Violence in Healthcare Survey

Final Report

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Executive Summary

Background: Violence is defined as '*incidents where persons are abused, threatened or assaulted in circumstances related to their work, involving a direct or indirect challenge to their safety, well-being or health' and* a prevalent occupational hazard in the healthcare sector. The goal of this survey was to obtain a cross-sectional assessment of the current attitudes and perceptions of healthcare workers regarding workplace violence in British Columbia (BC).

Methods: The BC provincial healthcare workforce was examined using a survey, which was conducted using an online and paper-based format between January 31, 2009 and March 31, 2009. The survey included questions regarding worker perception of the following violence topics: tolerance, reporting, experience, contributors, and control measures. The Provincial Violence Prevention Steering Committee (PVPSC), a bipartite provincial committee with representation from employer and union stakeholders throughout BC, reviewed and approved the questions and survey methodology. Frequency analysis and cross-tabulations were performed to calculate responses and assess any relationships between demographic variables and the perception of violence.

Results: There were 2,545 respondents to the survey; 1,821 survey responses were web-based and 724 survey responses were paper-based. The largest number of the respondents came from the acute care setting (38.4%). The most common types of violence experienced by respondents were verbal rather than physical. Overall, respondents reported more tolerance and less reporting of verbal violence when compared to physical violence. The biggest perceived contributors to violence reported by respondents were system-wide issues related to patient illness, short-staffing, and delays in attending patient needs. In terms of perceived controls for violence, about one-third of respondents felt that their workplace had adequate controls and felt safe from violence at work.

Significant relationships were identified between perceptions of violence and respondent characteristics. Male respondents reported higher tolerance and more experience with violent incidents in comparison to their female counterparts. Registered nurses, licensed practical nurses, and care aides reported having experienced violence more often than other occupation groups, and did not perceive their workplace control measures as being effective in protecting workers against violence.

Conclusion:
Although improving systemic factors, such as wait times, is beyond the scope of the PVPSC, projects designed to enhance a positive reporting culture and eliminate barriers to reporting may be considered in future PVPSC projects. Violence continues to be extremely prevalent in healthcare, with over 80% of workers experiencing some kind of violence. Healthcare worker perceptions of the effectiveness of current safety practices are currently low; any interventions or controls implemented to prevent violence should include a substantial communications portion to involve and inform workers in the pre-implementation, implementation, and evaluation stages.

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Acknowledgements

We would like to thank the Provincial Violence Prevention Steering Committee for their time and effort in supporting and reviewing this project, as well as the Nursing Policy Management Committee for their financial support.

Special thanks go to all the healthcare workers throughout BC who participated in the survey, as well as all the healthcare stakeholders who promoted the survey within their organizations and beyond.

Introduction

Background

In order to address the problem of violence in the British Columbia (BC) healthcare sector, a Provincial Violence Prevention Steering Committee (PVPSC) was established through joint collaboration of BC's healthcare stakeholders.[1] The PVPSC is facilitated and coordinated by the Occupational Health and Safety Agency for Healthcare in BC (OHSAH). The purpose of the PVPSC is to develop and oversee implementation of a comprehensive, cohesive and effective provincial violence prevention strategy for healthcare worksites in BC. The PVPSC focuses on the development and promotion of best practices for violence prevention programs, policies, and training initiatives in the acute care, long-term care (LTC), home and community care (HCC), and public health sectors throughout BC.

Violence is a prevalent occupational hazard in the healthcare sector worldwide [3-5,10,17,26] which affects healthcare workers across multiple care settings [22,23]. In BC, the healthcare industry has the highest incidence of violence compared with other industries. Workers' compensation claims for violence-related injuries account for an average of 12% of all accepted claims in BC healthcare [33]. Healthcare workers represent approximately 10% of the provincial workforce, yet 40% of all violence-related claims were accepted from healthcare workers [32]. Exposure to workplace violence can have a long-term impact on the health of victims [15] and the healthcare system; nurses who report exposure to violence have higher levels of burnout and report more intentions to either leave nursing or change their employer [10].

Violence can take many forms. Section 4.27 of the BC Occupational Health and Safety Regulation defines violence as *the attempted or actual exercise by the person, other than a worker, of any physical force so as to cause injury to a worker.* Violence also includes any threatening statement or behaviour which gives a worker reasonable cause to believe he/she is at risk of injury. The PVPSC defines violence as *incidents where persons are abused, threatened or assaulted in circumstances related to their work, involving a direct or indirect challenge to their safety, well-being or health.* It is important to recognize that violence incidents span a continuum and include a range of behaviours from overt physical attacks to verbal threats, intimidation, and harassment.

Many risk factors are documented in the literature as being related to violence against healthcare workers. Violence perpetrated by patients or their family members and friends is common [4,5,10], especially by older patients [23], and by those whose cognitive abilities are impaired by illnesses, medications or drug use [26]. Working in certain occupational groups increases the risk of violence; the high risk of violence in nursing professions has been widely documented [5,10,22], as is the risk of those who work in emergency departments [22], long term care settings [5,10], and psychiatric departments. Personal characteristics such

[1] Ministry of Health, Nursing Policy Management Committee, Health Employers Association of BC (HEABC), Health Authorities including Provincial Health Services Authority (PHSA), Fraser Health (FH), Vancouver Coastal Health (VCH), Vancouver Island Health Authority (VIHA), Northern Health (NH), and Interior Health (IH), Affiliate Employers, and Healthcare Unions including: BC Nurses' Union (BCNU), UPN, Hospital Employees' Union (HEU), BC Government and Services Employees' Union (BCGEU), and Health Sciences Association of BC (HSA).

as age, gender, and ethnicity are also risk factors that are frequently associated with violence [4].

