A content analysis of media reports on workplace violence against healthcare professionals in China

Ru Jian Jonathan Teoh1, Lu Fang2, and Xin-Qing Zhang3\*

Author 1: Dr. Ru Jian Jonathan Teoh

Affiliation: International Health Program, National Yang Ming University, Taipei, Taiwan 112.

Mailing address: International Health Program, Room 402, Medical Building II, National Yang Ming University, No.155, Sec.2, Linong Street, Taipei, 11221 Taiwan.

Email address: [jonathan.teoh26@gmail.com](mailto:jonathan.teoh26@gmail.com)

Telephone number: +60228267000

Author 2: Ms. Fang Lu

Affiliation: Institute of Basic Medical Sciences, Peking Union Medical College, Beijing, 100005, China

Mailing address: School of Social Sciences and Humanities, Peking Union Medical College, #9 Dongdan, 3nd Alley, Beijing 100730 P.R.China

Email address: flh.921218195@qq.com

Telephone number: 8610-65105546

Author 3: Prof. Xin-Qing Zhang

Affiliation: School of Humanities and Social Sciences, Peking Union Medical College, Beijing, 100005, China

Mailing address: School of Social Sciences and Humanities, Peking Union Medical College, #9 Dongdan, 3nd Alley, Beijing 100730 P.R.China

Email address: zxqclx@qq.com

Telephone number: 8610-65105546

**\*** Correspondence: Prof Xin-Qing Zhang

**Abstract:**

Medical workplace violence (WPV) has become an alarming phenomenon in China. Few studies exist concerning how this is represented in the news. This study investigated the prevalence, characteristics, and causes of WPV from major news portal and medical websites in China, to provide a direction on the prevention and control of this issue. Quantitative content analysis was used to examine Chinese news portal and medical websites from 2013 to 2017. 235 valid reported cases were found. Number of events peaked in 2015, during summer. Most cases occurred in the mid-eastern region of mainland China, in tertiary hospitals, and in the Emergency Department. Perpetrators were mainly individual males, from the young adult or middle age group. The major cause of was dissatisfaction towards treatment and referral. In conclusion, the development of prevention and control strategies is crucial and should be in accordance to the evidence from the research conducted.

**Keywords:** China; Occupational safety and health; Work environment; Health personnel; Mass media

1. Introduction

According to the National Institute for Occupational Safety and Health, workplace violence (WPV) is defined as acts of violence, which include both verbal and physical threats and assaults towards workers.(1) WPV in the medical sector is not uncommon. For instance, in the UK it is found that healthcare workers have a four-time higher risk of experiencing WPV, comparing with workers in other industries.(2) WPV is an alarming issue, which is prevalent worldwide, including the USA(3), UK(4), Europe(5), Asia(6-8) and Australia(9). Consequences of past experience of violence includes lowering occupational performance and work enthusiasm, creating fear for safety at workplace, lowering job satisfaction, and affecting physical and mental health adversely.(10-14)

Medical WPV is a significant and serious issue in China, which a recent meta-analysis of 44 observational studies found that the overall prevalence of medical WPV in China was 62.4%.(15) Medical professionals had sustained serious injuries from the attacks perpetrated by the patients and their relatives. An editorial published in the Lancet also pointed out that one third of medical doctors in China had experienced assaults and conflicts in their workplace.(16)

However, epidemiological evidence of WPV in the medical sector in China does not give a concrete conclusion in terms of time, place, and person. A recent cross-sectional survey carried out in 18 Eastern Chinese hospitals found that 7% of 2,018 healthcare workers had experience of physical attacks and 34% had physical threats.(8) On the other hand, in North-eastern China, 83.3% of 1,899 survey respondents reported WPV experience in healthcare, and 68.9% reported non-physical violence.(17) A study done in Southern China reported that 64.5% of 1,043 healthcare workers in hospitals had experienced WPV.(18) There were large differences in the prevalence of WPV in different regions in China, and our research aims to investigate the reasons behind these differences.

