

Field Study

Workplace Violence—A Survey of Diagnostic Radiographers Working in Public Hospitals in Hong Kong

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Abstract: Workplace Violence—A Survey of Diagnostic Radiographers Working in Public Hospitals in Hong Kong: Kris NG, *et al.* Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong—

Objectives: This study aimed to estimate the prevalence of workplace violence involving radiographers in Hong Kong, to evaluate underlying factors contributing to incidents and their impact, and to suggest improvements in management and training.

Methods: Frontline radiographers, from seven regional hospitals, who performed duties in general radiography, were provided with a workplace violence questionnaire. General radiography refers to plain film X-ray services in general rooms (including out patient clinics), A&E and portable services on wards. Materials relating to workplace violence, for example guidelines and training information, were provided by hospital managers.

Results: Out of 281 questionnaires, 150 were returned (response rate of 53%). Sixty-one percent of radiographers had experienced violence in the past 3 yr and 34% of victims had encountered incidents more than 5 times. From respondents who had experienced abuse, verbal abuse (97%) was most frequently reported, and the predominant source of violence was patients ($p < 0.0001$). Respondents identified long waiting times, communication issues and understaffing as key risk factors. The Accident & Emergency Department was the highest risk area ($p < 0.0001$). Almost two thirds (65.91%) of radiographers who experienced verbal abuse ignored events. Although no severe injury was reported, indirect impact, including increased work stress, job dissatisfaction, depression and increased sick leave, were highlighted as negative consequences of violence. 77% of respondents felt that support from departments was inadequate and only 11% had attended courses on prevention of

occupational violence. **Conclusions:** Workplace violence is a critical problem in Hong Kong. Further research is recommended to investigate the problem. (*J Occup Health 2009; 51: 355–363*)

Key words: Abuse, Hong Kong, Radiographers, Workplace violence

Society is becoming increasingly violent with a global upsurge in the level of aggression in the workplace¹. Workplace violence affects many occupational groups, especially in the health industry, where violence is a feature of everyday clinical practice in primary care^{2,3}. One report has revealed that the health industry is the most violent industry⁴, and violence at work is very common in the health professions, with more than 50% of workers having experienced violent incidents^{5,6}. In the United Kingdom (UK), health care workers are one of the groups most at risk of assault⁶, while according to the Health Services Advisory Committee, the most risky profession in the UK is nursing, with 34% of nurses having been attacked on duty⁷. Of further concern is that violence in hospitals is becoming more frequent and more aggressive⁷.

Consequently, both the British Government and the National Institute for Occupational Safety and Health (NIOSH) in the USA have placed greater emphasis on managing aggression towards healthcare staff in recent years^{8,9}, evidencing that workplace violence has become an alarming phenomenon worldwide. Increasing concerns about the risks faced by health care staff have extended to other countries^{5,10}. In Hong Kong, the Hospital Authority (HA) has stated that during 1997–2004, twenty-five cases of workplace violence had come before the law courts and sixteen offenders were subsequently convicted of offences¹¹. Furthermore, one study has suggested that nurses in Hong Kong are at risk of workplace violence¹².

Definition of violence

NIOSH defines workplace violence as violent acts

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(including physical assaults and threats of assaults) directed toward persons at work or on duty^{9, 12, 13}). The World Health Organization (WHO) classifies violence into physical assault, homicide, verbal abuse, bullying/mobbing, sexual and racial harassment, and psychological stress¹⁴). Violence refers to any verbally or physically aggressive behaviour towards workers in their workplace, with a result that they are put at risk^{2, 5, 14, 15}). Threats may include expressions of intent to cause harm, including verbal threats, threatening body language, and written threats, or physical assaults ranging from slapping and beating to the most serious offences of rape, homicide and the use of weapons¹³). Staff may not realize that they are facing violence due to the ambiguous definition and different perceptions of individuals²). In order to raise their awareness, there is a need to develop universal understanding of violence among healthcare providers, which can pre-empt or avoid any serious incidents.

