figure 1. Ranking of Job Related Satisfaction by Types of Chinese Primary Care Doctors



Between Groups: # 0.05≥ P>0.01; ## 0.01≥P >0.001; ### P≤0.001 based on t-test.
Within Groups: * 0.05≥ P>0.01; ** 0.01≥P >0.001; *** P≤0.001 based