

What is the Work Environment of Orthopaedic Surgeons in China?

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Abstract

Background Physicians in China face heavy demands from patients and the government for services but deal with the threat of unpredictable legal and physical conflicts with patients, some ending with the death of doctors. More than 40 doctors and nurses have been killed by patients since 2001.

Questions/purposes We sought to evaluate (1) the demographics of orthopaedic practice, (2) duty periods, (3) practice support, and (4) job satisfaction among orthopaedic surgeons in China.

Methods Questionnaires were posted online at www.OrthoChina.org for download by orthopaedic surgeons in

2006 to 2007, and sent to those attending meetings in 2013. In 2013, a total of 1350 surgeons were invited and 456 participated in the survey at meetings. In 2007, during the period of the survey, 9759 individuals were qualified orthopaedic surgeons, and 334 participated in the survey at www.OrthoChina.org.

Results Ninety-one percent of orthopaedic surgeons work in public and 9% in private hospitals. Ninety-four percent work more than 8 hours per day 6 to 7 days a week. Twenty-five percent work more than 12 hours per day 6 to 7 days a week without extra compensation. The majority of orthopaedic surgeons must work on national statutory holidays. Almost none received contractually mandated income for weekends and national holidays. Approximately 80% of participants reported an attack of some kind, including physical or psychologic harm. With respect to job satisfaction, 73% stated they would not choose to be a physician again and 86% reported that they do not want their children to become a physician.

Conclusions China's rapid economic growth and resulting demands for modern health care have resulted in heavy pressure on orthopaedic surgeons, financially and personally. Chinese orthopaedic surgeons are overworked, suffer lack of respect, and face the possibility of serious personal harm. As a consequence, they are demoralized and unsatisfied. Significant reforms are needed.

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Introduction

China is the most populous country in the world and has undergone rapid economic expansion in recent decades. However, its healthcare system has not kept pace. With increasing wealth, patients' demands for access and

services have increased dramatically. In addition, administrative changes in hospital management have resulted in severe financial pressures on physicians. As a result, physicians in China are poorly compensated and face the threat of unpredictable legal and physical conflicts with patients, some ending with the death of doctors. More than 40 doctors and nurses have been killed by patients since 2001, and the relationship between doctors and patients in China appears to be worsening.

In light of this, we sought to evaluate the practice environment of orthopaedic surgeons in China, with an emphasis on changes during the last several years.

We therefore surveyed orthopaedic surgeons in China to assess (1) the demographics of orthopaedic practice, (2) duty periods, (3) practice support, and (4) job satisfaction. We initially performed a survey in 2007 and repeated it in 2013.

Materials and Methods

The first questionnaire had 52 questions which included data regarding work location/environment, income, hospital size, rank in the department, safety-related issues, health-related issues, and job satisfaction. The questionnaire was posted online at www.OrthoChina.org for downloading by the users. All users were qualified orthopaedic surgeons as confirmed by the site's online orthopaedist identity-certifying procedure [9, 10]. The survey was performed from August 26, 2006, to December 31, 2007. Of 9759 qualified orthopedic surgeons, 334 responded to the survey.

The second questionnaire was redesigned with 58 questions based on the first questionnaire. The second survey was given to delegates attending five orthopaedic conferences and workshops in 2013. A total of 1350 surgeons were invited to participate at these various venues and 456 (34%) did so. Epidata (The EpiData Association, Odense, Denmark [www.epidata.dk]) was used to collect and analyze the survey data.

Results

Three hundred eighty-three (332 in 2007) respondents were male and 71 (two in 2007) were female; two returned surveys were missing the sex. Seventy-six percent (86% in 2007) of respondents were between 20 and 40 years old.

Demographics of Practice

In 2013 and 2007, 91% worked in government-run public hospitals and 9% in private hospitals. In 2013, 70% (31%

in 2007) worked in hospitals with more than 500 beds (Level 3 hospitals), 27% (62% in 2007) worked in hospitals with more than 100 beds (Level 2), and 3% (7% in 2007) worked in hospitals with 20 to 100 beds (Level 1 hospitals). Twenty-eight percent (46% in 2007) of respondents have worked more than 10 years and 19% (18% in 2007) have worked between 6 and 10 years. Seventy-two percent performed only orthopaedic surgery and 28% performed nonorthopaedic procedures as well. The majority listed their professional titles as senior residents, attending surgeons, or junior associate chief surgeons in the surveys in 2007 and 2013. This is consistent with practice patterns in China.