Other risks for violence arise at the organizational or system level, including patient-to-staff ratios, patient acuity and care needs, staffing mix and staff availability/absenteeism, workplace morale, and facility design. Workers reporting dissatisfaction with their job also tend to report more violence [23]. In addition, the physical design of a workplace impacts security and safety; this is particularly true in the case of violence associated with precipitating factors such as mental illness in patients [17]. Some studies have reported that the main reason leading to violence is excessive wait times for examination; delays in attending to patient needs may also be a contributing factor [4,7].

Despite the ample documentation of violence experienced by healthcare workers and its health effects, the true scope of the problem is under-represented, as over half of all violent incidents may go unreported [11]. Some workers believe that reporting will not benefit them in addressing or dealing with the issue, or they fear that their employers or colleagues consider violent acts to be the result of the employee's negligence, or poor job performance [4]. Most often, violence is perceived to be normal and is accepted as part of a healthcare job, or the act committed by the perpetrator is perceived to be unintentional, and therefore is not worth reporting [23,27]. Policies and procedures surrounding reporting may not be effective in encouraging workers to come forward after experiencing a violent incident, and the risk assessment process may not be proficient in identifying precursors of violent behaviours, and eliminating the risks of re-occurrence.

Objectives

The objectives of this project were threefold: 1) to assess BC healthcare workers' current experience and perceptions of workplace violence; 2) to identify priority areas for violence prevention efforts; and 3) to inform the development of targeted, relevant violence prevention resources.

Methods

Subject Recruitment and Survey Promotion

All workers who were employed in the healthcare industry in BC during the survey implementation period were eligible to participate. As an incentive, participants were eligible for a prize draw to win one of four iPods. Subjects were recruited using an open recruitment and snowball method. The survey recruitment was open because it was promoted to all eligible workers rather than a targeted sub-sample. The snowball aspect of promotion occurred when stakeholders and participating workers promoted the survey to their colleagues, thereby enhancing the sample size.

Promotion of the survey was done in several formats, including newsletters, websites, e-mails, e-mail signatures, posters, and pay stubs. PVPSC members helped coordinate the logistics of the promotion to reach out to their respective employees or union members. As suggested by Klein [18] and Lakeman [21], the survey was accessible via an active link on the survey homepage, websites frequented by the target population, and email communications. PVPSC members initiated the snowball recruitment by asking their constituents to forward

survey communication messages and promote the survey. Some examples of stakeholder-driven promotions included forwarding email messages, promoting the survey at a worksite through a Joint Occupational Health and Safety Committee, and distributing paper copies of the survey at annual conventions of union members.

Survey Design and Data Collection

Data was collected from January 31, 2009 to March 31, 2009 using a survey that was conducted using an on-line and paper-based format, both of which were accessible via a public domain website. On-line data was collected using a Statistical Package for the Social Sciences (SPSS) web survey program called "Mr. Interview" (SPSS Inc., Chicago, Illinois). Paper-based surveys were returned through mail postage and facsimile, and sent to a data entry company for compilation.

Online survey methods have the benefit of being cheaper, faster, and less prone to error than postal paper survey methods [1,12,25,29]. Web surveys also allow for dissemination and inclusion over a wider geographic area [1,6], which is particularly important for the province of BC which covers 95 million hectares.

The design of the web survey was consistent with recommendations from the research literature [6,19]. For example, survey pages did not have images and had standard fonts to speed transmission time. The survey also had clearly delineated buttons, and large font size and contrast between the text and background.

Survey questions were grouped into five broad categories:

1) Attitudes in terms of tolerance of violence or acceptance and reporting of violent incidents (verbally and in writing)
2) Personal experience and third-person experience (i.e., the experience of colleagues) with incidents of violence
3) Perception of contributors of violent behaviours
4) Perception of prevention efforts within the organization (safety at work, support of supervisor and colleagues, workplace procedures to protect workers, training, respondents' preparedness to respond/prevent violent behaviour)
5) Demographic information (age, gender, union affiliation, employer type, care setting, and occupations)

Categories 1, 3 and 4 were administered using a five-point visual analogue Likert scale to measure participant's agreement to a specific statement. A copy of the survey can be found in Appendix A.

Ethical Considerations

The PVPSC, a bipartite provincial committee with representation from employer and union stakeholders, reviewed and approved the survey questions and methodology. Before starting the questionnaire, respondents were informed of the purpose of the study, assured of their anonymity and confidentiality, and provided contact information for the survey researchers in case of questions or concerns. Three respondents contacted researchers using this method. Completion and submission of the survey was considered to be consent to participate.

All data was stored on-site in a secured server at OHSAH. All personal information entered for the prize draws was stored separately from the survey responses, and was used only for contacting prize winners. All collected personal information will be destroyed within six months of closing the survey.

Statistical Analysis

The survey examined the BC provincial healthcare workforce. According to the Health Employer Report produced by HEABC in 2006 [13], there were a total of 116,585 healthcare workers in this population.

The data for the web-based and paper-based surveys were merged into a single database at the end of the survey period for statistical analysis. Frequency analysis and cross-tabulations were performed to calculate responses of individual survey questions and determine responses by demographic variables, respectively. Chi-square tests were performed to assess if there was a significant relationship between any of the demographic variables and a particular survey question. Table 1 provides a summary of the cross-comparisons that were conducted.

Table 1: Chi-square tests for statistically significant relationships between demographic information and dependant variables

Demographic Variables	**Survey Questions**			
	1. Attitudes	**2. Experience**	**3. Contributors**	**4. Prevention Efforts**
Age	√	√		
Gender	√	√		
Union Affiliation	√			√
Health Authorities	√	√	√	√
Employer Type	√			√
Care Setting	√	√	√	√
Occupations		√		√

For chi-squared tests, Likert scale categories were collapsed into binary variables. 'Strongly disagree', 'disagree' and 'neutral' were combined into a 'disagree' category; whereas 'somewhat agree' and 'strongly agree' were combined into an 'agree' category. Since job title was an open-text field in the survey, a variety of responses were collected. These were categorized into 10 occupational categories.

