

An Epidemiological Study of Work-related Violence Experienced by Physicians who Graduated from a Medical School in Japan

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Abstract: An Epidemiological Study of Work-related Violence Experienced by Physicians who Graduated from a Medical School in Japan: Mayuri ARIMATSU, *et al.* Department of Work Systems and Health, Institute of Industrial Ecological Sciences, University of Occupational and Environmental Health, Japan—Healthcare workers are at high risk of being victim of verbal and physical violence perpetrated by patients. There are only a few studies on work related violence among physicians. The aim of this study was to determine how prevalent work-related violence against physicians is and whether gender, age, specializations and workplaces are associated with verbal and physical violence against physicians in Japan. A questionnaire was mailed to all the 1,705 physicians who had graduated from one medical school in Japan and had practiced for a minimum of 3 yr by the time of this study. The verbal and physical violence experienced by physicians at the hands of their patients and/or clients in the last 6 months preceding this study were collected. We defined ‘verbal violence’ as ‘any threatening statement or complaint’ while ‘physical violence’ referred to ‘the attempted or actual exercise by persons of any physical force so as to cause injury to a physician’. Multiple logistic regression analysis was used to determine the independent contribution of each factor with violence. A total of 540 men and 158 women responded. The adjusted response rate was 41.8%. Among the participants, 168 (24.1%) physicians had experienced verbal violence and 15 (2.1%) physicians had

experienced physical violence in the prior 6 months. Verbal violence was positively associated with physicians who were under 30 yr old (odds ratio [OR] = 2.1; 95% confidence interval [CI], 1.0–4.1 for 27–29 yr old) and, psychiatry (OR, 2.4; 95% CI, 1.1–5.4). Physical violence was significantly associated with women (OR, 3.8; 95% CI, 1.1–13.5), specializations such as emergency and anesthesiology (OR, 18.9; 95% CI, 2.8–126.1), and psychiatry (OR, 7.6; 95% CI, 1.6–35.4). There was a considerable number of physicians exposed to violence. Younger physicians and psychiatrists are likely to be exposed to verbal violence. Female physicians, psychiatrists, and emergency physicians are likely to be exposed to physical violence. Education on avoiding from violence should be provided for physicians early in their career.

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Healthcare workers are at a high risk of being victims of verbal and physical violence perpetrated by patients and their families^{1–4}). There are guidelines to prevent violence at hospitals in some countries^{5, 6}), and the Japanese Ministry of Health, Labour and Welfare distributed a guideline on safety management including violence and property loss at hospitals in 2006⁷). However, it can be said that the description of countermeasures to prevent violence on health care workers including physicians in the guideline are not practical because it has just become effective.

Violence is preventable by training, engineering control, and organizational control^{5–8}). Many hospitals have a policy against any violence, especially in the emergency room. However, if violence happens, it has a significant psychological impact on healthcare workers.

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Victims and witnesses can be traumatized; and it can result in work restrictions, quitting jobs, leaves of absence, voluntary transfers, depression, and insomnia^{1,9}. Post-incident management is also essential to minimize long-term effects among health care workers⁵.

The guidelines in other countries on violence in health care settings show the risk factors for violence at hospitals. They include the prevalence of handguns among patients, the increased number of mentally ill patients, the availability of drugs and money, long waits in emergency rooms, isolated work, and lack of training in managing escalating hostile behavior^{5,6}. Not all the risk factors are applicable to hospitals in Japan, however, because there are relatively few handguns and fewer drugs as compared to the United States. Patients' demands are increasing while physicians' paternalism used to be dominant. Physicians are spending more time getting informed consent from patients or families. Patients do not recognize the risks of medical care, resulting in an increasing number of lawsuits¹⁰.

Nurses and patient care assistants who have close patient contact are often reported to be exposed to violence^{1,2,11,12}. There are a few studies on violence perpetrated on physicians that focus on emergency doctors and psychiatrists in other countries however, similar studies have not been conducted in Japan^{9,13-15}. The aim of this study was to determine how prevalent work-related violence inflicted on physicians is, and whether gender, age, specializations and workplaces are associated with verbal and physical violence against physicians in Japan.

Methods

Participants and study protocols

The participants of this study were all physicians who graduated from one of the medical school in Japan from 1986 to 2003. They had all practiced at least 3 yr as physicians by the time of this study. In November 2006, a questionnaire was mailed to all 1,705 eligible participants. An anonymous self-administered questionnaire was used.

Measurement

The demographic information collected was gender, age, specialization, and workplace. Incidents of verbal and physical violence experienced by physicians, at least once, at the hands of their patients and/or clients in the 6 months preceding this study were collected. We defined 'verbal violence' as 'any threatening statement or complaint' while 'physical violence' referred to 'the attempted or actual exercise by persons of any physical force so as to cause injury to a physician'.