Research studies have demonstrated that workplace violence more frequently occurs in Accident and Emergency (A&E) departments where 50% of incidents take place^{7, 12}). This fact is reinforced by the preventative, remedial and security measures operating within A&E departments⁶). The main type of violence towards healthcare staff is most likely to be verbal abuse^{5, 12}). The underlying factors are long waiting times for patients, alcohol and/or drug abuse, mentally ill patients, *etc*¹⁵). The harmful effects on victims include anxiety, anger, sleep disturbance and increased stress⁸). As a whole, this reduces victims' morale and productivity, hence causing financial loss to the organization¹).

One survey, concerned with violence against radiographers, showed that 63% of respondents had experienced some form of violence over the last two years, with 70% of the violence being psychological¹⁶). Yet, there has not been any study of aggressive behaviour experienced by radiographers in Hong Kong. Hence, the objectives of this study were to determine the prevalence and nature of workplace violence involving radiographers in Hong Kong, to identify the sources of the violence, the high risk factors and the consequences for individuals and organizations. Furthermore, the study proposed to increase radiographers' and employers' awareness of the present situation and evaluate the existing guidelines and training, so as to suggest improvement strategies and practices for increasing the safety of radiographers and patients.

Materials and Methods

This study was conducted in seven regional hospitals under the management of the HA in Hong Kong. The HA is an independent, statutory body, accountable to the Hong Kong Government, which was established under the Hospital Authority Ordinance 1990 to manage all public hospitals. This study received ethics approval from

the Department Research Committee, at The Hong Kong Polytechnic University, and letters of support from all seven hospitals involved. A survey was performed to investigate the occurrence and seriousness of workplace violence experienced by radiographers. The hospitals selected provided wide-ranging imaging services for the public and extensive facilities, including A&E, out patient clinics/ambulatory care centres and portable X-ray services.

All grades of Radiographer I and Radiographer II, who had gained experience in performing duties in general radiography over the past three years, were invited to voluntarily complete the questionnaire. Questionnaires, and a stamped-addressed envelope, were either distributed by hand by a senior radiographer or by members of the research team. The research team was required to comply with each hospital's preferred distribution method, according to individual hospital policy. Completed questionnaires were either posted back to the research team, or placed in a designated collection box in the staff room. A general reminder was given to radiographers at each hospital after two weeks, so as to encourage non-respondents to participate. All responses were anonymous so as to safeguard confidentiality.

For the purposes of this study, general radiography duties refer to plain film X-ray services in general rooms in radiology departments, out patient clinics/ambulatory care centers, A&E departments and portable services on wards. Radiographers who worked in administrative positions, such as department managers and senior radiographers, or who only worked in specialties, were excluded because they had less patient contact when compared to those who performed general radiography duties.

The questionnaire was developed, based on the "Joint Programme on Workplace Violence in the Health Sector," by the ILO/ICN/WHO/PSI project¹⁷), and a comprehensive literature review. Modifications were made to scale down the number of questions. The questionnaire consisted of eighteen questions relating to workplace violence, including demographic data, types of abuse, responses to violence, factors relating to violence, impact of violence, guidelines and training, and support from departments. For example, in order to gain knowledge of the impact of violence, one question asked:

'What do you think is the impact of being a victim of violence? (You may tick more than one box).'

This was followed by a list of options, which respondents could tick, based on findings from the literature review, such as alcohol consumption, drug consumption, depression, increased work stress, reduced eagerness in the profession, job dissatisfaction, increased sick leave, lack of willingness to work, no feelings, or others (please specify).

For most questions, respondents were given options,

Table 1. Demographic data

	Respondents' characteristics (n=150)	Experienced violence (n=91)
Gender		
Male	77	44
Female	63	41
Missing data	10	6
Years of clinical experience		
<2	19	11
3–5	27	17
6–10	20	10
>10	84	53

but were afforded, by means of open-ended questions, the opportunity to elaborate further or to offer alternative responses.

For the purpose of this study, violence was defined as any incident in which staff were abused, threatened or assaulted in circumstances related to their work, with a result that the staff member was put at risk^{3, 5, 14, 16}. Four types of violence were categorized, i.e. verbal abuse, threatening behaviour, physical assault and sexual harassment^{2, 5, 10}. Verbal abuse included the use of words which were personally insulting, such as generally abusive spoken obscenities and foul language, or indicating a lack of respect for the dignity and worth of an individual^{6, 15, 18}. Threatening behaviour referred to any action that involved signs of violence indicating intention to harm, such as the intention to throw a chair, cause a fight or to verbally threaten an individual⁸. Physical assault described the use of physical force against an individual involving physical contact, such as pushing, punching or slapping, regardless of whether or not an injury was sustained^{8, 12}. Sexual harassment referred to any unwanted or unwelcome behavior of a sexual nature, including verbal or physical, that was offensive to an individual or for the perpetrator's own sexual gratification^{12, 19}.