Results

Study Sample

There were 2,545 respondents to the survey; 1,821 survey responses were web-based and 724 survey responses were paper-based. Occupational categories, along with descriptions of their relevant job titles and the percentage of respondents in each category, can be found in Table 2.

Table 2: Occupational categories and descriptions of relevant job titles

Occupational Classifications	Percentage of Respondents	Descriptions
Registered Nurse (RN)	34.4%	Nurses in any department
Licensed Practical Nurse (LPN)	5.6%	LPN, or assistant nurse
Care Aide (CA)	10.7%	Anyone who provides direct patient care (nursing aide, resident aide, etc.)
Community Care Worker (CHW)	8.0%	Any workers who visit clients in their homes
Health Science Professionals	10.7%	Lab technicians, Diagnostic imaging technicians, Occupational Therapists, Physiotherapists, Nutritionists (professionals with non-medical degrees).
Office Staff	8.6%	Reception (any kind of front desk work with public contact), or anyone who is not in the "excluded" category but performs office work
Case Managers, Supervisors, Leads, or Coordinators	7.8%	As stated in the occupational classification
Other	8.2%	Physicians (Individuals with Medical Degrees, and/or any medical specialty), facility maintenance (Electricians/trades, plant operations, etc.), housekeeping/ support (cleaners, laundry, food service), educators, consultants, advisors.
Excluded	6.0%	Managers, Occupational Health & Safety Professionals, Human Resources (anyone who is not affiliated with a union), or anyone who is not in the "other" category.

The total responses account for 2.2% of the BC healthcare worker population. However, it would not be appropriate to call this percentage the response rate. The actual response rate would be calculated as the number of responses divided by the number of eligible healthcare workers who received the notification material promoting the survey. Since the number of workers who received the promotional message is unknown, the response rate is incalculable, a limitation shared with other web-based surveys [29]. The demographics of the study sample, along with the demographics of the provincial workforce [13] can be found in Table 3. The difference between the current sample and the provincial workforce indicates whether a group is over- or under-represented and by how much. As indicated, employees from one of the health authorities, from the acute care sector, and from the affiliates were the most under-represented. An "affiliate" is defined as a private or publicly funded healthcare employer recognized by HEABC (excluding the six Health Authorities of BC: Vancouver Coastal, Vancouver Island, Interior Health, Northern Health, Fraser Health, and Provincial Health) with unionized staff (as per the Association of Unions) that is located in BC. Some demographic variables of the provincial workforce were not available (for example, every care setting except for acute), or not categorized in the same way as in the survey (for example, age), and therefore a comparison could not be made.

Table 3: Study sample demographics compared to the BC healthcare workforce population

	Survey Responses (N = 2,545)	Provincial Values (N = 116,585 workers)	Difference
Female	86.5%	85.0%	1.5%
Age	-	-	-
16-19yrs	0%	n/a	n/a
20-29 yrs	10.9%	n/a	n/a
30-44 yrs	31.5%	n/a	n/a
45-65 yrs	57.1%	n/a	n/a
65 yrs	0.6%	n/a	n/a
Union Affiliations	86.0%	89.0%	(3.0)%
BCNU	38.3%	n/a	n/a
HSA	12.0%	n/a	n/a
UPN	1.7%	n/a	n/a
BCGEU	12.2%	n/a	n/a
HEU	21.8%	n/a	n/a
No Union	6.5%	n/a	n/a
Other	3.0%	n/a	n/a
Employers	-	-	-
Health Authority	86.9%	79.9%	7.0%
Contractor	4.5%	n/a	4.5%
Affiliate	5.6%	20.1%	(14.5)%
Other	3.0%	n/a	n/a
Health Authorities	-	-	-
FH	23.3%	17.4%	5.9%
IH	22.4%	14.7%	7.7%
VIHA	29.5%	13.8%	15.7%
VCH	11.7%	16.1%	(4.4)%
NH	7.9%	6.1%	1.8%
PHSA	2.3%	n/a	n/a
PHC	2.3%	n/a	n/a
Care Settings			
Acute	38.4%	55.0%	16.6%
Long term Care (LTC)	19.5%	n/a	n/a
Home and Community Care (HCC)	25.5%	n/a	n/a
Other	16.6%	n/a	n/a

Respondent Characteristics: Online vs. Paper-based

Respondents over the age of 30 years, contractors, affiliate employees, and respondents from long-term care facilities, and Community Health Workers (CHWs) filled out the survey using the paper-based format significantly more frequently than their counterparts. On the other hand, Case Managers, Supervisors, Coordinators and Leads (program or group leaders) filled out the survey on-line. A comparison of the demographics of respondents who participated via the web and paper-based surveys can be found in Appendix B.

Tolerance and Reporting of Violence

Responses regarding tolerance and reporting of verbal and physical violence for all survey respondents are found in Figure 1 and Appendix C. A majority of respondents indicated that they verbally reported verbal and physical abuse, and that they reported physical abuse in writing; however, only 12% strongly agreed with reporting verbal abuse in writing.

