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HEALTH CARE PERSONNEL AND WORKPLACE VIOLENCE IN THE EMERGENCY DEPARTMENTS OF A VOLATILE METROPOLIS: RESULTS FROM KARACHI, PAKISTAN

Waleed Zafar, MBBS, MSC, MPH, SCD*, Emaduddin Siddiqui, MBBS*, Kiran Ejaz, MBBS, MSC*, Muhammad Umer Shehzad, MBBS*, Uzma Rahim Khan, MBBS, MSC*, Seemin Jamali, MBBS†, and Junaid A. Razzak, MD, PHD*

*Department of Emergency Medicine, World Health Organization Collaborating Center for Emergency Medicine and Trauma Care, Aga Khan University, Karachi, Pakistan

†Department of Emergency, Jinnah Postgraduate Medical Center, Karachi, Pakistan

Abstract

Background—Workplace violence (WPV) is an important challenge faced by health care personnel in the emergency department (ED).

Study Objectives—To determine the prevalence and nature of WPV reported by physicians and nurses working in the EDs of four of the largest tertiary care hospitals in Karachi, Pakistan and to understand the mental health impact of experiencing WPV.

Methods—This cross-sectional survey was conducted between September and November 2008 using a widely used questionnaire developed by the World Health Organization. Overall, 266 (86% response rate) questionnaires were included in this study.

Results—A total of 44 (16.5%) physicians and nurses said they had been physically attacked, and 193 (72.5%) said that they had experienced verbal abuse in the last 12 months. Among those who reported physical attack, 29.6% reported that the last incident involved a weapon, and in 64% of cases the attacker was a patient's relative. Eighty-six percent thought that the last attack could have been prevented, and 64% said that no action was taken against the attacker. After adjusting for covariates, physicians were less likely than nurses to report physical attack (odds ratio [OR] 0.46; 95% confidence interval [CI] 0.2–1.0), and personnel with greater work experience (OR 4.8; 95% CI 2.0–11.7) and those who said that there were procedures to report WPV in their workplace (OR 3.2; 95% CI 1.6–6.5) were more likely to report verbal abuse. WPV was associated with mental health effects in the form of bothersome memories, super-alertness, and feelings of avoidance and futility.

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Reprint Address: Waleed Zafar, MBBS, MSC, MPH, SCD, Department of Emergency Medicine, Aga Khan University, Karachi 74800, Pakistan.

SUPPLEMENTARY DATA

Supplementary data related to this article can be found online at <http://dx.doi.org/10.1016/j.jemermed.2013.04.049>.

Conclusion—WPV is an important challenge in the EDs of large hospitals in Karachi. A majority of respondents feel that WPV is preventable, but only a minority of attackers face consequences.

Keywords

workplace violence; emergency department; mental health; Karachi; Pakistan

INTRODUCTION

Workplace violence (WPV), verbal abuse, and threatened or actual physical violence, is an important challenge faced by physicians and nurses in emergency departments (EDs) the world over (1–9). Emergency health care personnel, due to the frontline nature of their jobs, are at an increased risk of experiencing WPV compared to other health care specialties (2,4,7–10). Experiencing WPV has, in turn, been associated with perceptions of poor mental health, burnout, and delivery of suboptimal care to patients among health care personnel (4,6,10–12). WPV is expected to be a particular problem in a large volatile metropolis like Karachi, Pakistan, with its recent history of political-, ethnic-, and sectarian-motivated violence and a general deterioration in law enforcement (13–16). A new low in violence against health care personnel working in an ED was reached when a bomb targeting the ED of Jinnah Postgraduate Medical Center (JPMC), a large tertiary care hospital in Karachi, went off just outside the main entrance of the ED on February 5, 2010, killing 13 people (17–19). At the time, health care personnel were busy tending to casualties being brought from the site of another bombing the same day. Authorities managed to defuse in time yet another bomb in the parking lot of the hospital (17,18). WPV in Karachi EDs has remained understudied (15,20). The aim of this study was to determine the prevalence and nature of WPV reported by physicians and nurses working in the EDs of four large tertiary care hospitals in Karachi and to understand the mental health impact of experiencing WPV.

MATERIALS AND METHODS

Study Design and Setting

This study was a cross-sectional survey conducted in the EDs of four of the largest tertiary care hospitals in Karachi, Pakistan. Two of these hospitals, Aga Khan University Hospital (AKUH) and Liaquat National Hospital (LNH), are private non-profit, and the other two, Civil Hospital Karachi (CHK) and JPMC are in the public sector. Selected characteristics of these hospitals are presented in Table 1. Currently, only AKUH has a dedicated Emergency Medicine (EM) residency program staffed by EM residents and emergency physicians with 4 years of postgraduate training in EM after a 5-year undergraduate program of medical education and 1 year of internship. The EDs of all other hospitals are staffed by full-time physicians who usually do not have any postgraduate training, as well as rotating interns and residents from Departments of Medicine, Surgery, Orthopedics, and Pediatrics. Nursing staff in all the participating EDs had or were studying towards a Registered Nurse (RN) degree that is awarded after 4 years of nursing training after high school. The study was approved by the Ethics Research Committee of the AKUH as well as the ethics committees of all the participating hospitals.

Selection of Participants

We obtained a complete list of physicians and nurses working in the four EDs at the beginning of September 2008. Trained research assistants (RA) then approached these personnel in person to explain the objectives of the study and to invite them to participate. Participants were enrolled after oral consent and requested to fill out the paper questionnaire without providing identifying information and to return the questionnaires to the RAs. No compensation was offered for participation in the study. The data collection took place between September and November 2008.