Data analysis

Data were entered into an Excel spreadsheet for quantitative analysis, while qualitative analyses were used for the open-ended responses. Demographic data including gender and years of clinical experience were collected. If a radiographer had experienced workplace violence, further information including types of aggressive behaviour, perpetrators, frequency of violence, location and time during the day of violent incidents were sought. The Chi-square test for independence (χ^2) was used to compare categorical variables to see whether there was any association between the responses of two independent groups of

respondents. The Mann-Whitney U test was used to compare the degree of concern over workplace violence between radiographers with violent experiences and those without such experiences.

Open-ended responses were analyzed in a qualitative manner. For answers with similar meaning but using different wordings, these were summarized and put into the same category. Apart from the survey used, documentation on workplace violence, ranging from guidelines, training course information, reporting forms, Hospital Authority by-laws and prosecution guidance were obtained from each hospital, so as to evaluate the existing guidelines.

Results

A total of 281 questionnaires were distributed and 150 were returned, providing an overall response rate of 53.34%. Sixty-one percent of respondents had experienced workplace violence over the past 3 yr. The occurrence of violence was statistically significant among the seven hospitals ($\chi^2 = 18.187$, $p = 0.0058$).

Although a higher proportion of women (65.08%) than men (57.14%) reported experience of violence, the difference in gender and occurrence of violence were not statistically significant ($\chi^2 = 0.9150$, $p = 0.3388$). The association between years of clinical experience and occurrence of violence was also not significant ($\chi^2 = 1.282$, $p = 0.7334$).

Types of violence

Respondents who had experienced violence (n=91) indicated the types of violence involved. Verbal abuse was the most common (96.70%), followed by threatening behaviour (34.07%) and physical assault (20.88%). Sexual harassment (3.23%) and other types of violence were rare. Just over two fifths (40.66%) of respondents had encountered more than one type of violence over the previous 3 yr.

Table 2. Incidences and responses to various types of violence

Responses (n=91)	Verbal abuse (n=88)	Threatening behaviour (n=31)	Physical assault (n=19)	Sexual harassment (n=3)
Ignored it	58	8	3	1
Tried to defend verbally	41	12	4	0
Tried to defend physically	3	4	14	0
Told the person to stop	34	15	10	2
Sought help from colleagues	13	12	14	2
Called security/ police	13	15	10	0
Completed an incident form	5	3	4	0
Reported to senior staff	19	8	5	1

Table 3. Types of aggressor and frequency

Types of aggressor	Once	2–5 times	≥5 times	Never
Patients (n=88)	22	49	15	2
Relatives (n=86)	20	29	9	28
Radiographers (n=85)	8	1	2	74
Nurses (n=86)	8	8	4	66
Physicians (n=85)	5	6	3	71
Others (n=85)	0	1	0	84

Responses to violence

Respondents (n=91) were allowed to indicate multiple responses on this issue (Table 2). In terms of verbal assault (n=88), radiographers tended to ignore such incidents (65.91%), would defend themselves verbally (46.59%), or tell the abuser to stop (38.64%). Only 5.68% would complete an incident form, while 21.59% had actually reported incidents to a senior staff member. In terms of physical assault (n=19), victims were more likely to defend themselves physically or seek help from colleagues (73.68%). The types of violence would affect their responses and this was statistically significant ($\chi^2=85.937, p<0.0001$).

Types of aggressor

Subjects who had experienced violent incidents (n=91) were asked to identify their aggressors, but there were some missing data. In Table 3, 97.73% (86/88) of victimized respondents had suffered abuse from patients and 67.44% (58/86) from patients' relatives, followed by nurses (23.26%–20/86), physicians (16.47%–14/85) and radiographers (12.94%–11/85). Significantly, patients were more likely to be perpetrators of violence ($\chi^2=263.97, p<0.0001$).