Duty Periods, Hours, and Holidays

Ninety-four percent of respondents (81% in 2007) worked more than 8 hours per day 6 to 7 days a week, and 25% worked more than 12 hours per day 6 to 7 days a week without extra compensation. Eighty percent work 6 to 7 days a week. The average respondent took emergency call every 6 days (every 2–3 days in 2007). Fifty-five percent work in orthopaedic departments with more than 60 inpatient beds and 27% with 40 to 60 beds. The average number of inpatient orthopaedic beds for the respondents was 60 in 2007. For outpatients, on average eight outpatients were seen per work hour in 2007 and 2013.

With respect to income (salary with bonus from hospital), in 2007, 63% of participants made less than 24,000 RMB Yuan (USD 3288) per year compared with a national average per-capita income of 21,000 RMB Yuan (USD 2878). By 2013, the national per-capita income had increased to more than 42,000 RMB Yuan (USD 6885), however 39% of survey participants still made less than 24,000 RMB Yuan (USD 3934) per year.

The majority of orthopaedic surgeons work on national statutory holidays, but almost none received contractually mandated income for weekends and national holidays. Sixty-two percent (51% in 2007) stated they had to pay for courses themselves, although the majority of this group had partial coverage from their hospitals. Twenty-one percent (51% in 2007) of respondents felt their hospitals are reluctant or unwilling to purchase new equipment or allow or provide new technology.

Support

Seventy-nine percent (54% in 2007) of respondents felt that they would get hospital support in dealing with patient complaints, disputes, or lawsuits. Twenty-one percent (43% in 2007), however, felt their hospital administration

would be reluctant and/or passive in dealing with adverse patient-related issues. Respondents were asked whether there were any measures to safeguard the safety of medical staff in hospitals from physical and/or psychologic attack by patients, family members, or friends in routine clinical practice. Ninety-four percent (25% in 2007) reported they worked in hospitals with security guards or protective services. Eighty-one percent reported that the security guards patrol on schedule in the hospital for security services, and 63% reported that the security guards can provide timely protection when attacks happen. Seventy-two percent reported there is a police room in their hospital, but only 45% reported that there is an officer on-duty in the police room.

Seventy-seven percent (82% in 2007) of respondents have been attacked and injured physically and/or psychologically. Eighty percent (95% in 2007) said there would be no compensation after being attacked and/or injured at work.

Working Conditions

Laws in China mandate appropriate protection against radiation exposure, and compensation for exposure during the course of work. However, for exposure in the operating room, only 77% of the 2013 surgeons surveyed reported the availability of lead aprons and 59% reported lead screens, whereas only 41% noted the availability of monitors. There was some improvement with respect to compensation. In 2013, 35% reported receiving compensation compared with 19% in 2007.

In 2013, 80% of respondents reported that there was no compensation available in the event of occupational exposure to infection, which mirrored the 90% response in 2007. Again, there was some improvement during the 6 years with respect to costs of treatment of occupational exposure. In 2007, nearly 100% reported that the treatment of infection would be borne by the surgeon. By 2013, 66% reported that this would be covered by the hospital, social insurance, or commercial insurance. In 2007, only 42% of respondents reported that they had access to basic equipment such as plaster, splints and braces, and internal or external fixation devices; this improved to 71% in 2013.

Job Satisfaction

Respondents were dissatisfied with their occupation in both surveys, although there was modest improvement. Fifty-four percent were dissatisfied in both surveys; 19% were extremely dissatisfied in 2007, whereas 4% reported dissatisfaction in 2013. Nineteen percent reported being

satisfied in 2007, whereas this increased to 44% in 2013. The majority would not become physicians again (60% in 2007, 73% in 2013), and would not want their children to become physicians (88% in 2007, 86% in 2013). The respondents felt the top preferred occupations they would seek would be as a teacher or a civil servant working for the government.

Discussion

By the end of 2011, China's population approached 1.35 billion. Despite its rapid economic development, China has not seen its healthcare system keep pace. In 2010, China had 1.4 physicians per 1000 population, which was substantially lower than other countries such as Russia (4.3), France and Germany (3.5), and the United States (2.9) [11]. As a result, the demands placed on physicians, such as orthopaedic surgeons, have become overwhelming. Because of those issues, we sought to evaluate (1) the demographics of orthopaedic practice, (2) duty periods, (3) practice support, and (4) job satisfaction among orthopaedic surgeons in China.