In China, the media plays an important role in delivering information on medical WPV to the public as incidents of violence towards medical professionals often appear on headlines on the Chinese media.(19, 20) In 2012, there was a murder of a young junior doctor in Northern China, which subsequently was covered by *People’s Daily*, the most influential newspaper group in the country. An online poll was established and although the results might not be generalizable to the entire population, it was found that a huge majority (65%) of the 6,161 respondents were happy with such violence, and only 6.8% of them were sad.(21) Another study conducted on the use of micro-blogs in China demonstrated that out of 661 micro-blogs that were posted in a month after a WPV incident in Guangdong province, less than a quarter of them condemned the perpetrators.(22)

Identifying the patterns and characteristics of WPV is important for the relevant authorities to develop suitable strategies to curb this issue. To the best of our knowledge, former studies have explored the prevalence of WPV in China, but knowledge on its detailed distribution such as geographical regions, season, types of hospital departments involved, and characteristics of perpetrators are limited. The role and use of Chinese media in portraying WPV in the medical sector is also largely unstudied. This research aims to address this gap by gathering and analyzing the presentation of medical WPV from 2013 to 2017 on the Chinese news media, thereby providing a direction for prevention and intervention of medical WPV incidents in the future.

2. Materials and Methods

We used the Baidu’s search tool, the largest Chinese search engine in the world, to collect data and develop a dataset. The search terms included were: medical violent events, medical accident, and injury of nurses and doctors. The search was done in Chinese language. The reports were included if they met the criteria: (1) WPV in mainland China, (2) posted on Chinese-language Chinese news portals and medical websites, and (3) between January 1, 2013 and December 30, 2017. The reports were excluded if they were: (1) duplicate reports, (2) without outcome of victim, and (3) no proper mention or explanation of background of WPV event, including time and location of event.

From our search, we identified 265 relevant reports using the Baidu’s search tool. After removing duplicates and excluding reports according to the exclusion criteria, there were 235 reports that satisfied the inclusion criteria. The included reports were from the following Chinese-language Chinese news portals and medical websites: China Daily, Huanqiu, Dingxiangyuan, Sina, People’s Daily Online, Health News, Southern Weekly, and news portals of the respective provinces such as Henan Daily and Guangdong Daily.

From the 235 reports, two independent investigators performed content analysis to extract and code the following information: 1) what is the date (year and month) of the event? 2) what is the province where the event occurred? 3) What is the type of hospital and in which department did the event occur? 4) What is the cause of the event? 5) What is the outcome of the healthcare worker? Is there any death of the healthcare worker? 6) What are the age, sex, and occupation of the perpetrators? 7) Is it a single or group of perpetrators? Any disagreement with the coding is resolved with discussion.

3. Results

3.1. Temporal distribution of medical violent events

The total number of valid medical violent events reported on major Chinese news portal and websites from 2013 to 2017 is 235. The number increased from 2013 to 2015, peaked in 2015, and then decreased from 2015 to 2017 (Table 1).

**Table 1.** Annual distribution of medical violent events from 2013 to 2017 (n=235)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | 2013 | 2014 | 2015 | 2016 | 2017 |
| Cases | 26 | 54 | 75 | 46 | 34 |
| Percentage（%） | 11.1 | 23.0 | 31.8 | 19.6 | 14.5 |

Figure 1 describes the monthly distribution of the medical violent events. It was found that such cases mainly happened in the summer season, from May to August, accounting for 47.20% of all cases throughout the year. There were two other small peaks in February and November, 8.9% and 8.1% respectively.

**Figure 1. Monthly distribution of medical WPV events**

3.2. Geographical distribution of medical violent events

In the past four years, violent events happened in 28 provinces or municipalities. Among these events, the central and eastern coastal regions were the most common areas, while the western region reported relatively fewer cases. There were more than 10 cases reported in 5 provinces, and in the descending order they were Guangdong (16.5%), Hunan (10.5%), Jiangsu (8%), Zhejiang (7%), and Shanghai (5%), contributing to a total percentage of 47%. All of them were located in the mid-eastern part of China.