Methods of Measurement

We adapted a survey instrument developed by the Joint Programme on Workplace Violence in the Health Sector of the International Labor Office, the International Council of Nurses, the World Health Organization, and the Public Services International (ILO/ICN/WHO/PSI Joint Programme) (21). This questionnaire has been used in several other countries (22–28). For its use in Karachi, Pakistan, we used the English version developed by the ILO/ICN/WHO/PSI Joint Programme, as well as its translation in Urdu, the common language in Karachi (available as online supplemental material). The translation was first done by a professional translator at AKUH and was then back-translated by a different translator to verify. The authors, fully bilingual in Urdu and English, also examined the translation and approved it. The English and the Urdu versions of the questionnaire were then pilot tested with a sample of 10 physicians and nurses in the ED of AKUH. A trained researcher first administered the survey and then asked the respondents about their understanding of the questions and whether they had any concerns or queries. Both versions of the questionnaire were found to be fully understandable in the local context and only slight modifications to the translation were needed. The revised versions were then used in this study after the approval of the Ethics Research Committee of the AKUH.

The questionnaire was divided into the following sections: the first section had 19 questions regarding personal and workplace characteristics. The second section had questions about physical violence in the workplace, defined as use of “physical force against another person that results in physical, sexual, or psychological harm and includes beating, kicking, slapping, stabbing, shooting, pushing, biting, and pinching, among others.” The primary question of interest in this section was whether in the last 12 months the respondent had been physically attacked in the workplace. Follow-up questions on whether a weapon was involved, the identity of the attacker, the place and time of the attack, and the consequences for the attacker referred to *the last time* that the respondent was physically attacked in the workplace. Another set of questions asked the respondents to rate on a 5-point scale (“Not at All,” “A Little Bit,” “Moderately,” “Quite a Bit,” and “Extremely”) how bothered they have been since the last attack by 1) repeated, disturbing memories, thoughts, or images of the attack; 2) avoiding thinking about or talking about the attack or avoiding having feelings related to it; 3) being “super-alert” or watchful and on guard; and 4) feeling like everything they did was an effort? The third section was related to psychological violence or verbal abuse, defined as “bullying, mobbing, harassment, and verbal abuse that humiliates, degrades, or otherwise indicates a lack of respect for the dignity and worth of an individual.” The primary question of interest in this section was whether in the last 12 months the

respondent had been verbally abused in the workplace and if so, how often. Follow-up questions related to disturbing memories, etc., like those for physical attack, referred to *the last time* that the respondent was verbally abused in the workplace.

Data Processing and Analysis

Based on earlier studies, we hypothesized that the prevalence of experiencing verbal abuse in the ED in the last 12 months by health care personnel is approximately 65%, and physical attack is 15% (7). Given our overall study goal of estimating the experience of physical attack or verbal abuse within $\pm 5\%$ of true population prevalence, our estimated sample size was 265. All power analyses were conducted using free software, G*Power (version 3.1.5) (29).

Questionnaire responses were entered into a database by a trained research assistant (K.E.) and 20% of entries were randomly checked against the paper questionnaires by W.Z. for accuracy. All analyses were conducted using Stata version 11.2 (StataCorp LP, College Station, TX) (30). Kruskal-Wallis test was used to compare selected differences in the ordinal outcomes of mental health impact of WPV between subgroups (31). The Kruskal Wallis test is a non-parametric version of analysis of variance and a generalized form of the Mann-Whitney test that is used when the outcome is ordinal with independent variables having two or more levels (32). To test the association of independent variables with the report of WPV in last 12 months, multiple logistic regression was used. The final models for estimation of adjusted odds ratios were developed based on forward selection using Akaike Information Criterion after collinearity in predictors was ruled out using variance inflation factor (33,34).

RESULTS

A total of 310 physicians and nurses, identified from the roster and available during duty hours, were approached in person to participate in the study. Overall, 277 questionnaires were returned, of which 266 were complete and included in this study (86% response rate). The demographic characteristics of the overall sample, as well as those who said they had experienced physical attack or verbal abuse in the last 12 months, are reported in Table 2.

In the overall sample there were 55% males, 63% respondents younger than 30 years and 10% older than 39 years of age, 53% who were not married, and an equal proportion of physicians and nurses (134 and 132, respectively). Of the sample, 30.5% came from AKUH, 29% from JPMC, 24% from LNH, and 16.5% from CHK. Sixteen percent of the sample had <1 year of experience in the health sector compared to 48% that had between 1 and 5 years of experience. Two-thirds of the sample had full-time employment and 87% had worked during the night shift (6 PM to 7 AM) in the last year.

Prevalence of WPV

A total of 44 physicians and nurses in a sample of 266 (16.5%) reported having been physically attacked in the last 12 months. Among those who reported being physically attacked, 54.5% were males, 50% were younger than 30 years and 23% older than 39 years, 59% were nurses and 41% physicians, 59% were married, 50% had experience of 5 years or

less in the health sector, and exactly half were employed in the public and half in the private sector hospitals.

Similarly, 193 physicians and nurses out of 266 (72.5%) reported having been verbally abused in the last 12 months. Among those who reported verbal abuse, 46% were female, 56% were younger than 30 and 12% were older than 39 years, 48% were married, 53% were nurses and 47% were physicians, 57% had an experience of 5 years or less in the health sector, and 46% worked in public sector hospitals, whereas 54% worked in the private sector.