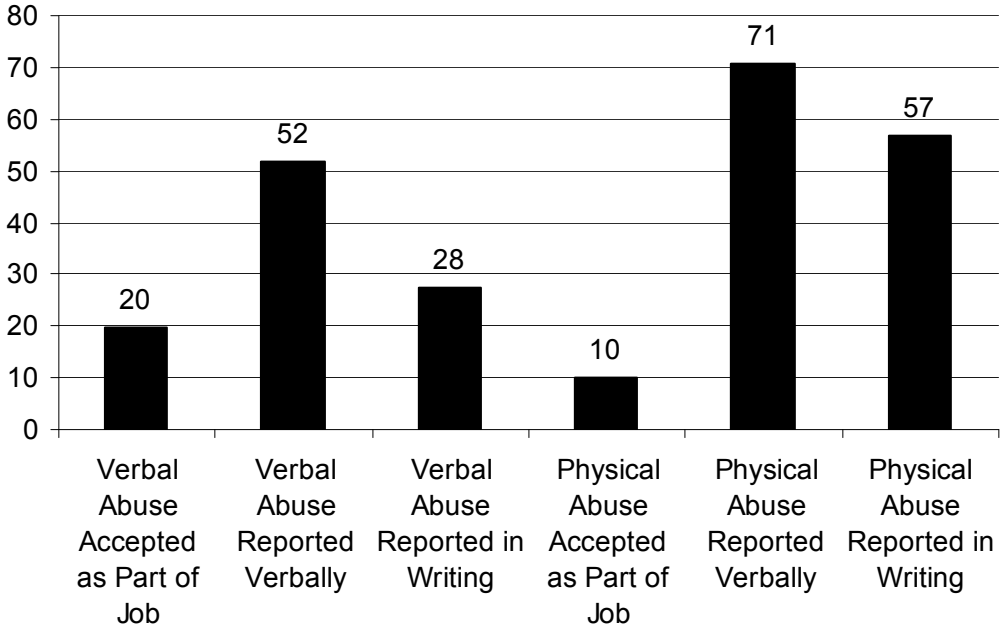

Figure 1: Frequency of 'agree' or 'strongly agree' responses for tolerance of violence and reporting of violent incidents (verbally and in writing) N = 2545

Statistically significant relationships were found between reporting of violence and gender, care setting, employer type, union affiliation, and health authority. Male respondents verbally reported verbal abuse less frequently than female workers. Respondents working in long term care and home and community care verbally reported verbal abuse more frequently than those in other care settings, while those in acute care reported verbal abuse in writing and reported physical abuse verbally, more often than those in other care settings. Affiliate employees tended to report verbal abuse in writing more often than other care settings.

Experience with Violence

The most common type of violence experienced by respondents was verbal rather than physical in nature (Figure 2 and Appendix C). Overall, 'swearing' (81.9%), 'other verbal abuse' (68.1%), and 'intimidating gestures' (61.6%), were the most commonly reported violent incidents. For physical abuse, 'intimidating gestures' was the most common, with over 50% of respondents reported having either personal or third-person experience. Physical violence related to 'uncontrolled animals' was the least common (18.1%); violence due to 'individuals with weapons' (20.1%) and 'inappropriate touching' (34.4%) were also relatively uncommon.

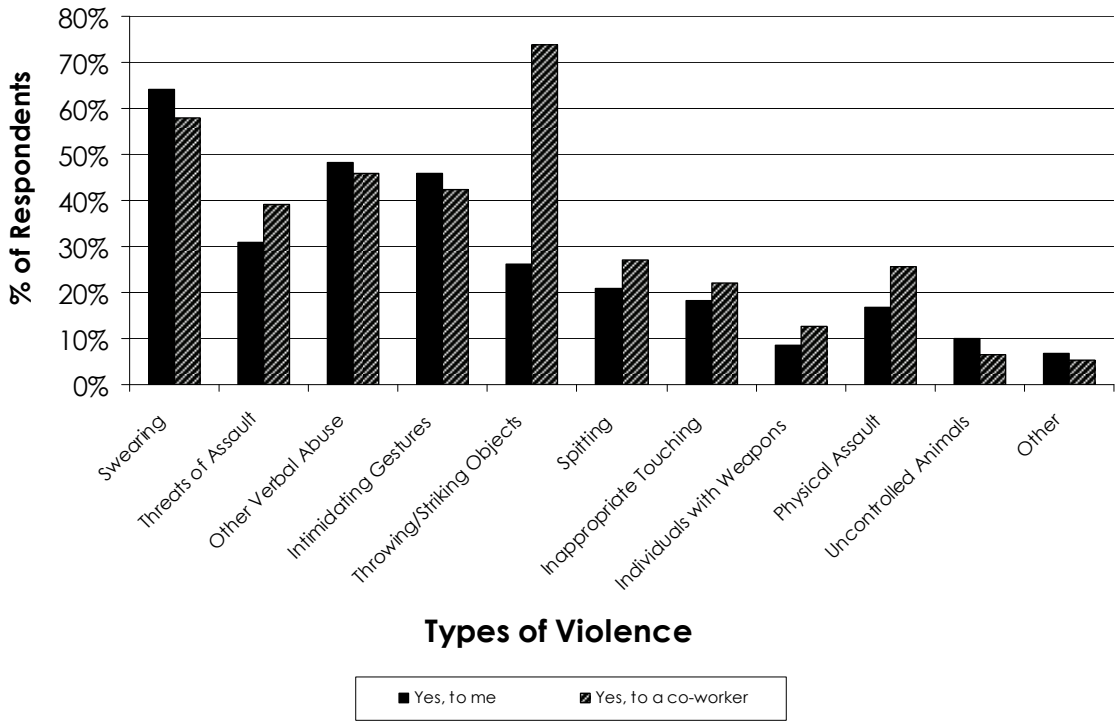

Figure 2: Frequency of responses for respondents' personal and third-person experience with incidents of violence N = 2545

When participants were asked about their personal and third-person experience of violent incidents, a noticeable difference was observed for "throwing or striking objects", where 73.9% of respondents reported third-person experience, but only 26.1% of respondents reported personal experience.

In terms of the relationship between reporting violence and demographic characteristics, male respondents tended to report violent incidents significantly more often than females, especially for 'threats of assault' and 'physical assault'. They also reported third-person experience of 'inappropriate touching' and 'physical assault' significantly more than their female counterparts.

Respondents from the long-term care sector tended to report more experience with overall violent incidents compared to other settings, while acute care reported more experience with 'other verbal abuse' and 'individuals with weapons'. Home and community care respondents reported significantly more experience with 'uncontrolled animals' than respondents in other settings. Third-person experience of violence was reported the most by respondents in long-term care; experience with incidents of 'inappropriate touching' was especially significant.