This study has numerous limitations. When compared with the number of registered orthopaedic surgeons in China, the number of respondents is small and may not represent the total group of orthopaedic practitioners. This raises the possibility of nonresponder bias in which those who answer a survey are qualitatively different from the population at large. Second, the participants in the first survey included surgeons nationwide who answered online, but the participants in the second surveys were predominantly from the northwest and southwest parts of China which are underdeveloped when compared with the east. Thus, the two groups may not be comparable; for example, the online survey included respondents who were considerably younger. In addition, practice environments differed between the two groups. Although the majority of respondents were from Level 3 facilities in the 2013 survey and from Level 2 facilities in the 2007 survey, the respondents came from various regions throughout China, and it shows that orthopaedists in Level 3 hospitals have more academic opportunities. Despite these differences, the geographic distribution of the survey revealed that most orthopaedic surgeons have similar working conditions and concerns. The basic information obtained in the surveys is similar to information for most vocations in China.

Demographics of Practice

Large and well-equipped hospitals with experienced and trained staff are present in cities but not in rural regions.

True specialty training is rare and only 13% of doctors are diplomates in surgery [12]. This diploma is only valid in the hospital in which the doctor is registered; it is illegal to perform any medical practice outside the registered hospital. Because there is no diploma for orthopaedic surgery issued from the medical educational licensing system in China [8], any surgeon can perform any procedure.

Hours and Compensation

As a result of the average shift on call for emergencies, with an average of more than 60 orthopaedic inpatient beds, and an expectation to see at least eight outpatients per work hour, there is a heavy workload and pressure on orthopaedists psychologically and physically. Other medical fields have reported similar concerns [5, 7].

Despite the perception of high incomes for physicians in China, we found that many survey respondents received low compensation. Legally, overtime requires mandated compensation; however, the majority of survey respondents reported no pay for overtime, weekend, or holiday work [16].

Hospital Support

Respondents reported improvements in 2013 compared with 2007 in terms of hospital and system support in the event of medical liability claims, with 54% reporting such support in the first survey and 79% in the second. However, physicians still are subject to fines or imprisonment in the event of treatment failure or complications. All doctors in China work without medical liability insurance and they have to pay these fines from their personal income.

With respect to personal safety of healthcare workers, a 2005 survey by the Chinese Hospital Association showed an increase in violent and destructive behavior toward medical staff and hospitals, with more 10,000 doctors attacked and injured each year [26]. In 2010, according to the Chinese Medical Doctor Association, there were 17,243 violent attacks against healthcare workers, including repeated and group attacks [26]. Since 2001, more than 40 doctors have been killed by patients and two doctors committed suicide because of disputes with patients [1–4, 6, 13–15, 17, 18, 20–24]. In 2012, the Ministry of Public Security and the Ministry of Health (now the National Health and Family Planning Commission of China) jointly issued a mandate that Levels 2 and 3 hospitals provide police protection for healthcare workers. However, many physicians report that lack of protection continues to be a problem as shown in our 2013 survey [6, 15, 23].

Working Conditions and Job Satisfaction

Access to basic supplies was better in 2013; however, this may reflect the difference in the level of hospital where respondents work, as Level 3 hospitals have better equipment than Level 2 facilities. Twenty-nine percent of respondents from Level 1 hospitals continue to report poor access to basic supplies for treating patients. In China as a whole, many of those who train as medical providers do not go on to practice. In 2007, the Chinese government reported that one million persons had passed the national license examination for qualification as a medical practitioner since 2001, but 400,000 did not register at any hospital for clinical practice, did not work in medical health services, but worked in other occupations [19, 27]. This is consistent with views expressed by our respondents, including their regret in choosing medicine as a career and the reluctance to recommend medicine as a career to their children.

Concluding Thoughts

As China's standard of living increases, greater demands are placed on medical providers, without corresponding increases in resources. The results have included marked shortfalls in the number of orthopaedic providers, who are overworked and receive little support from hospitals or government. In addition, many providers have been the victims of attacks by patients. Planned reforms by government will fail if healthcare providers' interests and situations are not considered and improved.

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