3.3. Hospital and department distribution of medical WPV events

According to Table 2, violent events occurred mainly in hospitals of higher level, especially in the level 3 hospitals (57% of cases), followed by level 2 hospital (31.1%).

**Table 2.** Hospital distribution of medical violent events

|  |  |  |
| --- | --- | --- |
| Type of hospital | Frequency | Percentage (%) |
| **Public hospitals** | | |
| Tertiary hospitals | 134 | 57.0 |
| Secondary hospitals | 73 | 31.1 |
| Community health care center | 14 | 6.0 |
| **Private hospitals** | 14 | 6.0 |
| Total | 235 | 100.0 |

**Figure 2.** Distribution of medical WPV events by departments in hospitals

The Emergency Department had the highest number of medical WPV cases among all the departments in the hospitals (34%) (Figure 2). This was followed by the Obstetrics and Gynecology Department (9%) and the Pediatrics Department (6%).

**Table 3.** Characteristics of perpetrators

|  |  |  |
| --- | --- | --- |
|  | Frequency | Percentage (%) |
| **Characteristics of perpetrators** |  |  |
| Individual man | 126 | 53.6 |
| Individual woman | 25 | 10.6 |
| In a group | 56 | 23.8 |
| Unknown | 28 | 11.9 |
| Total | 235 | 100.0 |
|  |  |  |
| **Age group of perpetrators** |  |  |
| Teenager | 1 | 0.4 |
| Young adult and middle age | 137 | 58.3 |
| Elderly | 8 | 3.4 |
| Unknown | 89 | 37.9 |
| Total | 235 | 100.0 |

Among the violent events reported, the majority of perpetrators were individual males (53.6%), followed by group violence (23.8%) and individual females (10.6%). There were 37.9% of cases reported without specification of sex or number of perpetrators. 137 of the cases (58.3%) reported were committed by the young adult and middle-aged group (Table 3).

As for the victims, in 93.2% (n=219) of the cases the victims were injured, and in 6.8% (n=16) of the cases the victims were dead due to the medical violent events. It was found that the main reason of the violence was due to dissatisfaction towards treatment and referral (40.9%). Tense doctor-patient relationship such as dissatisfaction against medical doctors’ attitude or against the dissuasion by medical doctors accounts for 16.6% of all cases. Behaviors of perpetrators, including under alcohol influence, having mental illness, and being violent without a particular reason also accounts for 16.6% of all cases. The next causes of violence were the death of patients (14.9%), and issue regarding treatment, medical insurance, and ambulance fees (5.5%). (Table 4)

**Table 4.** Causes of WPV

|  |  |  |
| --- | --- | --- |
|  | Frequency | Percentage (%) |
| Dissatisfaction towards treatment and referral | 96 | 40.9 |
| Tense doctor-patient relationship including dissatisfaction against medical doctors’ attitude or dissatisfaction towards dissuasion by medical doctors | 39 | 16.6 |
| Behaviors of perpetrators including under alcohol influence, mental illness, violent behavior without a particular reason | 39 | 16.6 |
| Death of patients | 35 | 14.9 |
| Treatment, medical insurance, ambulance fees issue | 13 | 5.5 |
| Unknown | 13 | 5.5 |
| Total | 235 | 100.0 |

4. **Discussion**

In this study we used the media as our source to analyze the distribution of medical WPV events according to time, region, and hospital departments, in addition to the characteristics of perpetrators and causes of the events.

*4.1. Temporal distribution*

The WPV cases peaked in 2015 and decreased after that. The time trend of medical WPV from 2013 to 2017 might be explained by the medical professionals’ and government’s efforts in curbing this public health issue. In 2014, violence prevention guidelines for healthcare workers in China were published by Dingxiangyuan, a large medical bulletin board system, from the perspective of medical professionals.(23) In effect from October 1, 2015, under the Amendment of Criminal Law those who are in medical mobs (groups of individuals who disturb medical personnel or institutions with violence or illegal behaviors), whose behaviors disrupt the healthcare sector, will be punished.(24) These interventions might have contributed to the drop in WPV cases after 2015.