In general, Registered Nurses (RNs), Licensed practical Nurses (LPNs), and Care Aides reported more experience with verbal and physical violence than other occupations. CHWs and RNs reported experiencing significantly more 'inappropriate touching'. CHWs and case managers more often reported experiencing 'uncontrolled animals'. Health science professionals and case managers appeared to have more third-person experiences of violence

compared to other occupational groups. CHWs reported more personal experiences of violence compared to other healthcare occupations. The rates of violence reporting by occupation are shown in Appendix B.

Perception of Contributors of Violent Behaviour

Over 30% of respondents agreed that worker behaviour, facility design, patient illness, delays in attending patient needs, and short staffing are all contributors of violent behaviour. Respondents tended to agree that the following factors contributed to violent behaviour: patient illness (61.8%) and short-staffing (60.2%), followed by delays in attending patient needs (53.5%), and worker behaviour (including workers' approach to patients)(43.9%). Delays in attending patient needs and short staffing were selected as contributors of violent behaviour in acute care significantly more often than in other care settings. Figure 3 provides further details of the responses.

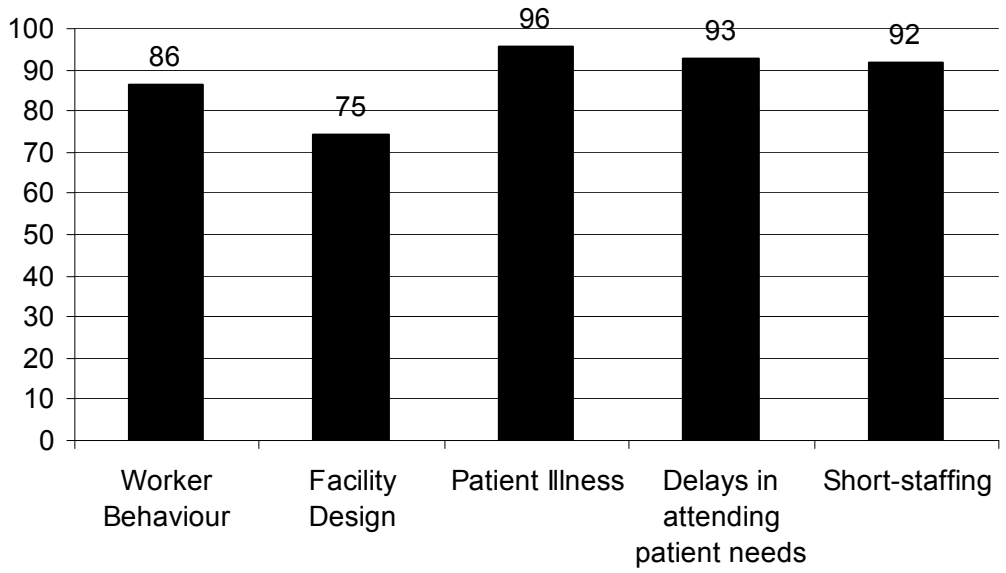

Figure 3: Frequency of 'agree' or 'strongly agree' responses for perceived contributing factors for violent behaviours

Perception of Prevention Efforts within the Organization

In general, there were mixed results in terms of perceived prevention efforts within the respondent's organization. Respondents tended to agree more with the statements of:

- "reporting supported by supervisor/colleagues" (73.8%),
- "training on how to recognize, report, and react to behaviour" (55.2%), and
- "workplace has procedures in place to protect workers" (49.8%).

More disagreement was seen in:

- "feeling safe from violence",
- "feeling protected by safety effective measures", and
- "feeling prepared to deal with violence".

Frequency of responses can be found in Figure 4 and Appendix C .

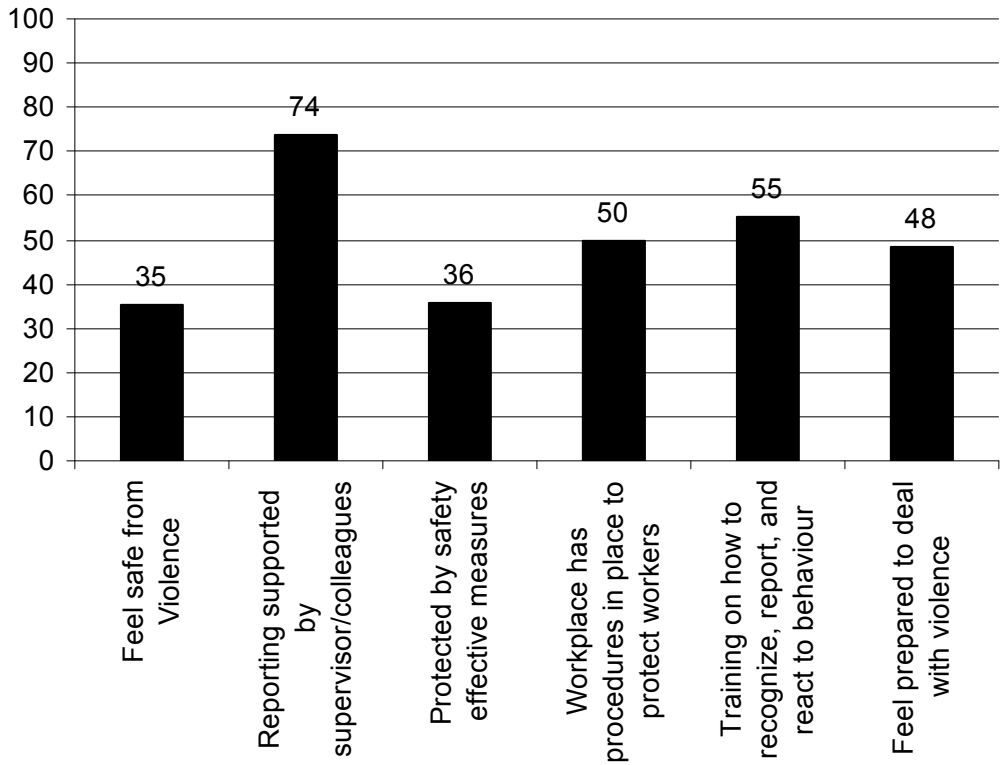

Figure 4: Frequency of 'agree' or 'strongly agree' responses for perceived effectiveness of prevention efforts within the organization

Respondents who work as contractors reported significantly more prevention efforts that focus on workplace procedures to protect workers, training, and preparedness to respond or prevent violent behaviour in their workplace. Respondents who were not affiliated with a union tended to agree with the effectiveness of all types of prevention efforts in their workplace more than those affiliated with a union.

