The association between physicians’ presenteeism and job burnout: a cross-sectional survey study in China

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Abstract

Background: Research shows that physicians often report job burnout and have a high level of presenteeism, but few studies concerns the relationship between job burnout and presenteeism. The purpose of this study was to explore the relationship between physicians' presenteeism and three dimensions of job burnout in China, and to identify aspects that can help alleviate presenteeism.

Methods: A cross-sectional survey involving physicians in second-and third-class medical institutions was conducted in the interior of China. Using a single presenteeism questionnaire and a 15-item Chinese version of the BMI-GS questionnaire, this study investigated prevalence of physicians' presenteeism behavior and job burnout in three dimensions, and determined the relationship between presenteeism and job burnout by logistical model.

Results: Relationships between presenteeism and three dimensions of job burnout were explored, and the influence of demography and work factors were evaluated. The survey was completed by 1376/1547 hospital doctors, with a response rate of 88.9%. 30.7%(n=422) of the subjects reported having presenteeism behavior. Using MBI-GS, 86.8%(n=1195) of physicians were moderately burnout and 6.0%(n=82) were severely job burnout. Logistic regression analysis showed that physicians with moderate, severe emotional exhaustion and severe cynicism were more likely to engage in presenteeism (all p < 0.05). In addition, two other work-related factors, including the physician's department and position, were also more likely to influence their presenteeism (all p < 0.05).

Conclusions: At present, there is quite presenteeism among physicians in the second-and third-class medical institutions in China, which is significantly related to
emotional exhaustion and cynicism. Considering the modifiable job-related factors, health care institutions must take appropriate measures to relieve physicians' job burnout, help them adjust their self-awareness properly, and ensure occupational mental health to alleviate the prevalence of presenteeism. Keywords: presenteeism, job burnout, emotional exhaustion, cynicism, physicians

Background

Presenteeism refers to the behavior of employees working despite illness. As a global trend, it is now widely considered a negative phenomenon [1]. Specifically, presenteeism not only harms the physical and mental health of employees but also produces serious consequences to the organization, such as decreased work efficiency and reduced output. Presenteeism in various occupations has been investigated in the United States [2], Canada [3], the United Kingdom [4], South Korea [5] and other countries, and the probability of this behavior varies from 30–90%. Among all occupations, physicians have a higher probability of presenteeism [6–9]. Moreover, when physicians contract contagious diseases or other illnesses, they affect the health of patients and other medical workers as well as their own health [3, 10, 11], which causes a significant impact and serious consequences [12, 13]. In theoretical research, however, attention to physician presenteeism is still relatively insufficient.

There is no standard definition of presenteeism in existing studies, but there are two main understandings. One is represented by American medical scholars and health consultants, who believe that presenteeism refers to a decrease in efficiency due to individual health problems [14–18]. The second understanding is represented by European scholars, who believe that presenteeism refers to working despite
illness. Their research mainly focuses on why employees make the decision to work despite illness [10, 19–23]. In contrast to the former, the latter limits the definition of presenteeism to the behavioral level and does not discuss the motivations or consequences of the behavior, which avoids the confusion of the causation of presenteeism [24]. Therefore, this paper employs the second definition to explain presenteeism.

In China, there are many cases of doctors and nurses working despite illness, which reflects not only the requirement of professional ethics but also the display of "enduring hardship" that is encouraged and advocated by Chinese traditional culture. However, medical personnel in China have occasionally fallen ill or even died suddenly at work, which distresses people and arouses concern about the presenteeism of Chinese medical personnel.

To reduce the occurrence of presenteeism, it is necessary to adopt medical or other health-related measures to improve the health status of employees in an effort to improve their working efficiency and productivity. To alleviate physician presenteeism, poor working conditions or other influencing factors should be improved so that employees are no longer forced to work when they are ill [1].