Statistical analyses

Multiple logistic regression analysis was used to determine whether gender, age, specialization and

workplace were associated with violence in the last 6 months. We created dummy variables for specialization and workplace. We classified specializations into 1) internal medicine, 2) surgery, including general surgery, neurological surgery, obstetrics, gynecology, orthopedics, and urology, 3) psychiatry, 4) anesthesiology and emergency medicine, 5) minor specializations, including dermatology, ophthalmology, otolaryngology, and radiology, 6) pediatrics, 7) occupational health, and others. The workplaces were classified as follows: 1) hospital, full-time, 2) hospitals, part-time, 3) clinic, 4) university, 5) company, and 6) others. All analyses were performed using SPSS 15.0 for Windows¹⁶.

Ethics

The Human Research Committee at the University of Occupational and Environmental Health, Japan, approved the procedure of this study before the survey was conducted.

Results

Six-hundred ninety-eight physicians (540 men and 158 women) answered the questionnaire and 34 responded by declining to answer after we mailed 1,705. The adjusted response rate was 41.8%. The demographic characteristics of the respondents are shown in Table 1. The majority of respondents were men aged 30-49 yr old. About a quarter of the respondents were in occupational health and internal medicine.

Table 2 shows the number of respondents who had experienced of verbal or physical violence according to the variables listed. Among the participants, 168 (24.1%) physicians had experienced verbal violence, and 15 (2.1%) physicians had experienced physical violence, at least once in the last 6 months. Psychiatrists, emergency physicians and anesthesiologists were more likely to be victims of verbal and physical violence. However, a higher percentage of women had experienced physical violence than men.

Table 3 shows the association between gender, age, specializations and workplaces and verbal and physical violence. Verbal violence was positively associated with physicians who were under 30 yr old (odds ratio [OR] = 2.1; 95% confidence interval [CI], 1.0-4.1 for 27-29 yr old) and psychiatry (OR, 2.4; 95% CI, 1.1-5.4). Physical violence was significantly associated with women (OR, 3.8; 95% CI, 1.1-13.5), specializations such as anesthesiology and emergency (OR, 18.9; 95% CI, 2.8-126.1), and psychiatry (OR, 7.6; 95% CI, 1.6-35.4).

Discussion

This study indicates that younger physicians and psychiatrists have a higher risk of being victims of verbal violence, and female physicians, psychiatrists, emergency physicians and anesthesiologists have a higher risk to be

Table 1. Characteristics of respondents

| | n | % |
|--------------------------|-----|------|
| Total respondents | 698 | |
| Gender | | |
| Men | 540 | 77.4 |
| Women | 158 | 22.6 |
| Age | | |
| 27–29 | 56 | 8.0 |
| 30–39 | 322 | 46.2 |
| 40–49 | 292 | 41.8 |
| 50–64 | 28 | 4.0 |
| Specialization | | |
| Internal medicine | 167 | 23.9 |
| Surgery | 134 | 19.2 |
| Psychiatry | 31 | 4.4 |
| Emergency/Anesthesiology | 15 | 2.2 |
| Minors | 89 | 12.8 |
| Pediatrics | 26 | 3.7 |
| Occupational health | 205 | 29.4 |
| Other specialities | 31 | 4.4 |
| Workplace | | |
| Hospital, full-time | 274 | 39.3 |
| Hospital, part-time | 21 | 3.0 |
| Clinic | 45 | 6.4 |
| University | 108 | 15.5 |
| Company | 208 | 29.8 |
| Other workplaces | 42 | 6.0 |

exposed to physical violence. Even though other factors were not significantly associated with risk of being a victim of violence, more than 20% of physicians reported at least one case of verbal violence in the last 6 months and about 2% of physicians had experienced physical violence at least once. The medical school participating in this study is characterized as being strong in occupational health. Thus about 20% of the respondents were occupational health physicians.

In this study, 31.8% of the physicians had experienced at least 1 episode of verbal violence, and 3.6% of the physicians, among full-time clinicians in a hospital, had done so in the 6 months prior to the study. Kowalenko *et al.*¹⁷⁾ reported that of 177 emergency physicians randomly selected from 250 emergency physicians in the Michigan College Hospitals, 74.9% had experienced at least 1 episode of verbal violence, and 28.1% had experienced at least 1 episode of physical violence in the previous year. Gerberich *et al.*¹⁾ reported that of 3,738 nurses, 38% had experienced verbal violence and 13% had experienced physical violence during the previous 12 months. Comparing these results, even though the incidents of violence are dependent upon specializations in the present study, and though the time frame is different from that in other studies, we found a similar number of violence cases reported.