Characteristics of WPV

Table 3 reports the characteristics of WPV among those who reported being physically attacked or verbally abused in the last 12 months. Among the 44 physicians and nurses who reported being physically attacked, 13 (29.6%) reported that the last time they were physically attacked in their place of work, it involved “physical violence with a weapon.” A total of 31 (70.4%) respondents thought that the last incident of physical attack was a “typical incident.” In a majority of cases the attacker was a relative of a patient or someone accompanying the patient (63.6%), and in the remaining cases the assailant was the patient (20.4%), a staff member (6.8%), a supervisor/manager (4.6%), or someone from the general public (4.6%). Slightly more than a third (34.1%) of attacks reportedly took place at night between midnight and 7 in the morning, and another quarter (27.2%) happened in the afternoon between 1 and 6 PM. A vast majority (86.4%) of those who reported being physically attacked thought that the last attack could have been prevented, and 48% reported that no action was taken to investigate the causes of the incident. Sixty-four percent of respondents said that no action was taken against the attacker, whereas 16% reported that the attacker was verbally warned. Only 2 respondents (4.6%) said that the matter was reported to the police and none said that the attacker was prosecuted.

Among the 193 physicians and nurses who reported being verbally abused in the last 12 months, 67.4% said that they were “sometimes” verbally abused in the last 12 months and 19% said that they were abused only “once”; 13.5% said that they were abused “all the time.” Eighty percent of those who reported verbal abuse thought that the last incident was “typical”; 70% reported that the last incident involved abuse from a relative of a patient, 16% said that the abuser was a patient, 7.3% said that a staff member abused them, and 3% said that they were abused by a supervisor or a member of the general public. Compared to those who reported physical attack, a smaller proportion said that the last incident of verbal abuse could have been prevented (72.5% compared to 86.4%) or that any action was taken to investigate the causes of the incident (22% compared to 31.8%). Finally, 62% said that there were no consequences for the abuser.

Mental Health Impact of WPV

Table 4 reports the mental health impact of WPV among those who reported being physically attacked or verbally abused in the last 12 months (*p*-values not reported in the Table). The first column of Table 4 reports the response on a 5-point scale (1 = not worried at all; 5 = very worried) to the question “How worried are you about violence in your current

workplace?” Overall, the mean score for the entire sample was 3.57 (SD 1.2). Mean score for males was not significantly higher ($p = 0.06$) than females. Compared to those <30 years old, those who were 30–39, 40–49, and 50–59 years old had significantly higher mean scores (3.9, 4.2, and 4.5 vs. 3.3, respectively, $p = 0.0001$). In this context, the interpretation of a significant Kruskal-Wallis test is that at least one level is significantly different from the other levels within a given stratum. Similarly, there were no significant differences in mean scores based on marital status ($p = 0.09$) or the institution of work ($p = 0.5$). However, compared to nurses, physicians had a significantly lower score ($p = 0.04$) and compared to those with work experience <1 year (mean = 3.2), those who had experience of 6–10 years (mean = 4.1), 16–20 years (mean = 4.3), or more than 20 years (mean = 4.5) had significantly higher ($p = 0.0001$) mean scores.

The second to fifth columns of Table 4 report, on a 5-point scale (1 = not at all; 2 = a little bit; 3 = moderately; 4 = quite a bit; 5 = extremely), the responses of those who reported being physically attacked in the last 12 months regarding “how bothered” they have been by the following four types of experiences since the last attack: 1) repeated, disturbing memories, thoughts, or images of the attack; 2) avoiding thinking about or talking about the attack or avoiding having feelings related to it; 3) being super-alert or watchful and on guard; 4) feeling like everything was an effort. At a 95% level of confidence, there were no statistically significant differences in the average score for repeated disturbing memories, avoidance, super-alertness, or feeling that everything is an effort across gender, marital status, professional training, or institution of work.

The final four columns of Table 4 report the responses of those who reported being verbally abused in the last 12 months regarding “how bothered” they have been by the above-mentioned four types of experiences since the last attack. At a 95% level of confidence, persons aged < 30 years were significantly ($p = 0.0005$) less bothered by the feeling that everything is an effort compared to older age groups; persons aged 40–49 years were significantly ($p = 0.006$) less bothered by feelings of avoidance compared to all other age groups; married respondents were significantly less bothered by memories of abuse ($p = 0.02$) but more bothered by the feeling that everything is an effort ($p = 0.03$); and physicians were significantly ($p = 0.0001$) more bothered by the feeling that everything is an effort, compared to nurses.

Correlates of WPV

Table 5 presents the association of various characteristics with reporting of physical attack and verbal abuse in the last 12 months using unadjusted and adjusted odds ratios (OR). Compared to respondents <30 years old, those who were 30–39 years (OR 3.39; 95% confidence interval [CI] 1.6–7.1 for verbal abuse) and 40–49 years (OR 4.05; 95% CI 1.5–10.9 for physical attack; and OR 3.28; 95% CI 1.0–11.6 for verbal abuse) were significantly more likely to report WPV in unadjusted models. In cases of verbal abuse, those who said that their hospital had procedures for reporting WPV (OR 3.02; 95% CI 1.7–5.3) and those with experience of 1–5 years (OR 3.41; 95% CI 1.7–7.0) or more than 5 years (OR 10.6; 95% CI 4.4–25.4) had significantly higher odds of reporting WPV in unadjusted models. Significantly, the likelihood of reporting either physical attack or verbal abuse were not

associated in bivariate models with gender, being a physician or a nurse, working in a public rather than private sector hospital, being employed full time, or working the night shift.