Among the many factors that influence presenteeism [25], mental health is often the primary cause, including depression, anxiety, tension, and stress [26–29], followed by physical disease-related factors, such as bone pain and muscle soreness [30]. In addition, job burnout is one of the mental problems that may lead to presenteeism [31]. There are many definitions of job burnout [32], among which Maslach's three-dimensional concept of job burnout is widely accepted. Maslach suggests that job burnout is a syndrome of emotional exhaustion, cynicism and reduced personal accomplishment in the process of daily contact with clients [33].
Specifically, job burnout can be seen as a consequence of enduring working stress [34] and is a critical issue for organizations [35] because it affects the physical and mental health of employees [36] and may lead to ulcers, cardiovascular diseases, cancer, anxiety and depression. Moreover, job burnout further leads to the absenteeism and turnover of employees [37], ultimately damaging the overall production efficiency of the organization. Maslach and Leiter proposed the general model of job burnout in 1996 [38]. Absence and sickness can be attributed to job burnout, and presenteeism is conceptually similar to these two phenomena. Therefore, it can be inferred that job burnout is also one of the antecedent causes of presenteeism.

Studies on mental health problems have examined depression, anxiety, tension and stress, but there are few studies on job burnout and presenteeism. Dellve et al. found that working despite illness was associated with job burnout, health status, and sick leave [39]. A study of inpatient nurses found an interaction between job burnout and presenteeism [40]. Presenteeism has also been shown to increase the likelihood of burnout if physical and psychological recovery is inadequate in cases of illness or stress [40, 41]. In summary, insufficient research on presenteeism and job burnout in foreign countries and a lack of scientific and rigorous verification leads to divergence in the conclusion that presenteeism is affected by job burnout. Presenteeism has also drawn attention in China, but research has mainly focused on the reasons for the emergence of presenteeism and an overview of its theoretical development [42–45]. Field surveys have tended to focus on employees [46], teachers [47] and college students [48], while in the field of health care, surveys have mostly measured the presenteeism behavior of nurses or all health care workers [49, 50]. There are few studies of job burnout and presenteeism among ICU
nurses [51, 52] and medical staff [53, 54]. On the one hand, this suggests that Chinese research has paid more attention to the presenteeism of medical staff represented by nurses. On the other hand, it indicates that physicians’ presenteeism has not aroused people’s concern. In particular, the influencing factors have not been deeply analyzed in combination with practical results, such as the relationship between job burnout and presenteeism.

Theoretically, there is evidence that job burnout increases the probability of presenteeism, but this conclusion has not been widely accepted worldwide and cannot be generalized in China. In fact, Chinese physicians are frequently reported to show the symptoms of job burnout while working when ill [31, 55-57] and have a lower than average overall level of mental health, which is a key factor restricting the quality of medical services [58, 59]. In this context, it is necessary to study the relationship between physician presenteeism and job burnout in China. Given the lack of attention to physician burnout in China, this study can help physicians recognize the importance of their health and inspire policy makers and hospital managers to reduce physician presenteeism by alleviating job burnout and, ultimately, to ensure the overall quality of medical services.

In China, medical institutions are divided into three levels: small primary medical institutions, medium-sized secondary medical institutions, and large tertiary medical institutions. The functions of these different levels of medical institutions are different. Second- and third-class medical institutions, which are mostly municipal, provincial or national general hospitals, provide specialized health protection and nursing services for many regions and play an important role in medical education and scientific research. Some studies have found that the incidence of presenteeism in primary medical institutions is slightly lower [60, 61]
than in second- and third-class medical institutions. Therefore, for greater representativeness, doctors working in second- and third-class institutions were selected as the research object.

Based on the above analysis, this study aimed to determine the relationship between job burnout and presenteeism among second- and third-class physicians in China and to determine the causal relationship between job burnout and presenteeism using survey results. The purpose of the study was to understand the actual level of physician presenteeism and job burnout in China to help hospital leaders formulate regulatory policies to reduce the occurrence of hospital presenteeism and guarantee the overall quality of medical institutions.

Method

Study design and sampling

Based on informed consent and voluntary participation, a cross-sectional study was conducted from July to August 2019 to investigate the status of presenteeism and job burnout among medical practitioners in China's second- and third-class medical institutions. To make the sample coverage more extensive and reflect the overall working status of Chinese physicians, a multistage sampling method was adopted in this study. The steps are as follows.