RNs, LPNs, and care aides had significantly lower agreement with the presence or functioning of prevention efforts at their workplace when compared to other occupational groups.

Discussion

Survey Results

Tolerance and reporting

Overall, respondents reported more tolerance and less reporting of verbal violence when compared to physical violence, which has also been found in previous studies [23]. This could be related to desensitization to verbal violence, a low perceived risk of verbal violence, or low confidence in the likelihood of impacting verbal behaviours with reporting.

Contributors to violence

The biggest contributors to violence reported by respondents were system-wide issues: patient illness, short-staffing, and delays in attending to patient needs. Given the continuing demographic shift, these challenges are likely to accelerate rather than abate, as more healthcare workers retire and the aging population's healthcare needs increase [2]. These issues are also known to have a negative impact on work satisfaction [23], worker burnout, and worker retention [10]. Injury rates and time-loss among healthcare staff due to violence only exacerbates the human resources challenge related to short staffing and wait times and this situation clearly has the potential for an additional negative impact on patient safety [8].

Controls

In terms of perceived controls, "feeling supported by supervisor/colleagues" was the most common positive response, representing an area of strength to build upon. Although this area could still be improved (100% agreement would be ideal), this is considered a positive result. This result was also unexpected given the substantial amount of literature reporting the widespread problem of horizontal violence and bullying among healthcare workers [16,30]. However, the next two most commonly agreed-with statements, "training on how to recognize, report, and react to behaviour" and "workplace has procedures in place to protect workers," only had the agreement of approximately half the respondents, which highlights some opportunities for employer-driven controls. There was substantial disagreement among respondents with the following perception statements: "feeling safe from violence", "feeling protected by safety effective measures", and "feeling prepared to deal with violence".

Identifying Priority Areas

There were a few specific areas and groups which present a specific challenge for the PVPSC to address. Male respondents tended to accept verbal abuse and physical abuse more than their female counterparts (more so for verbal abuse than physical abuse). This result is consistent with the research literature [22]. However, males tended to report violent incidents significantly more than females, with the greatest difference found in violence related to threats of assault and physical assault; they also reported third-person experience of inappropriate touching and physical assault significantly more than other types of violence.

In terms of care setting, respondents in LTC tended to report more violent incidents compared to other settings. This is consistent with OHSAH's Workplace Health Indicator Tracking and Evaluation (WHITE™) Database incident reports and WorkSafeBC claims.

Third-personal experience of violence was also reported the most by LTC, especially for incidents of 'inappropriate touching'. Acute care reported more experience with 'individuals with weapons', which is consistent with research on weapons control being conducted primarily in hospitals [14,24,28,31]. Delays in attending to patient needs and short staffing were identified by respondents as being significant contributors of violent behaviours in acute care. Personal experience of other verbal abuse and uncontrolled animals were common in HCC, although this is to be expected since animal exposure is uncommon in the other care sectors.

With respect to occupation, RNs, LPNs, and care aides reported experiencing more verbal and physical violence. This has been found in previous research and is suspected to be due to increased patient contact in these professions [5].

Strengths and Limitations

Among the strengths of this study is a large sample size, fairly representative of provincial workforce. This is the first province-wide violence survey in BC to investigate violence experience as well as perceived causes of violence and workplace violence controls, while including multiple job titles, care settings, and geographic areas.

Online survey methods have the benefit of being cheaper, faster, and less prone to error than postal paper surveys [1,12,25,29] and allow for dissemination and inclusion over a wider geographic area [1,6]. As is the characteristic of online surveys, the current survey was not limited by a sub-sample or to certain 'accessible' populations [25], and the web format gave access to previously inaccessible worker groups [29]. Given that experience with violence is a sensitive topic, the fact that workers were able to respond at their own pace, may have enhanced perception of control and interest [1], and perhaps even more altruism, or more active promotion of the survey [29]. Perhaps most importantly for data quality, the enhanced anonymity likely enhanced the candid responses [1,29] and decreased the likelihood of social desirability bias [29], especially given that violence is still a stigmatized topic and under-reporting is very common among healthcare workers.

Although using an online survey tool has its strengths, it also has several limitations. Since internet research is still a growing field, there is not a lot of current research on the sources of error in web surveys [9]. Some of the limitations that have been suggested include: lack of control over the survey setting such as environmental noise and privacy [1,6]; limitations in the participant's connection, system speed, or software availability [12,25]; trust issues such as credibility, privacy, suspicion [1,25,29]; and a literacy, language, or disability bias [1,29].

The most relevant limitations for the current study are recruitment bias. It is possible with online surveys to get multiple submissions [29], although this has not been demonstrated to be a big problem in previous studies. The respondents represent a non-random selection of computer users [1,29], although the 'digital divide' that limits internet access among older and lower-income people closing). There is likely to be a self-selection bias that occurred, where those with an interest in the topic were more likely to reply to the survey. Since the study needed to overcome survey fatigue and competition with other surveys [29], it is possible that those who responded were motivated to do so because of experience with violent incidents, resulting in a skew towards higher rates of violence in the results. The

degree of this self-selection bias cannot be estimated with the information collected in the study, but an argument could also be made that workers who experience violence find it painful to revisit past experiences and may have avoided the survey.