In adjusted models that controlled for gender, age group, whether physician or nurse, whether working in public or private sector, work experience, full-time employment status, whether working during night shift, and whether there are procedures for reporting WPV in the place of work, physicians were only half as likely (OR 0.46; 95% CI 0.2–1.0) as nurses to report physical attack, but this difference did not hold for reporting verbal abuse. On the other hand, having experience of 1 year or more in the health sector (OR 4.83; 95% CI 2.0–11.7 for 1–5 years; OR 13.4; 95% CI 2.9–62.4 for more than 5 years) and saying that there are procedures for reporting WPV in the workplace (OR 3.22; 95% CI 1.6–6.5) significantly increased the odds of reporting verbal abuse but not physical attack in adjusted models. There were no other significant effects.

Correlates of Mental Health Impact

To understand the overall impact of physical attack or verbal abuse on mental health, we developed an index of mental health impact by taking the sum of individual scores across four types of experiences presented in Table 4 since the last attack. The range of this index was 4–20, with mean values of 10.85 (SD 3.29) for those who reported physical attack and 10.57 (SD 3.73) for those who reported verbal abuse in the last 12 months. Assuming that the index of mental health impact of verbal abuse was approximately normally distributed (Shapiro-Wilk test not significant), we regressed the index on gender, age, professional training (nurse or physician), institute of work, and work experience. None of the covariates were significantly associated with the index (we do not report results for physical attack due to small sample size).

DISCUSSION

The objective of this study was to assess the prevalence over the last 12 months of WPV in EDs of four of the largest tertiary care hospitals in Karachi, as reported by physicians and nurses. We used a previously validated and widely used instrument and found that 16.5% of respondents reported being physically attacked and 72.5% reported being verbally abused in the last 12 months. Notably, almost a third of respondents who reported physical attack said it involved a weapon. An important finding of this study is that experience of WPV was fairly prevalent in the EDs of Karachi as reported by physicians and nurses working there. Although there is anecdotal evidence from Pakistan that physicians and nurses face high levels of WPV in the EDs, there has been only one nationwide study done to estimate violence and abuse experienced by junior physicians in nine EDs in different parts of Pakistan (20). That study found that 65% of physicians in training reported verbal abuse and 12% reported physical abuse in the last 2 months—estimates that are lower than what we report in this study for the last 12 months. They also found that male physicians were more likely than female physicians to experience abuse, whereas level of qualification and clinical experience had no effect. Physical or verbal abuse was found to affect self-reported job performance and job satisfaction. Our study adds to these earlier findings by focusing on

four of the largest EDs in one metropolis, Karachi, and by including both physicians and nurses in the sample rather than just junior physicians.

For our study, we used a standardized measure that allows our findings to be compared with those from other countries that have used the same or similar instrument. In line with what we report, surveys in other countries have also found that verbal abuse is more common than physical attack (28). Experiences of physical violence in the last 12 months by health care personnel in Sophia, Bulgaria (7.5%), Rio de Janeiro, Brazil (6.4%), Beirut, Lebanon (5.8%), Chiangmai province, Thailand (10.5%), and Johannesburg, South Africa (9–17%) were lower than our findings in Karachi, Pakistan (16.5%) (28). Similarly, the experiences of verbal abuse in Australia (67%), Brazil (39.5%), Bulgaria (32.2%), Lebanon (40.9%), Portugal (27.4–51%), South Africa (52–60.1%), and Thailand (47.7%) were lower than in the EDs of Karachi (72.5%) (28).

One possible explanation for the higher reported prevalence of WPV in the EDs of Karachi is ED overcrowding. As indicated by Table 1, and documented elsewhere as well, EDs in Karachi, especially in public sector hospitals, manage large numbers of patients with very limited staff (35). ED overcrowding has been found to be a risk factor for WPV and could partly explain the high prevalence of WPV in this study (4,36,37). A second plausible explanation is the high levels of urban violence and easily available guns that make their way into the EDs in Karachi, a city with an estimated population of over 18 million (38). Karachi has had a history of political, ethnic, and sectarian strife that has escalated in recent years into sectarian-motivated bombings; murderous score-settling among political parties; and in-flow of arms, militants, and refugees from insurgencies in other Pakistani provinces (13–16,39,40). At least some of this violence is political in nature in that perpetrators and victims are more likely to be associated with various political parties (16,41). This context helps explain a few findings of this study. For instance, surveys of WPV from other countries suggest that physical violence is mainly perpetrated by patients (possibly mentally ill, with organic brain syndrome, or under the influence of alcohol/drugs), whereas the perpetrators of psychological violence are mainly the hospital staff (2,4,9,28). In Karachi EDs, on the other hand, we find, like Mirza et al., that the overwhelming majority of WPV, whether physical or verbal, was reported to be perpetrated by the patient's relatives or other people accompanying the patient (20). We believe that this finding reflects a combination of poor security controls at the ED entrances, cultural norms that encourage large numbers of family and friends to accompany patients to EDs, and the political nature of violence in Karachi, with enraged mobs or activists of political parties following patients to the ED and threatening health care personnel to influence allocation of scarce time and resources. These realities are also reflected in our finding that of those who reported being physically attacked in the last 12 months, approximately a third reported that the incident involved a weapon.