(1) All 31 provinces (autonomous regions and municipalities directly under the Central Government) in mainland China were included in the sampling. In each province, all cities/urban areas under provincial jurisdiction were divided into 3 urban groups (high, medium and low) according to their GDP per capita in 2018, for a total of 93 urban groups in 31 provinces.

(2) Among hospitals in which permission was granted to conduct the investigation,
hospitals were selected by convenience sampling. At least 2 second-class hospitals and 2 third-class hospitals were selected from each city group.

(3) In each hospital in which at least two doctors were willing to participate in and complete the investigation, we used convenience sampling to select the interviewees. The criteria for the selection of doctors were outpatient or inpatient doctors who had obtained medical qualification certificates, held positions in clinical departments or had prescription rights. Doctors excluded from the selection were nonclinical physicians, such as laboratory technicians, nonprescription physicians (such as physician assistants) and physicians who were not registered in the sample hospital.

Questionnaire design

The questionnaire was categorized into three parts. The first part was a series of questions about demographic and work-related information. Among the demographic factors, age, sex, marital status, number of children and educational level were measured. Working factors mainly included hospital department, working years, professional title and position [25].

The second part followed Aronsson’s suggestion and used a single question to evaluate physicians’ presenteeism [7]. The third part was a general scale of job burnout, which was adopted to capture the level of physicians’ job burnout. The Chinese version of the 15-item Maslach Burnout Service Inventory (MBI-GS) was adopted. In 2002, Li Chaoping revised the MBI-GS based on the context of China. Chinese scholars tested the validity and reliability of the revised MBI-GS and found consistency coefficients of 0.88, 0.83 and 0.82. Thus, the scale has good reliability and validity in China [62].
Data collection

This study selected undergraduates who had received research and training and had a medical professional background as investigators. For each department with at least 5 doctors who agreed to participate in the survey, the doctors in the sample hospital were interviewed randomly, and relevant information was collected. The training content for the researchers included the background, purpose, etiquette, methods and skills of the research, methods of dealing with emergencies and the use of research software purchased and redeveloped by the research team. The content of this study was examined by the Ethics Review Committee of China Pharmaceutical University. Before the formal investigation, the researcher identified the nonworking hours of the hospital and entered the hospital with the oral permission of the hospital director/deputy director. The researcher orally introduced the background, content and purpose of the investigation to the doctor and started the questionnaire for doctors who were willing to participate in the investigation and sign informed consent. During the investigation, the researcher opened the questionnaire with the research software in a mobile electronic device, explained the requirements for answering questions in detail, read the questionnaire items and the answers to the multiple-choice questions aloud, and recorded the oral responses of the respondents with the software. All the research was conducted in an undisturbed environment, and the researcher did not show their opinions or any inclinations regarding the research content before or during the research.

Data analysis

Presenteeism was the dependent variable, and job burnout was the independent variable. The control variables included demographic and working factors, and
descriptive statistics were performed on all data collected from the physicians surveyed, as detailed in Table 1. This study employed a binary logit model to explore the relationship between presenteeism and job burnout. Logistic regression analysis was performed using STATA13.0-SE software, with P < 0.05 as the level of significance.

The dependent variable of presenteeism was measured by asking the physician "the number of times in the past year (12 months) that he or she had to take time off for physical reasons but still had to work". The answers were "never", "once", "2–5 times" or "more than 5 times". In this study, physicians who chose "never" and "once" were counted as "no presenteeism behavior", and those who chose more than two times were counted as "presenteeism behavior" [24, 25, 63].