*4.2 Geographical distribution*

In mainland China, most of the hospitals, especially the higher levelled-ones, are located in the eastern region. This result is consistent with the findings in Table 2, showing that more than half of the medical WPV events occurred in tertiary hospitals. In China, the people often perceive higher levelled hospitals provide higher quality of care and result in better treatment outcomes.(25)Hence, most patients including those from the rural areas would flock to the major cities for treatment, despite knowing that there is a possibility of draining their savings due to the higher out-of-pocket expenses.(15) Thus, there is a higher chance of patients’ dissatisfaction towards treatment outcome, which eventually result in WPV events.

*4.3 Hospital departments*

It was found that there was a high prevalence of WPV in the emergency department, obstetrics and gynecology department, and pediatrics department. A similarity among the above departments is that they deal with patients’ conditions that are more acute and vulnerable, in addition to a higher patient expectation. In acute settings people have less time to react, and hence their emotions and actions are more unpredictable and uncontrollable. Prevalence of WPV in the above departments is consistent with findings from multiple studies done in China. A study carried out at 18 hospitals in Zhejiang province found that the emergency department is the commonest location of WPV incidents.(8)Another study conducted in 12 children’s hospitals also found that there is a higher rate of physical violence in the emergency department compared to the others.(6) However there was a also study that found that medical professionals working in the psychiatric department had the most WPV experience, followed by the emergency department.(26)

*4.4 Causes of WPV*

As found in our study, the main reason of WPV events (40.9%) reported on the news media was due to patients’ dissatisfaction to the treatment and its outcome. This is also consistent with a previous cross-sectional survey carried out on nurses in Heilongjiang province, which found that 66.8% (n=393) of the WPV were due to unsatisfactory treatment outcomes.(27)Another study from the US also found that dissatisfaction with care is a major factor of WPV.(3)) A significant consequence from this issue is that healthcare workers will be more fearful to deal with difficult cases.(8)

This study found that poor and tense doctor-patient relationship was a major cause of WPV incidents in healthcare facilities. To create a good doctor-patient relationship, good communication is required, which helps to promote exchange of information between both parties, and subsequently leads to shared decision-making about a patient’s treatment.(28) A previous study which investigated healthcare workers’ employment status and doctor-patient relationship using questionnaires survey in nine Chinese provinces, found that three quarter of the healthcare workers agreed that the current doctor-patient relationship was not satisfactory.(29) Another study conducted in 12 hospitals in Fujian and Henan provinces, which included 2,464 medical professionals, found that miscommunication is the main cause of physical violence, verbal abuse, and sexual harassment in medical practice.(26)

A high workload leads to reduced quality of medical care provided, which is an important factor that causes patients’ dissatisfaction and poor doctor-patient relationship. Higher workload is prominent in higher levelled hospitals and the departments that handle more acute cases. This is consistent with the findings of a study that investigated WPV with occupational stress, that the level of stress in the workplace is positively correlated with WPV, and negatively correlated with general self-efficacy.(30) Long working hour (≥10 hours/day) also leads to a higher risk of WPV.(26)

Altered mental status, poor mental health, and alcohol abuse among patients are risk factors of WPV. In June 2015, there was a young man breaking into the nursing station and severely injured a 30-year-old nurse. The perpetrator stated that he did not know the victim in person, and he just “hated people who wear white coats, boss, doctors, and police”. After investigation he was diagnosed with antisocial personality disorder. In this study, after analyzing the characteristics and background of perpetrators we found that some of them were unemployed and poverty-stricken. Having financial burden is a major risk factor as these individuals tend to pay for their medical care out-of-pocket. Among these individuals, not having a treatment outcome as expected by themselves tend to lead to a higher risk of violence to the healthcare providers.