Location, time period and frequency of violence

The most prevalent location was A&E (78/87

respondents), followed by the general room in the Radiology Department (48/85), ward (44/85), out-patient clinic/ambulatory care centers (27/84) and others (14/85). Significantly, more violent incidents happened in A&E than in other locations ($\chi^2=105.16, p<0.0001$) and the likelihood of experiencing repeated incidents was higher when working in A&E ($\chi^2=108.75, p<0.0001$). The frequency of violence at different time periods was more or less the same, with analysis of time period and occurrence of violence showing no significance ($\chi^2=0.9989, p=0.6069$).

Risk factors

Respondents (n=150) thought that long waiting times (81.33%), communication problems (68.00%) and understaffing (54.67%) were related to violence. Alcohol consumption (46.67%) and drug abuse (32.67%) were also associated with violence (Fig. 1). However, only 24% thought that close contact during positioning was an underlying cause of violence. Other factors like working alone, inexperience, and long working hours were not seen as major risk factors.

Attitudes of local radiographers

Over half the respondents (56%) considered violence to be preventable. Analysis of respondents with a violent experience and those without showed that the former

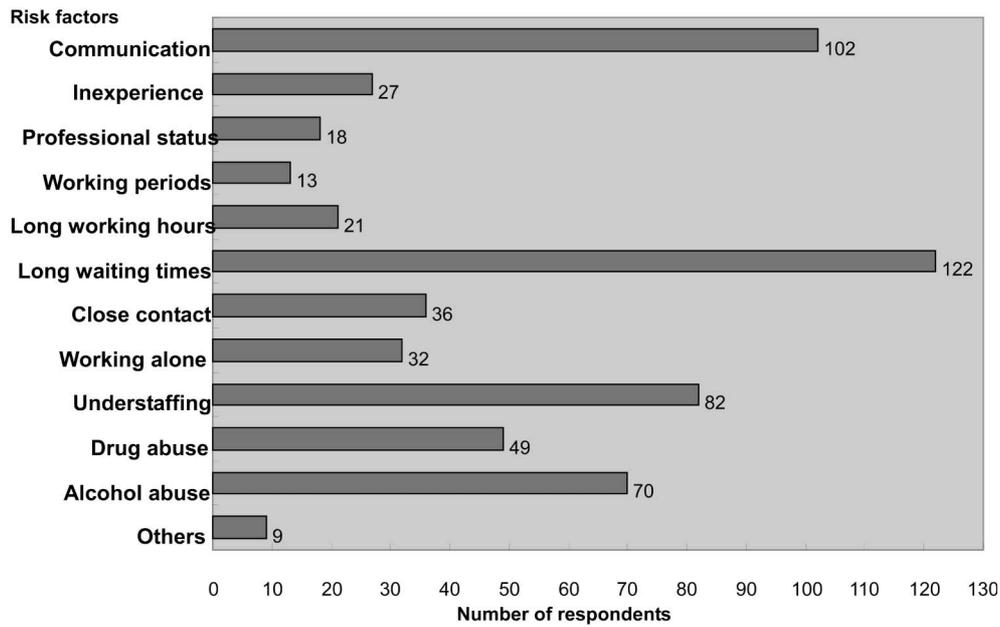


Fig. 1. Risk factors of workplace violence.