The independent variable, job burnout, was measured by the MBI-GS Chinese version, with 5 questions on emotional exhaustion, 4 questions on cynicism and 6 questions on reduced personal accomplishment. A total score of emotional exhaustion greater than 15 indicates the existence of emotional exhaustion, while a total score of emotional exhaustion less than 10 indicates the opposite. A total score of cynicism higher than 8 indicates the existence of obvious emotional alienation, while a total score of cynicism lower than 4 indicates the opposite. A score of more 30 in reduced personal accomplishment indicates a high sense of achievement, while a score of less than 25 indicates the opposite [64]. The total score of job burnout = 0.4 × emotional exhaustion average + 0.3 × cynicism average + 0.3 × reduced personal accomplishment average. Total scores that fall into the ranges of 0–1.49, 1.50–3.49 and 3.50–6 indicate the conditions of no burnout, moderate burnout and severe burnout, respectively [65].
Results

A total of 1,376 doctors from 305 third-class hospitals and 349 second-class hospitals participated in the survey, of whom 46.9% were women, 82.6% were married, most were aged 25–44 (70.8%), 65.0% had a master’s degree and 26.9% were internal medicine physicians. Additional descriptive statistics are provided in Table 1.

Table 1
Descriptive information about the participants (n = 1376)

| Variable              | Type         | Count | Proportion |
|-----------------------|--------------|-------|------------|
| Gender                | Female       | 646   | 46.9%      |
|                       | Male         | 730   | 53.1%      |
| Age                   | < 25 years   | 59    | 4.3%       |
|                       | 25–34 years  | 486   | 35.3%      |
|                       | 35–44 years  | 489   | 35.5%      |
|                       | 45–54 years  | 285   | 20.7%      |
|                       | 55–59 years  | 31    | 2.3%       |
|                       | 60 years or above | 26 | 1.9%     |
| Marital status        | Never married | 232 | 16.9%     |
|                       | Married      | 1137  | 82.6%      |
|                       | Divorced or widowed | 7 | 0.5%   |
| Number of children    | 0            | 326   | 23.7%      |
|                       | 1            | 784   | 57.0%      |
|                       | 2            | 246   | 17.9%      |
|                       | 3 or more    | 20    | 1.5%       |
| Department            | Internal medicine | 370 | 26.9%     |
|                       | Surgical     | 199   | 14.5%      |
|                       | Andrology and obstetrics | 83 | 6.0%     |
|                       | Pediatrics   | 87    | 6.3%       |
|                       | Chinese medicine | 64   | 4.7%     |
|                       | ENT          | 108   | 7.8%       |
|                       | Oncology     | 34    | 2.5%       |
|                       | Orthopedics  | 70    | 5.1%       |
|                       | Emergency    | 45    | 3.3%       |
|                       | Dermatology  | 38    | 2.8%       |
|                       | Other departments | 278 | 20.2%  |
| Working years         | 5 years      | 273   | 19.8%      |
|                       | 5–9 years    | 337   | 24.5%      |
|                       | 10–19 years  | 425   | 30.9%      |
|                       | 20–29 years  | 235   | 17.1%      |
|                       | ≥ 30 years   | 96    | 7.0%       |
| Professional title    | Junior staff | 476   | 34.6%      |
|                       | Middle manager | 557 | 40.5%    |
|                       | Sub-top manager | 265 | 19.3%   |
|                       | Top management | 78  | 5.7%    |
| Position              | Chief physician | 147 | 10.7%    |
|                       | Deputy chief physician | 172 | 12.5%  |
|                       | General physician | 1057 | 76.8% |
| Highest education level | Junior college | 123 | 8.9%    |
|                       | Bachelor     | 894   | 65.0%      |
|                       | Master       | 310   | 22.5%      |
|                       | PhD          | 49    | 3.6%       |
| Level of hospital     | Third-class A | 507 | 36.85%    |
|                       | Third-class B | 117 | 8.50%    |
|                       | Second-class A | 624 | 45.35%  |
|                       | Second-class B | 69  | 5.01%    |
Table 2 shows the frequency of physician presenteeism and job burnout in this study. Of the 1376 physicians, 30.7% (n = 422) had engaged in presenteeism behavior in the past 12 months. Regarding job burnout, 86.8% (n = 1195) of physicians indicated moderate burnout, and 6.0% (n = 82) of physicians indicated severe burnout. Specifically, 15.6% (n = 215) of physicians reported significant emotional exhaustion at work, 18.7% (n = 257) reported cynicism at work, and 58.5% (n = 805) reported reduced personal accomplishment.