*4.5 Role of media*

The Chinese media plays an important role in tackling the medical WPV issue in China. There were media reports that gave negative remarks regarding medical doctors, claiming that doctors are “wolves in white” whose focus is on income rather than patients’ health.(31) Reports on the media might sometimes mislead the audience to think that WPV not unusual, and it might set a trend that WPV is the method to express dissatisfaction towards the healthcare sector. Instead of giving negative remarks, more constructive feedbacks or strategy proposals will be useful in tackling the WPV issue. As found in the study on microblogging after a WPV incident in Guangdong, only 3 out of 105 micro-blogs had concrete proposal on stopping medical WPV.(22) The media has to play its social responsibility in promoting the protection of healthcare providers, delivering information on the law and legal aftermath of WPV cases, and educating the public on medical WPV.

*4.6 Limitations and strengths*

As the study includes only WPV incidents reported on the news media, the prevalence of WPV could be underestimated. Presentation of reports on news media may also exaggerate the cases with the intention to obtain more viewers for more profit. We tried to minimize this bias by adhering to the inclusion and exclusion criteria. Reporting of the WPV incidents may depend on the popularity of the hospital, perpetrator, victim, or event.

Nevertheless, from this study we are able to investigate prevalence of WPV in healthcare facilities in all regions of China. Besides, as we obtain data from the media, we can have an insight into the information about medical WPV incidents obtained by the general population in entire China through the media. We can also understand the effect of media on the perspective of the general population on WPV. Authors should discuss the results and how they can be interpreted in perspective of previous studies and of the working hypotheses. The findings and their implications should be discussed in the broadest context possible. Future research directions may also be highlighted.

5. Conclusions

The prevalence of WPV cases have decreased, but is still a major issue in the healthcare system in China. Most of the cases occurred in higher levelled hospitals, perpetrated by young adult men. The main causes of WPV were patients’ dissatisfaction towards treatment outcome and poor doctor-patient relationship. It is imperative to increase awareness of the public and authorities, and to develop new policy in safety and violence prevention in the healthcare sector.

**Author Contributions:**

LF and ZX designed the study. LF collected and analyzed the data. TRJJ contributed to data analysis, drafted and revised the manuscript. ZX revised the manuscript and coordinated the study. All authors read and approved the final manuscript

**Funding:**

This research received no external funding.

**Acknowledgments:**

None

**Competing Interest:**

The authors declare no competing interest.

References

1. Centers for Disease Control and Prevention. Violence Occupational Hazards in Hospitals [updated June 6, 2014; cited 2018 7 Jan]. Available from: <https://www.cdc.gov/niosh/docs/2002-101/default.html>.

2. Ramsay S. Violence prevalent in UK hospitals. The Lancet. 1998;352(9128):632. doi: 10.1016/S0140-6736(05)79595-7.

3. Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith CD, Upadhyaya M. Physical assault, physical threat, and verbal abuse perpetrated against hospital workers by patients or visitors in six U.S. hospitals. American journal of industrial medicine. 2015;58(11):1194-204. Epub 2015/06/16. doi: 10.1002/ajim.22489. PubMed PMID: 26076187.

4. Lepping P, Lanka SV, Turner J, Stanaway SE, Krishna M. Percentage prevalence of patient and visitor violence against staff in high-risk UK medical wards. Clinical medicine (London, England). 2013;13(6):543-6. Epub 2013/12/04. doi: 10.7861/clinmedicine.13-6-543. PubMed PMID: 24298096.

5. Cowman S, Bjorkdahl A, Clarke E, Gethin G, Maguire J. A descriptive survey study of violence management and priorities among psychiatric staff in mental health services, across seventeen european countries. BMC health services research. 2017;17(1):59. Epub 2017/01/21. doi: 10.1186/s12913-017-1988-7. PubMed PMID: 28103871; PMCID: PMC5248457.