A notable finding of this study is that the likelihood of reporting WPV was not associated with gender or working in public rather than private sector hospitals. While some studies have found gender differences in reports of WPV, others, like us, have found no difference (3,9,20). Similarly, although there were significant differences in reports of WPV between public and private sector hospitals in South Africa, our study did not find any difference (27,28). This study also finds that greater age and clinical experience were associated with

higher likelihood of reporting WPV in the last 12 months. This might be because older and more experienced personnel feel more empowered to report WPV or because more experienced individuals were more likely to be called upon to get involved in sensitive or potentially violent situations involving irate, aggressive, or armed patients or their relatives. The former explanation is somewhat supported by our finding that respondents who said that there were procedures for reporting WPV in their place of work were more likely to report verbal abuse.

Not surprisingly, the high levels of WPV in the EDs in Karachi—which this study finds to be higher than any of the other countries studied, using the same instrument—results in substantial levels of stress among physicians and nurses. On a scale of 1 to 5 (with 5 being “very worried”), the mean for the entire sample was 3.57, suggesting a high level of worry about WPV. Respondents also reported being bothered by recurrent memories of WPV incidents, feelings of avoidance, super-alertness, and feeling that everything was an effort. The mental health impact of WPV remains understudied and, as such, this study contributes to findings that have associated experience of WPV with poor mental health and burnout among health care personnel (10–12). In future work it would be important to understand more rigorously the impact of WPV on mental health by prospectively looking at association of WPV with general mental health, absenteeism, job satisfaction, burn-out, changes in profession, and symptoms of post-traumatic stress disorder after specific events of WPV among health care professionals. Careful work is also needed to estimate the direct and indirect costs to employers and the health care system of WPV in EDs and the ways in which it might be expected to affect optimum patient care.

The results of this study highlight the urgent need to address WPV in a comprehensive manner. Better security at EDs can ensure that aggressive or armed persons accompanying patients do not get access inside. Greater awareness of WPV, development of clearly defined reporting procedures, and an institutional commitment to prevent and prosecute WPV are also likely to reduce levels of violence. Finally, ED administrations need to develop programs to help health care personnel deal with the psychological impact of working in a very stressful and abusive environment. This is necessary both to ensure the mental health of these personnel and also to ensure that optimum services continue to be provided to patients in the ED. Challenges of overcrowded EDs, urban violence, ethnic conflict, and politicized public service delivery are ones that many large cities in low and lower middle income countries face. In this context, the findings from Karachi that we report in this study are not likely to be unique, and in fact, are relevant for health care policy-making in other settings.

Limitations

This study has several limitations. First, it was based on self-reported data that might be biased compared to objectively verified events of WPV in EDs. Memories, especially regarding events like a physical attack involving a weapon, might be hyper-salient, leading to distorted time perception: events that happened more than a year ago might be misremembered to have occurred more recently. Attempt to minimize recall bias was done by limiting the questions to the past 12 months and the last remembered event, an approach that has been adopted in previous studies (9,28). Moreover, prospectively observing the

incidence of WPV in a defined setting would have been more difficult, expensive, and would not have been possible in large EDs like the ones reported in this study. Similarly, relying on events reported to the administration would lead to underestimation of the prevalence of WPV. Sampling bias was reduced by making an effort to survey all physicians and nurses currently working in the four EDs and by achieving a high response rate.

Among the strengths of this study are the use of a standardized and previously validated instrument that allows comparison of this study with others that have used the same or similar instruments. Second, we also look at how WPV impacts the mental health of the respondents. Although several studies on frequency or prevalence of WPV in EDs have been done, relatively little attention has been paid to the mental health impact of WPV. In this regard, this study offers one estimate of the mental health impact of WPV in Karachi, Pakistan. Finally, by focusing only on large EDs in one mega-city, this study offers a link between the general level of violence in a city and its specific manifestation as WPV in the city's EDs.

CONCLUSION

This study highlights that WPV is fairly prevalent in EDs in Karachi. Nurses and physicians are faced with WPV, sometimes entailing serious risk to life in the form of physical attacks involving weapons, on a regular basis. The reported levels of WPV in Karachi, which are higher than other countries where similar estimates have been done, are also associated with substantial mental health impact on health care personnel.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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ARTICLE SUMMARY

1. Why is this topic important?

Workplace violence (WPV) in the emergency department (ED) is a public health challenge with significant impact on mental health and job satisfaction of health care personnel and quality of care delivered to the patients. Prevalence of WPV in large cities in low and middle income countries (LMICs) beset with high levels of violence in the society, and the mental health impact of this WPV, remains understudied. Given the high volume of patients seen in large EDs of LMIC metropolises, a better understanding of challenges faced by health care personnel can help in the development of appropriate policies to reduce WPV.

2. What does this study attempt to show?

This cross-sectional study reports the prevalence of physical attacks and verbal abuse in the EDs of four of the largest tertiary care hospitals in Karachi, Pakistan and the mental health impact of this WPV. The results are compared with findings from several other countries.