| Prevalence of presenteeism (Number of times having worked despite feeling the need to use sick leave) | Number of participants | Proportion |
|---|---|---|
| Never or once | 954 | 69.3% |
| Twice or more | 422 | 30.7% |

| Prevalence of job burnout based on the “Maslach Burnout Inventory-General Survey (MBI-GS)” | Emotional exhaustion | Proportion |
|---|---|---|
| Low(≤10) | 868 | 63.1% |
| Medium(11–14) | 293 | 21.3% |
| High(≥15) | 215 | 15.6% |
| Cynicism | Proportion |
| Low(≤4) | 797 | 57.9% |
| Medium(5–7) | 322 | 23.4% |
| High(≥8) | 257 | 18.7% |
| Reduced personal accomplishment | Proportion |
| Low(≥30) | 424 | 30.8% |
| Medium(26–29) | 147 | 10.7% |
| High(≤25) | 805 | 58.5% |

| Total (= 0.4*EE + 0.3*Cy + 0.3*RPA) | Proportion |
|---|---|
| Low(≤1.49) | 99 | 7.2% |
| Medium(1.5–3.49) | 1195 | 86.8% |
| High(≥3.5) | 82 | 6.0% |

Regression analysis

With the three dimensions of job burnout as three independent variables, the logistic regression analysis showed that there were significant differences among the four variables related to presenteeism, including emotional exhaustion and cynicism, as shown in Table 3. Physicians with moderate and severe emotional exhaustion and severe cynicism were more likely to engage in presenteeism behavior than those with moderate and severe reduced personal achievement and moderate cynicism (all p < 0.05). In addition, two other work-related factors, the
physician's department and the physician's position, were more likely to influence their presenteeism behavior (all p < 0.05).

### Table 3
Logistic regression analysis of factors associated with presenteeism

| Factor                                      | Odds ratio | P     | 95% confidence interval |
|----------------------------------------------|------------|-------|-------------------------|
| Medium degree of emotional exhaustion        | 1.830      | 0.000 | 1.325-2.526             |
| High degree of emotional exhaustion          | 1.527      | 0.030 | 1.041-2.240             |
| Medium degree of cynicism                    | 1.245      | 0.197 | 0.893-1.735             |
| High degree of cynicism                      | 2.421      | 0.000 | 1.664-3.522             |
| Medium degree of reduced personal accomplishment | 0.843   | 0.464 | 0.533-1.333             |
| High degree of reduced personal accomplishment | 0.811  | 0.164 | 0.603-1.090             |
| Gender                                       | 1.196      | 0.192 | 0.914-1.565             |
| Age                                          |            |       |                         |
| 25-34 years                                  | 1.084      | 0.841 | 0.493-2.380             |
| 35-44 years                                  | 0.894      | 0.807 | 0.362-2.206             |
| 45-54 years                                  | 0.938      | 0.899 | 0.346-2.543             |
| 55-59 years                                  | 1.176      | 0.813 | 0.307-4.498             |
| 60 years or above                            | 0.699      | 0.631 | 0.162-3.018             |
| Marital status                               |            |       |                         |
| Married                                      | 1.371      | 0.304 | 0.751-2.503             |
| Divorced or widowed                          | 0.704      | 0.769 | 0.068-7.293             |
| Number of children                           |            |       |                         |
| 1                                           | 0.835      | 0.509 | 0.490-1.424             |
| 2                                           | 1.295      | 0.390 | 0.718-2.336             |
| 3 or more                                    | 0.666      | 0.456 | 0.229-1.940             |
| Department                                   |            |       |                         |
| Surgical                                     | 1.181      | 0.425 | 0.785-1.778             |
| Andrology and obstetrics                    | 0.784      | 0.393 | 0.448-1.371             |
| Pediatrics                                   | 1.006      | 0.983 | 0.583-1.735             |
| Chinese medicine                             | 1.124      | 0.708 | 0.610-2.071             |
| ENT                                          | 0.956      | 0.859 | 0.582-1.572             |
| Oncology                                     | 1.084      | 0.855 | 0.456-2.575             |
| Orthopedics                                  | 0.542      | 0.062 | 0.285-1.031             |
| Emergency                                    | 2.198      | 0.022 | 1.118-4.323             |
| Dermatology                                  | 0.683      | 0.393 | 0.285-1.638             |
| Other departments                            | 0.842      | 0.367 | 0.581-1.223             |
| Working years                                |            |       |                         |
| 5-9 years                                    | 0.764      | 0.301 | 0.458-1.273             |
| 10-19 years                                  | 0.791      | 0.477 | 0.415-1.508             |
| 20-29 years                                  | 0.911      | 0.815 | 0.417-1.989             |
| ≥ 30 years                                   | 1.046      | 0.931 | 0.381-2.870             |
| Professional title                           |            |       |                         |
| Middle management                            | 1.458      | 0.059 | 0.986-2.157             |
| Sub-top management                           | 1.436      | 0.181 | 0.845-2.442             |
| Top management                               | 1.753      | 0.139 | 0.833-3.689             |
| Position                                     |            |       |                         |
| Deputy chief physician                       | 2.071      | 0.008 | 1.205-3.559             |
| General physician                            | 1.355      | 0.249 | 0.809-2.270             |
| Highest education level                      | Bachelor   | 0.942 | 0.808                   |
| Master                                       | 0.678      | 0.174 | 0.387-1.188             |
| PhD                                          | 0.419      | 0.066 | 0.166-1.059             |
| Level of hospital (n = 654)                  |            |       |                         |
| Third-class B                                | 0.860      | 0.532 | 0.537-1.379             |
| Second-class A                               | 1.077      | 0.624 | 0.801-1.447             |
| Second-class B                               | 1.040      | 0.897 | 0.571-1.893             |