It is unfortunate that the response rate of the survey is incalculable, since this is often an indicator of bias. However, a study comparing open, targeted, and snowball recruitment to online surveys found poor response rates with all options [20], so the least costly option (as in the current study) seems to provide the best value. The authors of this study go on to say that the snowball recruitment approach, where stakeholders forward the survey to their contacts (who in turn forward to their contacts) could substantially change a study's make-up and therefore impact a study's findings. In extreme cases this would be called 'sampling contamination' if recruitment snowballed to a specific sub-group resulting in under-representation of other groups. In the current study, the demographic characteristics of the whole population are known, so any under-sampling of the affiliate organizations, non-nurse occupations, acute care, and a particularly health authority can be taken into consideration when interpreting the results.

Conclusion

Implications for the PVPSC

Among the identified gaps and needs are several systemic issues representing persistent challenges to the BC healthcare industry. Although it is beyond the scope of the PVPSC, violence researchers have suggested that shortening waiting times and providing more information on roles and expectations to patients and families could reduce the rate of violence [7]. Systemic issues such as patient acuity and short-staffing, need to coordinate occupational health and safety efforts with system-wide efforts to address the human resources crisis in healthcare.

It is recommended that the PVPSC target the following prevention efforts in its future projects and research, and incorporate them into relevant resource development:

- A culture change of worker perception of violence in healthcare. This could start with projects designed to enhance a positive reporting culture (i.e. decrease tolerance of violence), especially for verbal violence.
- Look at barriers to reporting verbal violence (such as tolerance, frequency, desensitization, and time requirements) and develop interventions to remove these barriers.
- Exploring ways of eliminating barriers to reporting, especially for groups that tend to under-report.
- Worker behaviour was seen as a contributor by almost half of respondents. This may highlight a need for more training in clinical care techniques. However, this finding may also point to a need for increased recognition of other factors (i.e. patient responses to environment or medications) and appropriate ways of addressing them.
- In order to continue to attract and retain male healthcare workers, it would be worthwhile to do some specific outreach to this group to investigate the reasons for disproportionate experience of violence and explore possible controls.
- Targeting training for high-risk HCC and LTC occupations

It may be that implementing enhanced training and procedures will raise the awareness of or increase the perceptions of safety among respondents. However, even very comprehensive procedures and other controls will do little to enhance worker perceptions of safety if the controls are not well-communicated. This is likely to require training and educational efforts, but also a continued dialogue between management and front line workers about the status of risks or identified needs, implementation of controls, and effectiveness of the violence prevention program.

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Appendix A: Survey Instrument

This survey was developed by the Provincial Violence Prevention Steering Committee (PVPSC), a collaboration of employers and unions working to develop provincial violence prevention strategy for healthcare worksites in BC. The PVPSC is in the process of developing violence prevention resources for healthcare workplaces that will be distributed in 2009, and we need your input. The results of this survey will help us design better resources and assess the current state of violence prevention in healthcare in BC.

This survey is entirely voluntary; you are free to choose not to answer specific questions or not to answer the survey at all. Your responses are confidential. Answers will be grouped and we will not use anyone's name or attribute quotes to them.

1) Please indicate how much you agree with the following statements by circling a number on the following scale:

	Strongly disagree		Neutral		Strongly agree
Verbal abuse (yelling, swearing) by patients and public is just part of my job.	1	2	3	4	5
When I experience **verbal** abuse/violence, I always report it to my supervisor *verbally*.	1	2	3	4	5
When I experience **verbal** abuse/violence, I always report it to my supervisor *in writing*.	1	2	3	4	5
Physical abuse (hitting, pinching, etc.) by patients and public is just part of my job.	1	2	3	4	5
When I experience **physical** abuse/violence, I always report it to my supervisor *verbally*.	1	2	3	4	5
When I experience **physical** abuse/violence, I always report it to my supervisor *in writing*.	1	2	3	4	5

2) During work in the last 12 months, have you or your colleagues encountered the following (please check *ALL* that apply):

Swearing	□ No	□ Yes, to me	□ Yes, to a co-worker
Threats of assault	□ No	□ Yes, to me	□ Yes, to a co-worker
Other verbal abuse (e.g. racist/sexual comments, insults)	□ No	□ Yes, to me	□ Yes, to a co-worker
Intimidating gestures (i.e. threatening with fists)	□ No	□ Yes, to me	□ Yes, to a co-worker
Throwing / striking objects	□ No	□ Yes, to me	□ Yes, to a co-worker
Spitting	□ No	□ Yes, to me	□ Yes, to a co-worker
Inappropriate touching	□ No	□ Yes, to me	□ Yes, to a co-worker
Individuals with weapons	□ No	□ Yes, to me	□ Yes, to a co-worker
Physical assault	□ No	□ Yes, to me	□ Yes, to a co-worker
Uncontrolled animals	□ No	□ Yes, to me	□ Yes, to a co-worker
Other	□ No	□ Yes, to me	□ Yes, to a co-worker

3) Please indicate how much you agree with the following statements:

	Strongly disagree		Neutral		Strongly agree
Patient violence can be caused or made worse by the approach or behaviour of the worker.	1	2	3	4	5
Patient violence can be caused or made worse by the design of a facility.	1	2	3	4	5
Patient violence can be caused or made worse by the illness of a patient.	1	2	3	4	5
Patient violence can be caused or made worse by delays in attending to patient needs.	1	2	3	4	5
Patient violence can be caused or made worse by short-staffing.	1	2	3	4	5

4) Please indicate how much you agree with the following statements:

	Strongly disagree		Neutral		Strongly agree
I feel safe from violence at work.	1	2	3	4	5
If I report violence, my supervisor and colleagues will support me.	1	2	3	4	5
I am protected against violence in my workplace by effective safety measures.	1	2	3	4	5
If a violent incident occurs, my workplace has procedures in place to protect me.	1	2	3	4	5
I received training on how to recognize, report, and react to behavior.	1	2	3	4	5
I feel prepared to respond to or prevent violent behavior in the workplace.	1	2	3	4	5

5) Please fill in the following demographic information:

What is your union affiliation?	□ BCNU	□ HSA	□ UPN	□ BCGEU	□ HEU	□ no union	□ other:
In which Region do you primarily work?	□ Fraser	□ Interior	□ Vancouver Island	□ Vancouver Coastal	□ Northern	□ Not sure	
Who is your direct employer in your primary job?	□ Health Authority	□ Contractor	□ Affiliate	□ Not Sure			
What facility/organization do you primarily work with?							
In what care setting do you primarily work?	□ Acute care	□ Long term care	□ Home and community care	□ Other: _____			
What is your current job title?							
What is your gender?	□ Male	□ Female					
Please select your age range:	□ 16 to 19 years	□ 20 to 29 years	□ 30 to 44 years	□ 45 to 65 years	□ over 65 years		

Thank you!

Please provide your contact information if you wish to be entered to win an iPod Touch or nano. Your contact information will be stored separately from your responses and will only be used to contact a prize winner. All collected personal information will be destroyed within 3 months after the close of the survey.

Name: __(abrv)____ Contact Phone number: ___(abrv)____ Email: _(abrv)____

Appendix B: Respondent Demographics

Table B.1: A comparison of the demographics of respondents who participated in the web and paper-based survey

Demographic Variables	Web Survey Responses (N = 1,821)		Paper Survey Responses (N = 724)	
	%	N	%	N
Gender		1800		697
Female	85.4	1537	89.5	624
Age		1810		712
16-19yrs	0.06	1	0	0
20-29 yrs	11.4	207	9.3	66
30-44 yrs	33.9	613	25.7	183
45-65 yrs	54.2	981	64.2	457
65 yrs	0.4	8	0.8	6
Union Affiliations		1821		696
BCNU	35.3	642	48.1	335
HSA	14.7	268	5.5	38
UPN	2.3	42	0.1	1
BCGEU	12.8	233	11.1	77
HEU	21.7	396	22.8	159
No Union	8.1	147	2.4	17
Other	4.6	84	9.9	69
Employers		1811		699
Health Authority	89.5	1621	80.8	565
Contractor	3.2	58	7.7	54
Affiliate	4.6	84	7.7	54
Other	2.7	48	3.7	26
Health Authorities		1808		713
FH	25.2	456	18.4	131
IH	24.0	434	18.4	131
VIHA	27.7	500	34.1	243
VCH	11.7	212	11.5	82
NH	6.1	111	12.3	88
PHSA	2.5	45	1.8	13
PHC	2.3	42	2.2	16
Care Settings		1808		705
Acute	39.5	714	35.5	250
LTC	15.8	286	28.9	204
HCC	25.1	453	27.0	190
Other	19.6	355	8.7	61

Table B.2: A comparison of the demographics of respondents who participated in the web and paper-based survey (job title only)

	Web Survey Responses (N = 1,821)		Paper Survey Responses (N = 724)	
			%	N
Job Titles		1624		645
Registered Nurse	32.3	525	39.5	255
Licensed Practical Nurse	6.5	105	3.6	23
Care Aide	9.2	150	14.3	92
Community Care Worker	4.4	71	17.2	111
Health Science Professionals	12.2	198	6.8	44
Office Staff	11.3	183	2.0	13
Social Workers	3.1	50	4.2	27
Case Managers, Supervisors, Coordinator Leads	9.2	150	4.0	26
Others	8.5	138	7.4	48
Excluded	3.3	54	0.9	6

Appendix C: Additional Likert Scale Responses

Table C.1: Frequency of responses for attitudes in violence in terms of tolerance or acceptance and reporting (verbally and in writing) based on a 5-point Likert scale

Tolerance/Reporting	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Verbal Abuse Accepted as Part of Job	50.4%	21.9%	8.0%	13.3%	6.3%
Verbal Abuse Reported Verbally	8.5%	23.7%	16.0%	29.7%	22.1%
Verbal Abuse Reported in Writing	17.9%	30.9%	23.6%	15.6%	12.0%
Physical Abuse Accepted as Part of Job	68.7%	15.3%	5.8%	6.2%	4.0%
Physical Abuse Reported Verbally	7.8%	10.4%	11.3%	27.4%	43.2%
Physical Abuse Reported in Writing	10.5%	14.1%	18.4%	20.5%	36.5%

Table C.2: Frequency of responses for perception of contributors of violent behaviours

Contributors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Worker Behaviour	2.2%	3.3%	8.3%	42.3%	43.9%
Facility Design	3.2%	5.1%	17.2%	42.9%	31.6%
Patient Illness	1.1%	0.8%	2.6%	33.7%	61.8%
Delays in attending patient needs	1.3%	1.7%	4.4%	39.1%	53.5%
Short-staffing	1.3%	1.7%	5.3%	31.4%	60.2%

Table C.3: Frequency of responses for perception of prevention efforts within the organization

Prevention Efforts	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Feel safe from Violence	14.5%	26.7%	23.6%	27.4%	7.8%
Reporting supported by supervisor/colleagues	4.6%	8.3%	13.3%	38.3%	35.5%
Protected by safety effective measures	11.9%	24.4%	28.1%	27.7%	8.0%
Workplace has procedures in place to protect workers	7.8%	16.8%	25.5%	36.7%	13.1%
Training on how to recognize, report, and react to behaviour	10.1%	18.9%	15.8%	38.6%	16.6%
Feel prepared to deal with violence	8.8%	19.1%	23.9%	35.5%	12.7%