3. What are the key findings?

Of all respondents, 16.5% reported being physically attacked and 72.5% said that they had experienced verbal abuse in the last 12 months, numbers higher than those reported from several other countries. Health care personnel are worried by WPV and, on average, they are bothered a little bit or moderately by disturbing memories, feelings of avoidance and super-alertness, and the feeling that everything is an effort as a result of WPV. There is no association of gender or working in a public sector hospital with likelihood of reporting WPV or its mental health impact. Personnel with greater work experience and those who said that there were procedures to report WPV in their workplace were more likely to report verbal abuse.

4. How is patient care impacted?

High prevalence of WPV and its mental health impact are expected to adversely affect quality of patient care. Comprehensive policies to reduce WPV in the EDs of Karachi are needed. These might include better security at EDs, well-publicized procedures for reporting WPV, and institutional commitment to prevent and prosecute WPV. More work is needed to understand how WPV affects the general mental health, absenteeism, job satisfaction, burn-out, changes in profession, and symptoms of post-traumatic stress disorder after specific events of violence among health care personnel.

Table 1

Selected Characteristics of the Hospitals Participating in the Study

Hospital	Sector	Cost of Care to ED Patients	ED Shifts	Number of Physicians and Nurses in ED Per Day (All Shifts Included)	Number of Patients Seen Per Day in the ED	Status	Offers Graduate Training in EM
Aga Khan University Hospital (AKUH)	Private	Mostly out of pocket	24-hour ED; Physicians work in two and nurses in three shifts	25–31 physicians; 45–50 nurses	120–140 patients	Teaching hospital*	Yes
Liaquat National Hospital (LNH)	Private	Mostly out of pocket	24-hour ED; Physicians and nurses work in three shifts	27–30 physicians; 50–60 nurses	90–100 patients	Teaching hospital*	No
Civil Hospital Karachi (CHK)	Public	Free	24-hour ED; Physicians and nurses work in three shifts	13–18 physicians; 13–20 nurses	800–850 patients	Teaching hospital*	No
Jinnah Post-graduate Medical Center (JPMC)	Public	Free	24-hour ED; Physicians and nurses work in three shifts	25–30 physicians; 20–27 nurses	600–650 patients	Teaching hospital*	No

ED = emergency department; EM = Emergency Medicine.

* Teaching hospital for both undergraduate and graduate medical education.

Table 2

Demographic Characteristics of the Sample

Characteristics	n (%) for Entire Sample (n = 266)	n (%) for Victims of Physical Attack* (n = 44)	n (%) for Victims of Verbal Abuse† (n = 193)
Gender			
Female	120 (45.1)	20 (45.5)	89 (46.1)
Male	146 (54.9)	24 (54.5)	104 (53.9)
Age			
<30 years	167 (62.8)	22 (50.0)	108 (56.0)
30–39 years	72 (27.1)	12 (27.3)	62 (32.1)
40–49 years	21 (7.9)	8 (18.2)	18 (9.3)
50–59 years	6 (2.2)	2 (4.5)	5 (2.6)
Marital status			
Not married	141 (53.0)	18 (40.9)	100 (51.8)
Married	125 (47.0)	26 (59.1)	93 (48.2)
Training			
Nurse	134 (50.4)	26 (59.1)	103 (53.4)
Physician	132 (49.6)	18 (40.9)	90 (46.6)
Institution			
AKUH	81 (30.5)	14 (31.8)	68 (35.2)
LNH	63 (23.7)	8 (18.2)	36 (18.7)
CHK	44 (16.5)	5 (11.4)	29 (15.0)
JPMC	78 (29.3)	17 (38.6)	60 (31.1)
Work experience in health sector			
<1 year	43 (16.2)	6 (13.6)	18 (9.3)
1–5 years	128 (48.1)	16 (36.4)	91 (47.2)
6–10 years	55 (20.7)	9 (20.4)	48 (24.9)
11–15 years	24 (9.0)	6 (13.6)	24 (12.4)
16–20 years	12 (4.5)	7 (15.9)	10 (5.2)
>20 years	4 (1.5)	0 (0)	2 (1.0)
Employment sector			
Private	144 (54.1)	22 (50.0)	104 (53.9)
Public	122 (45.9)	22 (50.0)	89 (46.1)
Employment status			
Part time/temporary	67 (25.2)	7 (15.9)	45 (23.3)
Full time	199 (74.8)	37 (84.1)	148 (76.7)
Work between 6 PM and 7 AM (night shift)			
Yes	231 (86.8)	35 (79.5)	164 (85.0)
No	35 (13.2)	9 (20.5)	29 (15.0)
Number of staff present in the same work setting during more than 50% of work time			
None	3 (1.1)	1 (2.3)	3 (1.6)
1–5	60 (22.6)	9 (20.4)	41 (21.2)

Characteristics	n (%) for Entire Sample (n = 266)	n (%) for Victims of Physical Attack* (n = 44)	n (%) for Victims of Verbal Abuse† (n = 193)
6–10	81 (30.4)	11 (25.0)	54 (28.0)
11–15	58 (21.8)	3 (6.8)	39 (20.2)
>15	64 (24.1)	20 (45.5)	56 (29.0)

AKUH = Aga Khan University Hospital; LNH = Liaquat National Hospital; CHK = Civil Hospital Karachi; JPMC = Jinnah Post Graduate Medical Center.

* Those who reported being physically attacked in the workplace in the last 12 months.

† Those who reported being verbally abused in the workplace in the last 12 months.