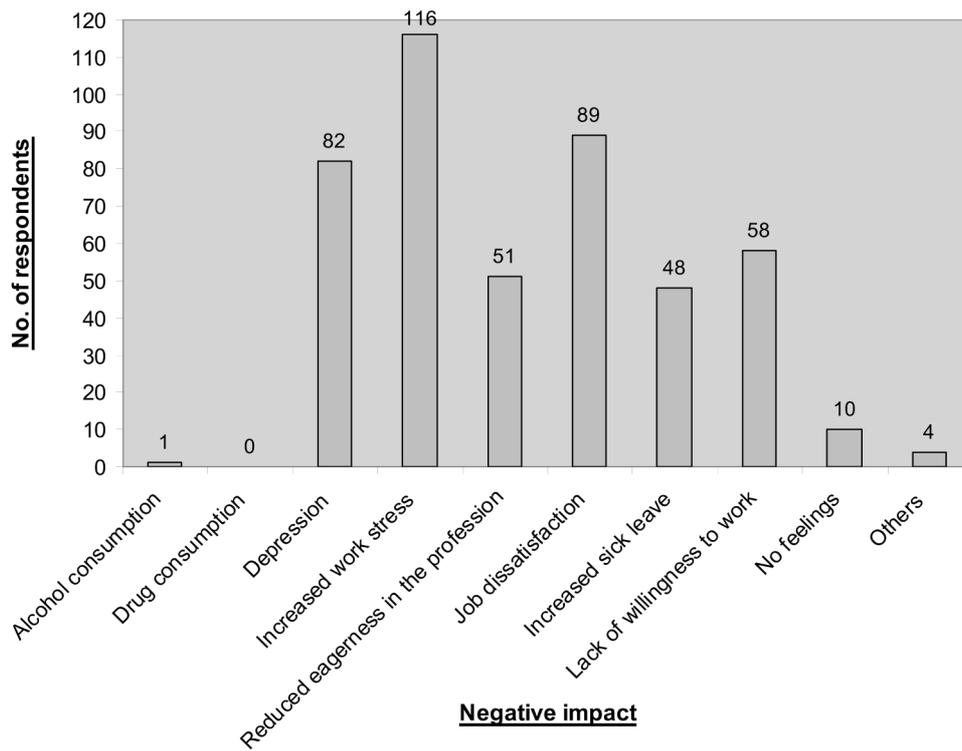


Fig. 2. Negative impact of violence.

tended to consider violence as unavoidable while those without exposure believed violence could be prevented ($\chi^2 = 19.044, p < 0.0001$). Only a minority agreed that support from their departments was adequate (23.33%) or knew of existing guidelines (40%) on violence in their own hospitals. Up to 90% of staff had received no training

at all. Out of the sixteen respondents who had attended training, 68.75% reported that training was useful.

Impact of violence

The major impact of being a victim of violence was that it increased work stress (77.33%), job dissatisfaction

(59.33%) and depression (54.67%), as well as lack of willingness to work (38.67%). It also reduced eagerness in the profession (34%) and increased sick leave (32%) (Fig. 2).

Discussion

The present study indicated that many radiographers had suffered workplace violence over the previous 3 yr. This falls into line with previous studies of nurses¹²⁾ and radiographers^{16, 20)}. Violence involving radiographers in Hong Kong is not uncommon, and local hospitals need to improve current policies with respect to workplace violence. This can in turn benefit the health care system in Hong Kong, as workplace violence has a negative impact through increased work stress, reduced eagerness in the profession, or job dissatisfaction for the victims^{1, 21)}, resulting in significant adverse consequences for the organization involved²²⁾.

Occurrence of violence

The present findings indicate that 61% of radiographers in Hong Kong had suffered workplace violence in a 3-yr period. These results are similar to a study conducted by The College of Radiographers, which demonstrated that over 60% of radiographers in Ireland had suffered from violence¹⁶⁾. Moreover, this result is consistent with other studies which have shown that health care staff, such as doctors, nurses, ambulance staff and radiographers face violence at work^{6-8, 12, 19)}. Furthermore, the majority of victims reported experiencing violence during work on more than one occasion. Radiographers are similarly at risk and attention should be paid in order to solve these current problems. Occurrence of violence also differed between hospitals and the geographic distribution of each hospital may be a possible reason for this. Despite being a small city, education level, socioeconomic status and population varies in different areas of Hong Kong. Hospitals serving a greater number of patients tend to have a higher incidence of violence. By contrast, hospitals serving citizens with higher education levels and social status have been found to be less likely to experience violent incidents²³⁾.

Victims of violence

The present results were consistent with a study by The College of Radiographers¹⁶⁾, indicating that the chance of facing aggression is equal for both genders. However, The College of Radiographers' study revealed that radiographers of less than 3 yr experience were more likely to face violence, but this was contradicted by The findings of the present study, which suggested that inexperience did not increase the risk of violence. Moreover, a study conducted in Turkey¹⁵⁾, showed that health care workers with less than 10 yr experience were significantly more likely to experience workplace

violence. Therefore, our findings conflict with these studies. As radiographers in Hong Kong are university degree qualified, following 3 yr of training, they may be better prepared to deal with incidents of violence as a consequence.