**Discussion**

The main results of this study indicate that presenteeism is positively correlated...
with job burnout in two dimensions: emotional exhaustion and cynicism. Increased emotional exhaustion and cynicism are correlated with more frequent presenteeism, which indicates that job burnout affects presenteeism with regard to these two aspects. Specifically, in this study, the probability of presenteeism among second- and third-class physicians in China was 30.7%, which is lower than that in the United States [2], the United Kingdom [4] and South Korea [5]. Despite the inconsistency of the populations and research methods in different countries, the level of presenteeism of Chinese physicians in this study can be regarded as relatively low.

Furthermore, 92.8% of the doctors reported that they had experienced job burnout, among which 15.6%, 18.7% and 58.5% displayed emotional exhaustion, cynicism and low personal accomplishment, respectively. The results of this study suggest that doctors in second- and third-class hospitals in China have a high degree of job burnout; most experience cynicism and no personal accomplishment in their work, while some have a certain degree of emotional exhaustion. International reports have shown that between one-third and one-half of all occupational physicians experience job burnout in at least one dimension [55, 66-68]. This finding indicates that the situation of physician job burnout is increasingly common both at home and abroad, and people are increasingly aware of the consequences related to job burnout. In fact, identifying outcomes related to job burnout is critical to understanding and addressing physicians’ occupational health issues because these outcomes affect the development of health institutions and the national health care system. For example, Williams et al. found that higher levels of perceived stress affect physicians' intention to quit their careers [69]. Other studies have found that job burnout is associated with early retirement [70]. The economic loss of patient
services associated with redundancies and early retirement is estimated to be at least $213 million [71]. Few studies have focused on the effectiveness of interventions for physician burnout. The first step to fill this gap is to identify the outcomes of burnout that change with intervention.

The results of job burnout include a decrease in job satisfaction [72, 73], mental health [74] and the quality of service [68]. The results of this study confirm that with increasing job burnout, the probability of physician presenteeism behavior increases. Among the existing outcomes, physicians’ presenteeism may have one of the most direct effects on the health care system. According to the labor force statistics of physicians in 2012, there were only 1.6 physicians per 1,000 people in China, with the number of physicians per capita well below the OECD’s average of 3.2. The growing demand for medical services has led to a sharp increase in physician workloads. Given the overwhelming pressure on medical needs, tensions between physicians and patients have often been exacerbated. Medical disputes, deteriorating relations between doctors and patients, and even violent attacks on doctors have become serious problems in China [75-77], which also explains why Chinese doctors are more prone to job burnout, with a probability of 92.8%.