Table 2. Physicians who had experienced verbal or physical violence at least once in the last 6 months

| | Verbal violence | | Physical violence | |
|--------------------------|-----------------|------|-------------------|------|
| | n | % | n | % |
| Gender | | | | |
| Men | 131 | 24.3 | 7 | 1.3 |
| Women | 37 | 23.4 | 8 | 5.1 |
| Age | | | | |
| 27–29 | 17 | 30.4 | 1 | 1.8 |
| 30–39 | 84 | 26.1 | 11 | 3.4 |
| 40–49 | 60 | 20.5 | 2 | 0.7 |
| 50–64 | 7 | 25.0 | 1 | 3.6 |
| Specialization | | | | |
| Internal Medicine | 41 | 24.6 | 3 | 1.8 |
| Surgery | 37 | 27.6 | 2 | 1.5 |
| Psychiatry | 14 | 45.2 | 5 | 16.1 |
| Emergency/Anesthesiology | 6 | 40.0 | 3 | 20.0 |
| Minors | 24 | 27.0 | 0 | 0.0 |
| Pediatrics | 7 | 26.9 | 1 | 3.8 |
| Occupational Health | 34 | 16.6 | 1 | 0.5 |
| Other specialities | 5 | 16.1 | 0 | 0.0 |
| Workplace | | | | |
| Hospital, full-time | 87 | 31.8 | 10 | 3.6 |
| Hospital, part-time | 3 | 14.3 | 1 | 4.8 |
| Clinic | 11 | 24.4 | 1 | 2.2 |
| University | 18 | 16.7 | 1 | 0.9 |
| Company | 46 | 22.1 | 2 | 1.0 |
| Other workplaces | 3 | 7.1 | 0 | 0.0 |

Table 3. Multivariate analyses of background factors on verbal and physical violence inflicted on physicians

| | Verbal violence | | Physical violence | |
|--------------------------|-----------------|---------|-------------------|-----------|
| | OR | 95%CI | OR | 95% CI |
| Gender | | | | |
| Men | 1.0 | | 1.0 | |
| Women | 0.8 | 0.5–1.3 | 3.8 | 1.1–13.5 |
| Age | | | | |
| 27–29 | 2.1 | 1.0–4.1 | 1.5 | 0.1–22.0 |
| 30–39 | 1.4 | 0.9–2.1 | 3.8 | 0.7–22.0 |
| 40–49 | 1.0 | | 1.0 | |
| 50–64 | 1.3 | 0.4–3.8 | 7.3 | 0.5–104.3 |
| Specialization | | | | |
| Internal medicine | 1.0 | | 1.0 | |
| Surgery | 1.2 | 0.7–2.0 | 1.3 | 0.2–8.5 |
| Psychiatry | 2.4 | 1.1–5.4 | 7.6 | 1.6–35.4 |
| Anesthesiology/Emergency | 2.0 | 0.7–6.3 | 18.9 | 2.8–126.1 |
| Minors | 1.1 | 0.6–2.0 | n.a. | |
| Pediatrics | 1.1 | 0.4–2.8 | 2.6 | 0.2–27.6 |
| Occupational health | 0.6 | 0.3–1.2 | 1.9 | 0.1–25.3 |
| Other specialties | 0.6 | 0.2–2.4 | n.a. | |
| Workplace | | | | |
| Hospital, full-time | 1.0 | | 1.0 | |
| Hospital, part-time | 0.3 | 0.1–1.2 | 1.0 | 0.1–10.0 |
| Clinic | 0.9 | 0.4–1.9 | 2.6 | 0.2–36.6 |
| University | 0.6 | 0.3–1.0 | 0.8 | 0.1–7.1 |
| Company | 0.8 | 0.5–1.1 | n.a. | |
| Other workplaces | 0.7 | 0.2–1.9 | n.a. | |

*n.a.: not applicable.

In the present study, physicians ages of 27–29 were more likely to be exposed to verbal violence. We should not neglect the weak association between verbal violence and age 30–39 yr old. This might be because some physicians might not be able to handle certain difficult situations or because patients might be more likely to look down on younger physicians.

Female physicians were at a higher risk of exposure to physical violence. There were 7 female physicians who were victims of physical violence, 4 (26.6%) of whom were psychiatrists, and 3 (20.0%) were internists. Female psychiatrists are at extremely high risk of physical violence. Female healthcare workers reported violence more often than male healthcare workers did¹⁸. As the number of female physicians is increasing in Japan, during their undergraduate studies, an educational program including how to protect one's self from violence would be beneficial.

Psychiatrists, emergency physicians and anesthesiologists are often reported to be victims of physical violence. In Japan, anesthesiologists sometimes take charge of emergencies, therefore, they were combined with emergency physicians for the purpose of

analyses in the present study. Almost all the emergency physicians and psychiatrists had been victims of verbal violence or had witnessed such violence^{13, 14}.

To prevent violence, it is necessary for hospitals to use the guideline on safety managements, and in addition to this, to train healthcare workers including physicians, and institute countermeasure for violence¹⁹.

Violence is often under-reported. Gerberich *et al.*¹ reported that 44% of nurses do not report episodes of physical violence because physical violence is just 'part of the job'. Under-reported cases are not taken care of appropriately, which could result in a delay in taking the proper and necessary measures. Some hospitals might not have a system for reporting such episodes of violence. It is necessary to encourage to reportage of violence and to take an organizational approach^{5, 8}.

There are a few limitations to the present study. First, the response rate was not ideal even considering that the response rate among physicians is often not high. Second, this study was done at a university at which a relatively high number of graduates work as occupational health physicians. Further studies are warranted for physicians of other specializations. Further studies are needed

involving more physicians in order to obtain generalizability. Despite these limitations, this study provides useful information that can serve as a basis for the development of an educational prevention program among physicians.

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