Table 3**Characteristics of Workplace Violence Reported by Physicians and Nurses***

Characteristics	Physical Violence n (%) (n = 44)	Verbal Abuse n (%) (n = 193)
Weapon involved		
Yes	13 (29.6)	N/A
No	31 (70.4)	N/A
How often verbally abused in last 12 months		
All the time	N/A	26 (13.5)
Sometimes	N/A	130 (67.4)
Once	N/A	37 (19.1)
Is this a typical incident?		
Yes	31 (70.4)	155 (80.3)
No	13 (29.6)	38 (19.7)
Identity of attacker in the incident		
Patient	9 (20.4)	31 (16.1)
Relatives of patient	28 (63.6)	135 (69.9)
Staff member	3 (6.8)	14 (7.3)
Management/Supervisor	2 (4.6)	6 (3.1)
General public	2 (4.6)	7 (3.6)
Time of incident		
0700 to 1300	7 (15.9)	N/A
1301 to 1800	12 (27.2)	N/A
1801 to 2400	5 (11.4)	N/A
2400 to 0700	15 (34.1)	N/A
Do not remember	5 (11.4)	N/A
Could the incident have been prevented		
Yes	38 (86.4)	140 (72.5)
No	6 (13.6)	53 (27.5)
Any action taken to investigate the causes of the incident		
Yes	14 (31.8)	42 (21.8)
No	21 (47.7)	103 (53.3)
Do not know	9 (20.5)	48 (24.9)
Consequences for the attacker/abuser in the incident		
None	28 (63.6)	120 (62.2)
Verbal warning issued	7 (15.9)	13 (6.7)
Care of patient discontinued	2 (4.6)	2 (1.0)
Reported to police	2 (4.6)	2 (1.0)
Aggressor prosecuted	0 (0)	4 (2.1)
Others	2 (4.5)	4 (2.1)
Do not know	3 (6.8)	48 (24.9)

N/A = not applicable or not asked.

* All questions pertain to the last recalled incident of physical violence or verbal abuse.

Table 4

Mean Scores Regarding Worry about Violence in the Workplace and Effect of Physical Attack or Verbal Abuse on Mental Health

Characteristics	Worried about Violence in WP Mean (SD) n = 266*	Reporters of Physical Attack Bothered Since the Last Incident by: Mean (SD) n = 44*				Reporters of Verbal Abuse Bothered Since the Last Incident by: Mean (SD) n = 193*			
		Memories	Avoidance	Super-alertness	Everything is an Effort	Memories	Avoidance	Super-alertness	Everything is an Effort
Gender									
Female	3.4 (1.3)	2.3 (0.9)	2.1 (0.8)	2.7 (1.0)	2.5 (0.9)	2.4 (1.2)	3.2 (1.4)	2.6 (1.4)	2.6 (1.4)
Male	3.7 (1.2)	2.8 (1.5)	2.6 (1.0)	3.3 (1.3)	2.9 (1.2)	2.5 (1.0)	3.0 (1.3)	2.3 (1.1)	2.3 (1.1)
Age, years									
<30	3.3 (1.2)	2.4 (1.0)	2.1 (0.8)	2.9 (0.9)	2.5 (0.8)	2.5 (1.2)	3.0 (1.3)	2.1 (1.1)	2.1 (1.1)
30–39	3.9 (1.1)	3.1 (1.5)	2.7 (0.5)	3.2 (1.3)	2.5 (0.7)	2.6 (1.0)	3.4 (1.3)	2.8 (1.3)	2.8 (1.3)
40–49	4.2 (1.0)	2.0 (1.3) [†]	2.0 (1.3) [†]	2.4 (1.4) [†]	3.8 (1.6) [†]	1.8 (1.0)	2.7 (1.3)	3.0 (1.3)	3.0 (1.3)
50–59	4.5 (0.8) [†]	4.5 (0.7) [†]	2 (N/A) [†]	5 (N/A) [†]	3 (2.8) [†]	3.2 (0.4) [†]	3.4 (1.1) [†]	2.4 (1.1) [†]	2.4 (1.1) [†]
Marital status									
Not married	3.5 (1.2)	2.2 (0.8)	2.2 (0.9)	3.2 (0.7)	2.6 (0.8)	2.5 (1.2)	3.2 (1.4)	2.3 (1.3)	2.3 (1.3)
Married	3.7 (1.2)	2.9 (1.5)	2.4 (1.0)	2.9 (1.5)	2.8 (1.2)	2.4 (1.0)	3.0 (1.2)	2.6 (1.2)	2.6 (1.2)
Training									
Nurse	3.7 (1.2)	2.3 (1.0)	2.3 (0.7)	2.8 (0.9)	2.5 (0.8)	2.5 (1.2)	3.2 (1.3)	2.1 (1.1)	2.1 (1.1)
Physician	3.4 (1.2)	3.0 (1.5)	2.4 (1.2)	3.3 (1.5)	3.0 (1.3)	2.4 (1.0)	3.1 (1.3)	2.8 (1.2)	2.8 (1.2)
Institution									
AKUH	3.7 (1.2)	2.5 (1.4)	2.1 (0.6)	2.9 (1.3)	2.5 (1.2)	2.5 (1.1)	3.4 (1.3)	2.9 (1.3)	2.9 (1.3)
LNH	3.5 (1.4)	2.0 (0.7) [†]	2.1 (0.6) [†]	2.2 (0.9) [†]	2.4 (0.5) [†]	1.9 (1.0)	2.5 (1.1)	1.6 (0.6)	1.6 (0.6)
CHK	3.8 (1.1)	3.4 (1.8) [†]	3.2 (1.6) [†]	4.4 (0.9) [†]	3.4 (1.8) [†]	2.9 (1.2)	3.7 (1.1)	2.6 (1.2)	2.6 (1.2)
JPMC	3.4 (1.2)	2.7 (1.2)	2.5 (1.0)	3.0 (1.0)	2.8 (0.9)	2.5 (1.1)	2.9 (1.4)	2.3 (1.2)	2.3 (1.2)
Work experience in health sector									
<1 year	3.2 (1.3)	2.8 (0.7) [†]	2.3 (0.5) [†]	2.3 (1.2) [†]	2.7 (0.8) [†]	2.6 (1.1)	2.7 (1.6)	2.3 (1.2)	2.3 (1.2)
1–5 years	3.3 (1.3)	2.4 (1.1)	1.9 (0.6)	2.9 (0.6)	2.4 (0.8)	2.6 (1.3)	3.2 (1.3)	2.2 (1.1)	2.2 (1.1)
6–10 years	4.1 (1.0)	3.1 (1.7) [†]	3.1 (0.9) [†]	4.1 (1.0) [†]	2.2 (0.7) [†]	2.5 (0.8)	3.3 (1.2)	2.7 (1.2)	2.7 (1.2)
11–15 years	3.7 (1.0)	2.5 (1.5) [†]	2.6 (1.1) [†]	3.3 (1.4) [†]	3.4 (1.1) [†]	2.3 (1.2)	3.1 (1.3)	2.9 (1.5)	2.9 (1.5)