6. Li Z, Yan CM, Shi L, Mu HT, Li X, Li AQ, Zhao CS, Sun T, Gao L, Fan LH, Mu Y. Workplace violence against medical staff of Chinese children's hospitals: A cross-sectional study. PloS one. 2017;12(6):e0179373. Epub 2017/06/14. doi: 10.1371/journal.pone.0179373. PubMed PMID: 28609441; PMCID: PMC5469493.

7. Raveesh BN, Lepping P, Lanka SV, Turner J, Krishna M. Patient and visitor violence towards staff on medical and psychiatric wards in India. Asian journal of psychiatry. 2015;13:52-5. Epub 2014/12/04. doi: 10.1016/j.ajp.2014.10.003. PubMed PMID: 25466779.

8. Wang N, Yang S, Zhou X, Hesketh T. Workplace violence and its aftermath among health workers in Zhejiang province: a cross-sectional study. The Lancet. 2017;390:S81. doi: 10.1016/S0140-6736(17)33219-1.

9. Roche M, Diers D, Duffield C, Catling-Paull C. Violence toward nurses, the work environment, and patient outcomes. Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing. 2010;42(1):13-22. Epub 2010/05/22. doi: 10.1111/j.1547-5069.2009.01321.x. PubMed PMID: 20487182.

10. Kaya S, Bilgin Demir I, Karsavuran S, Urek D, Ilgun G. Violence Against Doctors and Nurses in Hospitals in Turkey. Journal of forensic nursing. 2016;12(1):26-34. Epub 2016/02/26. doi: 10.1097/jfn.0000000000000100. PubMed PMID: 26910266.

11. Heponiemi T, Kouvonen A, Virtanen M, Vanska J, Elovainio M. The prospective effects of workplace violence on physicians' job satisfaction and turnover intentions: the buffering effect of job control. BMC health services research. 2014;14:19. Epub 2014/01/21. doi: 10.1186/1472-6963-14-19. PubMed PMID: 24438449; PMCID: PMC3898009.

12. Magnavita N, Heponiemi T. Violence towards health care workers in a Public Health Care Facility in Italy: a repeated cross-sectional study. BMC health services research. 2012;12:108. Epub 2012/05/04. doi: 10.1186/1472-6963-12-108. PubMed PMID: 22551645; PMCID: PMC3464150.

13. Saeki K, Okamoto N, Tomioka K, Obayashi K, Nishioka H, Ohara K, Kurumatani N. Work-related aggression and violence committed by patients and its psychological influence on doctors. Journal of occupational health. 2011;53(5):356-64. Epub 2011/08/11. PubMed PMID: 21828959.

14. Hills D, Joyce CM. Workplace aggression in clinical medical practice: associations with job satisfaction, life satisfaction and self-rated health. The Medical journal of Australia. 2014;201(9):535-40. Epub 2014/11/02. PubMed PMID: 25358579.

15. Lu L, Dong M, Wang SB, Zhang L, Ng CH, Ungvari GS, Li J, Xiang YT. Prevalence of Workplace Violence Against Health-Care Professionals in China: A Comprehensive Meta-Analysis of Observational Surveys. Trauma, violence & abuse. 2018:1524838018774429. Epub 2018/05/29. doi: 10.1177/1524838018774429. PubMed PMID: 29806556.

16. Violence against doctors: Why China? Why now? What next? Lancet (London, England). 2014;383(9922):1013. Epub 2014/03/25. doi: 10.1016/s0140-6736(14)60501-8. PubMed PMID: 24656183.

17. Sun P, Zhang X, Sun Y, Ma H, Jiao M, Xing K, Kang Z, Ning N, Fu Y, Wu Q, Yin M. Workplace Violence against Health Care Workers in North Chinese Hospitals: A Cross-Sectional Survey. International journal of environmental research and public health. 2017;14(1). Epub 2017/01/21. doi: 10.3390/ijerph14010096. PubMed PMID: 28106851; PMCID: PMC5295346.