Sources of violence

Most abuses were carried out by patients, followed by relatives, and this complements the findings of other studies^{12, 15, 16)}. One study has suggested that longer contact time and interaction in an intimate manner¹⁸⁾ provides opportunities for patients to be frequent abusers. However, close contact, such as positioning, was not considered a major risk factor by the respondents. Nevertheless, although only 3.23% of respondents claimed they had suffered from sexual harassment, the seriousness of such behaviour is accentuated by the Sexual Discrimination Ordinance (Cap 480) in Hong Kong, indicating that criminal proceedings may ensue from this type of unwanted invasion of privacy. Under this legislation, sexual harassment refers to unwelcome sexual advance, unwelcome request for sexual favours, or unwelcome conduct of a sexual nature, in circumstances in which a reasonable person would consider this to be humiliating or offensive. Employers are advised to draft codes of practice so as to provide guidance on appropriate behaviour and how to manage adverse incidents.

Apart from dealing with patients, there is a need to cope with their relatives as well. When someone becomes ill, family members may become upset¹⁵⁾. Relatives may be the ones to complain about long waiting times, so sound communication skills may help in handling complaints, so as to remove the potential cause of violence⁷⁾.

Horizontal violence, an incident which occurs between people who have equal rank and status¹⁰⁾, should not be overlooked^{5, 10, 12, 24, 25)} as this contributes to some incidents. Unlike aggression from patients, horizontal violence is preventable if both parties pay heed to building a peaceful working environment. Opportunities for collaboration among radiographers, physicians and nurses must be provided so that regular evaluation may help to improve overall communication among healthcare workers²⁴⁾.

Responses to violence

Respondents reported a variety of coping mechanisms for different types of violence. Significantly, most respondents tended to ignore aggressive incidents, maybe implying that radiographers perceive violence as part of their job¹⁵⁾. Although most respondents would defend themselves verbally in terms of verbal abuse, how they do this is of great concern. The literature suggests that nurses should be alert to common signs of violence, such as displays of anger, rapid speech and angry tone of

voice²⁶) and their awareness of such signs should be raised. Poor communication may incite the aggressors to vent their aggression on staff members. Therefore, it is imperative that radiographers obtain specialized training not only to recognize signs of violence, but also in managing situations with verbal abuse, so as to defuse a potentially violent situation. In addition, such training could ensure that radiographers do not respond with a self-defeating attitude²⁷.

Major risk factors

The current study is consistent with previous literature which has highlighted long waiting times, communication and understaffing as potential factors for escalating violent events^{2, 9, 16, 28}. Reducing waiting times, improving communication skills, and increasing manpower are therefore pertinent considerations. Impersonal and bureaucratic procedures may further increase patient anxiety³ and mismanagement may fuel aggression. Therefore, sound communication skills are essential at such a crisis phase². As interaction with patients is at the core of clinical practice, good patient care must be maintained no matter how intense or how busy the department may be. In terms of professional behaviour, being in a hurry is not an excuse for degradation in patient care²⁰.

Excessive alcohol consumption has been proven to be strongly associated with physical aggression. The results of the present study concur with previous studies^{19, 28, 29} in that substance abuse, particularly excessive alcohol consumption, is a risk factor of violence. Staff need to observe the patients' status, as reddened faces and alcohol on the breath are common signs of alcohol abuse. Therefore, even though these patients may be more prone to violent outbursts, physical violence may be avoided if special attention is paid to them.

Time and location

Ayranci has suggested that night shifts pose more risks than other time periods and has recommended that more experienced staff should work during these periods¹⁵. However, this study found that differences in incident times were not significant. The findings imply that violence may occur at any time. In the clinical situation, hospitals allocate at least one experienced radiographer to each time period in A&E. However, the above arrangement is limited to X-ray services in A&E only and does not extend to portable duties during afternoon and night shifts. Therefore, it is common to see portable duties performed by only one radiographer. From respondents with violent experiences, 48.35% encountered violence in wards during portable X-ray duties. It is recommended to assign two radiographers to a team for portable duties, as respondents agreed that increased manpower may help to reduce violence.

However, understaffing problems may limit this option, as is the case in other countries⁹. Therefore, regular audits are needed, especially in high risk areas like A&E. The number of staff should be adjusted to cope with peak flow of patients, so as to minimize delays and crowding in the waiting areas⁷.