Globally, there are many reasons why physicians choose to work despite illness. As Aronsson and Gustafsson explained in their conceptual model [19], this issue involves a very complex decision-making process for physicians. Contributing factors include personal needs and work-related needs. This study mainly focused on work-related factors. Specifically, emergency physicians and doctors with managerial responsibilities are more likely to show presenteeism. In addition to reducing physician burnout, it is necessary to pay more attention to the health status of physicians with more stress and more complex work tasks to reduce the
occurrence of presenteeism. In the long run, it is necessary to adjust the human resource management model in hospitals, observe and intervene in doctors' health, encourage healthy lifestyles and working patterns, and help doctors relieve tension, boredom and burnout. At the same time, short-term leave for doctors can be granted, which may help doctors to make physical and mental adjustments themselves. Soler et al. found a significant relationship between job burnout and sick leave [78], while Siu et al. did not [73], probably because the type of decline in productivity demonstrated by physicians experiencing job burnout may be related to their environment. In other words, sick leave may be allowed in one system but discouraged in another. A system that shows less tolerance toward sick leave will inevitably inspire physician presenteeism.

Overall, hospitals, medical associations, physicians' associations and other institutions should pay more attention to physicians' mental health, such as presenting mental health lectures on a regular basis, helping doctors realize the adverse effects of job burnout and presenteeism, understanding the purpose of occupational mental health surveys, providing simple and convenient self-examination methods, and conducting regular and random surveys. In addition, hospitals should schedule shift work and provide reasonable rest time for doctors in unfit conditions and replace sick and tired doctors with energetic and well-rested doctors to promote the replacement of doctors, further increase mutual support among colleagues, and reduce the occurrence of job burnout. The entire medical system involves medical staff composed of doctors, nurses and clinical pharmacists who work at the clinical front line and directly affect the diagnosis, treatment and rehabilitation of patients. If cooperation among doctors, nurses and pharmacists can be reasonably optimized, the pressure on doctors in the process of diagnosis and
treatment can be effectively relieved, thus alleviating physicians’ job burnout and reducing the frequency of their presenteeism.

**Limitations**

This study has three limitations. First, the 12-month recollection period for participants regarding presenteeism may be excessively long, which may lead to inaccurate self-reports by physicians. Second, we used a self-rating scale to measure physicians’ presenteeism and job burnout, which should be evaluated objectively in future studies. Finally, the subjects in this study were doctors in second- and third-class hospitals, excluding primary doctors. Future studies on doctors working in different environments could enhance the understanding of physician presenteeism.

**Conclusion**

Presenteeism is relatively common among physicians in second- and third-class hospitals in China, and the relationship between presenteeism and job burnout has been demonstrated. To reduce the impact of presenteeism on physicians and the quality of medical services, medical institutions must take appropriate measures to strengthen their management, help physicians adjust their physical and mental health, and show more concern for physicians’ health to reduce presenteeism. In the long run, reduced presenteeism contributes to the improvement of medical institutions’ services and the overall development of the national medical service system.

**Declarations**

*Ethics approval and consent to participate*
Ethical approval was obtained from the Ethics Committee of the China Pharmaceutical University (Project number: CPU2019015). Those who agreed to participate provided written consent in a form provided through the survey link and answered eligibility screening questions confirming that they were outpatient or inpatient doctors who had obtained medical qualification certificates, held positions in clinical departments or had prescription rights.

**Consent for publication**

Not applicable

**Availability of data and materials**

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

**Competing interests**

The authors declare that they have no competing interests

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**Authors' contributions**

PP and XYX planned and designed the study. PP, GHL, GJL, YFZ were responsible for data management and analysis. PP and GHL drafted the manuscript. All authors contributed to interpretation of study results, critical revision of the paper and approval of final version, and agree to be accountable for all aspects of this article.

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