18. Chen ZH, Wang SY, Jing CX. Investigation on workplace violence phenomenon of two hospitals in Guangzhou. Chinese Journal of Preventive Medicine. 2003;37:358-60.

19. Wu D, Hesketh T, Zhou X-D. Media contribution to violence against health workers in China: a content analysis study of 124 online media reports. The Lancet. 2015;386:S81. doi: 10.1016/S0140-6736(15)00662-5.

20. Hesketh T, Wu D, Mao L, Ma N. Violence against doctors in China. BMJ : British Medical Journal. 2012;345. doi: 10.1136/bmj.e5730.

21. Minter A. Violent crimes in China’s hospitals make many citizens happy: Bloomberg; 2012 March 30 [cited 2018 17 Jun 2018]. Available from: <https://www.bloomberg.com/view/articles/2012-03-29/violent-crimes-in-china-s-hospitals-spread-happiness>.

22. Tian J, Du L. Microblogging violent attacks on medical staff in China: a case study of the Longmen County People's Hospital incident. BMC health services research. 2017;17(1):363. Epub 2017/05/21. doi: 10.1186/s12913-017-2301-5. PubMed PMID: 28526035; PMCID: PMC5438487.

23. Zhao S, Liu H, Ma H, Jiao M, Li Y, Hao Y, Sun Y, Gao L, Hong S, Kang Z, Wu Q, Qiao H. Coping with Workplace Violence in Healthcare Settings: Social Support and Strategies. International journal of environmental research and public health. 2015;12(11):14429-44. Epub 2015/11/19. doi: 10.3390/ijerph121114429. PubMed PMID: 26580633; PMCID: PMC4661658.

24. Guan J. Origin and Prevention of Workplace Violence in Health Care in China: Legal and Ethical Considerations. Chinese medical journal. 2017;130(14):1731-6. Epub 2017/07/08. doi: 10.4103/0366-6999.209888. PubMed PMID: 28685725; PMCID: PMC5520562.

25. Liu Q, Wang B, Kong Y, Cheng KK. China's primary health-care reform. Lancet (London, England). 2011;377(9783):2064-6. Epub 2011/04/02. doi: 10.1016/s0140-6736(11)60167-0. PubMed PMID: 21453962.

26. Wu S, Zhu W, Li H, Lin S, Chai W, Wang X. Workplace violence and influencing factors among medical professionals in China. American journal of industrial medicine. 2012;55(11):1000-8. Epub 2012/08/14. doi: 10.1002/ajim.22097. PubMed PMID: 22886819.

27. Jiao M, Ning N, Li Y, Gao L, Cui Y, Sun H, Kang Z, Liang L, Wu Q, Hao Y. Workplace violence against nurses in Chinese hospitals: a cross-sectional survey. BMJ open. 2015;5(3):e006719. Epub 2015/03/31. doi: 10.1136/bmjopen-2014-006719. PubMed PMID: 25814496; PMCID: PMC4386227.

28. Ong LM, de Haes JC, Hoos AM, Lammes FB. Doctor-patient communication: a review of the literature. Social science & medicine (1982). 1995;40(7):903-18. Epub 1995/04/01. PubMed PMID: 7792630.

29. Zhang X, Liu Y, Tu L, Hu Y. Overall Evaluation of the Tense Doctor-patient Relationship in Current China. Xian Dai Yi Yuan Guan Li (Modern Hospital Management). 2012;12(4):6-9.

30. Yao Y, Wang W, Wang F, Yao W. General self-efficacy and the effect of hospital workplace violence on doctors' stress and job satisfaction in China. International journal of occupational medicine and environmental health. 2014;27(3):389-99. Epub 2014/05/14. doi: 10.2478/s13382-014-0255-y. PubMed PMID: 24820029.

31. China Economic Weekly. The survey on the medical dispute in Shijiazhuang: Have “angels in white” become “wolfs in white”? [in Chinese]: China Economic Weekly; 2006 Feb 20 [cited 2018 Jun 26]. Available from: <https://finance.qq.com/a/20060220/000517_5.htm>.