Negative consequences

The negative impact identified by respondents again supports earlier research^{1, 18}. Increased work stress was highlighted as one impact of workplace violence. Increased stress can affect the emotional status of radiographers and induce mood swings, leading to patients being treated inappropriately²⁰. Anxious patients may then have their anxieties aggravated and behave aggressively towards staff members. Once radiographers have encountered such episodes, it may negatively correlate to their job performance and they might feel depressed. In turn, depression may lead to job dissatisfaction¹⁸. If professionals are dissatisfied with their jobs, it may be difficult for them to continue their duties in a professional manner and to maintain a high standard of care. As a result, patients may be treated without respect leading to the whole workforce having to cope with aggression as a consequence of workplace violence¹². In addition, lack of willingness to work and reduced eagerness in the profession could increase sick leave and deteriorate service quality^{1, 2, 18, 20}, which could further aggravate the problems of understaffing adding to pressures on staff. The impact may not be serious but could develop to trigger factors of aggression. Support from departments, such as the promotion of a zero-tolerance policy towards violence⁵, is essential in order to raise staff willingness and enthusiasm in their profession, so that a high standard of care and service quality can be maintained.

Conclusions and Recommendations

Prevention and training

More than half of the respondents (56%) considered violence to be avoidable. In fact, many incidents of violence at work are predictable and foreseeable, and therefore preventable². However, only 10% of respondents had attended training. The present findings also reflected that 60% of radiographers did not know of any existing guidelines in their departments or hospitals. In order to improve staff knowledge of and performance in handling violent behaviour, training should not only be provided to volunteers, but should be compulsory for all staff members²⁵. Guidelines are only effective if staff are familiar with them².

Radiographers need to be well trained in coping with verbal abuse, and to report such incidents, instead of accepting them quietly²⁴. Existing training in Hong Kong covers workplace violence. However, limited quotas are

assigned for each hospital. It is recommended that small scale case sharing or training to deal with verbal abuse, organized by individual departments of each hospital, would be much more effective, so as to benefit the maximum number of staff with the smallest amount of input²⁸). Staff should not regard violence as inevitable due to bad luck, incompetence or the result of individual personalities²). Support from employers is vital to stop such trends from growing because a positive attitude towards workplace violence is the key to successful prevention.

Department support

In terms of violence, departments need to change their role from passive to active to show their support for colleagues. Instead of formal reporting from victimized staff, initiatives to evaluate the prevalence of violence should be regularly addressed. A standardized measuring tool, similar to that used by the London Borough of Islington, incorporating a ten-point scheme, may help to monitor the severity of various types of abuse²⁸). A questionnaire with a measurement tool could be circulated to radiographers on a regular basis. Individual responses should be kept confidential but the results could be shown in a circular notice, or published to HASLINK so that the employees could know the broad picture²).

As continuing professional development (CPD) of radiographers is being promoted to increase the competence of radiographers^{29–31}), courses related to workplace violence can be accredited as formal training to obtain credits for CPD. The ability of radiographers to handle violence may also be considered as a form of competence^{30,31}). The Nursing Council and Radiographers Board in Hong Kong have already implemented CPD on a voluntary basis^{32, 33}). Once mandatory CPD is implemented, training on violence can become an important issue and a useful topic as part of the CPD curriculum. On the other hand, training sessions could be prepared during the working week, or arranged on rotation for staff members, so that everyone could attend once every three years to ensure regular training is received within a CPD cycle which spans 3 yr³⁴).

Documentation of aggressive patients has already commenced in the National Health Service of the UK. Hong Kong hospitals may adopt a similar idea by providing remarks on the X-ray examination form to forewarn radiographers, which in turn can increase their awareness of repeat offenders with previous violent records³⁵).

In conclusion, it is unrealistic to expect that violence, especially verbal abuse, will completely disappear. However, this study shows there needs to be major changes in attitudes and approaches from hospital managers. Even though guidelines, training and reporting systems already exist, a high proportion of radiographers

showed a lack of understanding about these resources and most respondents were not eager to attend training. The key to successful prevention and control of violence is for the hospital managers to demonstrate their commitment to zero tolerance of workplace violence towards their employees^{5, 10}). Individual staff members should work in partnership with their departments so as to minimize the negative effects of violence. A peaceful workplace will benefit not just the healthcare workers, but most importantly the patients.

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