Characteristics	Worried about Violence in WP Mean (SD) n = 266*		Reporters of Physical Attack Bothered Since the Last Incident by: Mean (SD) n = 44*				Reporters of Verbal Abuse Bothered Since the Last Incident by: Mean (SD) n = 193*					
	Memories	Avoidance	Super-alertness	Everything is an Effort	Memories	Avoidance	Super-alertness	Everything is an Effort	Memories	Avoidance	Super-alertness	Everything is an Effort
16-20 years	2.1 (1.3) [†]	2.1 (1.3) [†]	2.1 (1.3) [†]	4.2 (1.5) [†]	2 (1.05)	1.7 (0.7)	2.3 (1.3)	2.8 (0.6)	2 (1.05)	1.7 (0.7)	2.3 (1.3)	2.8 (0.6)
>20 years	4.5 (1.0) [†]	-	-	-	2.5 (0.7) [†]	2 (1.4) [†]	3.5 (0.7) [†]	3.5 (2.1) [†]	2.5 (0.7) [†]	2 (1.4) [†]	3.5 (0.7) [†]	3.5 (2.1) [†]

WP = workplace; SD = standard deviation; AKUH = Aga Khan University Hospital; LNH = Liaquat National Hospital; JPMC = Jinnah Post Graduate Medical Center.

* Range: 1-5; 1 = Not at all; 2 = A little bit; 3 = Moderately; 4 = Quite a bit; 5 = Extremely.

[†] Fewer than 10 observations.

Table 5

Unadjusted and Adjusted Association of Respondent Characteristics with Reporting of Physical Attack and Verbal Abuse in the Last 12 Months

Characteristics	Reported Physical Attack in Last 12 Months		Reported Verbal Abuse in Last 12 Months	
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Male (compared to female)	0.98 (0.5–1.9)	0.95 (0.5–1.9)	0.86 (0.5–1.5)	1.05 (0.5–2.1)
Age (compared to < 30 years)				
30–39 years	1.32 (0.6–2.8)	1.21 (0.4–3.4)	3.39 (1.6–7.1) [†]	1.26 (0.4–3.7)
40–49 years	4.05 (1.5–10.9) [†]	4.90 (1.0–22.9) [*]	3.28 (1.0–11.6) [*]	0.69 (0.1–4.4)
50–59 years	3.29 (0.6–19.1)	2.91 (0.4–21.9)	2.73 (0.3–24.0)	0.85 (0.1–6.5)
Physicians (compared to nurses)	0.65 (0.3–1.3)	0.46 (0.2–1.0) [*]	0.64 (0.4–1.1)	0.83 (0.4–1.5)
Public sector hospitals (compared to private sector)	1.22 (0.6–2.3)	1.15 (0.6–2.3)	1.04 (0.6–1.8)	1.22 (0.6–2.3)
Work-experience (compared to < 1 year)				
1–5 years	0.88 (0.3–2.4)	0.82 (0.3–2.4)	3.41 (1.7–7.0) [†]	4.83 (2.0–11.7) [†]
More than 5 years	1.86 (0.7–5.0)	1.10 (0.3–4.2)	10.61 (4.4–25.4) [†]	13.4 (2.9–62.4) [†]
Full time employed (compared to part-time/temporary)	1.96 (0.8–4.6)	2.25 (0.9–5.6)	1.42 (0.8–2.6)	2.01 (0.9–4.3)
Work between 6 PM and 7 AM	0.51 (0.2–1.2)	0.67 (0.3–1.6)	0.51 (0.2–1.3)	0.51 (0.2–1.1)
Believe there are procedures for reporting WPV in hospital	0.97 (0.5–1.9)	0.75 (0.3–1.6)	3.02 (1.7–5.3) [†]	3.22 (1.6–6.5) [†]

OR = odds ratio; CI = confidence interval; WPV = workplace violence.

^{*} Significant at $p = 0.05$.

[†] Significant at $p = 0.01$.