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RESEARCH ARTICLE

Workplace violence against healthcare workers in rural health facilities of Bangladesh and their quality of life: A cross-sectional study

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ABSTRACT

Background: The prevalence of verbal and physical violence against healthcare workers (HCWs) is reportedly high in Bangladesh. We aimed to determine the prevalence and risk factors associated with violence against HCWs in Bangladesh.

Methods: This cross-sectional study was done in May-June 2021 among 378 physicians and nurses working in 19 randomly selected rural government health facilities. A self-administered validated Bangla version of the WHOQOL-BREF questionnaire on workplace violence (WPV) and the quality of life (QoL) was used. Multiple logistic regression analyses were done to find out the independent risk factors of WPV.

Results: The prevalence of overall WPV was about 48.0% (psychological 46.6%, physical 5.0%, and sexual harassment 1.9%). However, the WPV reporting rate was very low (27.8%). Being a male (aOR= 2.18; 95% confidence interval: 1.22–3.90) and a physician (aOR = 2.93; 95% CI: 1.56–5.52) had increased the likelihood of experiencing WPV. HCWs who were encouraged to report WPV were less likely to experience WPV (aOR = 0.36; 95% CI: 0.18–0.70). Study participants exposed to WPV had significantly lower QoL (P<0.01) in all the domains of WHOQOL-BREF (physical, psychological, social, and environmental).

Conclusion: The study findings revealed that half of the HCWs working at rural government health facilities experienced WPV, which warrants proper investigation to adopt effective measures to reduce future occurrence. Moreover, the QoL of HCWs working in the aforementioned health facilities was significantly influenced by exposure to WPV.

Keywords: *Bangladesh; healthcare workers; healthcare professionals; workplace violence; quality of life.*

INTRODUCTION

Workplace violence (WPV) is a widely reported significant occupational hazard that has become a global phenomenon in recent times.[1] Its occurrence in the health sector is four times higher than in other sectors.[2] The problem has spread across the continents,[3] and it has brought unprecedented challenges to the healthcare system, especially in developing countries.[4] According to the International Labour Organization and World Health Organization definition of violence, we considered kicking, slapping, stabbing, shooting, shoving, biting, and pinching as physical violence; verbal abuse, bullying/mobbing, harassment, and threats as psychological/emotional violence; and any unwanted and unwelcome sexual approaches, requests for sexual favours, or other verbal or physical harassment of sexual nature that lead the person to be

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HIGHLIGHTS

1. About 48% of HCWs working at rural government facilities in Bangladesh reported having experienced workplace violence (psychological, physical or sexual).
2. Psychological violence is more common than other forms of violence.
3. HCWs experiencing workplace violence had significantly lower quality of life.
4. Three in every ten (28%) HCWs would report to higher authority for legal actions against the occurrence of any violent incident.
5. Being a male, physician and years of working experience in the health sector were factors associated with experiencing WPV.

threatened, humiliated, or embarrassed as sexual harassment.[5] WPV against healthcare workers (HCWs) can cause ill health and impact greatly on work functioning, and is thus particularly important to address, as it can affect patient outcomes.[6]

A meta-analysis conducted by Liu *et al.* (2019) showed that, at the global level, about 62% of HCWs were exposed to some form of WPV, whereby region-specific prevalence was the highest in Australasia (70.9%), followed by North America (67.3%), Asia (64.9%), Africa (59.2%), and Europe (48.1%).[1] In the South Asian context, Kaur *et al.* (2020) found that more than 77% of physicians in India had experienced workplace violence at least once during their career, while more than 38% of doctors reported having experienced any form of violence in the last six months in Pakistan.[7, 8] In Bangladesh, 67.3% of physicians working in public tertiary hospitals reported experiencing violence where psychological violence is more frequent than physical or sexual violence.[9] Being a male, aged 30 years or younger, placement in surgery and allied departments, marital status, and public sector healthcare worker were found as significant factors associated with workplace violence in Bangladesh.[9, 10, 11] In several studies, non-physical violence, including verbal and psychological violence, was found to be more prevalent than physical violence.[1, 8, 12] In their analysis of news media reports on WPV against HCWs in Bangladesh, Hasan *et al.* (2018) found that in 96% of the cases, violence was physical. Another content analysis revealed that most events occured at night, in government facilities and entry-level doctors such as emergency doctors or intern doctors were the common victims of WPV.[13] Recently, many health workers have been seriously assaulted in Bangladesh at their workplace, and the incidence of violence has substantially increased both in the emergency medicine and outpatient settings.[14] As a consequence of WPV, 14.10% of physicians from public and private facilities were physically injured and 22.44% were absent from their respective workplaces.[15]

Apart from physical injuries, WPV incidents can result in a lack of job interest, productivity and confidence.[16] Furthermore, WPV carries negative psychological consequences such as anxiety, depression, and post-traumatic stress disorder (PTSD).[17] Wang *et al.* (2020) conducted their study in China and noted that HCWs were eight times more likely to have psychological problems when abused in the workplace than elsewhere.[18] Moreover, S. Z. Yang *et al.* (2019) reported that HCWs in China were afraid of dealing with emergency patients, abstained from work, and desired to resign due to WPV.[19]

Due to these adverse outcomes, violence can directly impact the quality of life (QoL) of an HCW.[20] Xie *et al.* (2021) found that QoL among HCWs exposed to WPV was poorer compared to those not exposed to WPV.[21] WPV against HCWs is often reported in Bangladeshi media, and studies often have covered WPV against physicians working in public and private tertiary hospitals. However, it was evident that primary healthcare settings experienced more violence than other healthcare facilities.[13] Therefore, this study aimed to address the prevalence of WPV against HCWs working in rural healthcare facilities in Bangladesh and investigate associated risk factors with it.

METHODS

Study design and settings

This cross-sectional study included physicians and nurses of Upazila Health Complexes (UHCs) in Bangladesh. In UHCs, there are three tiered physicians: Upazila health and family planning officers (UH&FPO) consultants and assistant surgeons.

Bangladesh is divided into eight administrative divisions and there are 64 districts in total. We randomly selected one district from each division. Afterwards, we randomly selected three upazila (sub-districts) from each selected district. In every upazila, there is a government health facility, namely UHC. As a result of this strategy, 24 UHCs were selected for data collection.

Data collection tool

A semi-structured self-administered questionnaire was developed for this study to obtain pertinent socio-demographic characteristics, workplace-related information, history of WPV, and data on QoL from the participants. Socio-demographic characteristics included age, sex, marital status, professional identity (physician, nurse), designation, and work experience (years). HCWs' workplace-related information included the types of patients they treated, the number of staff per shift, and concerns regarding WPV and the violence reporting system. Questions on WPV included experiences of physical violence, psychological/ emotional violence, and sexual harassment, along with witnessing violence. Participants were also asked about the frequency of such experiences, the perpetrator, and the place of occurrence.

The validated Bangla version of World Health Organization Quality of Life Bref (WHO-QoL-BREF) was used to assess the QoL of HCWs.[22, 23] This tool consists of 26 items, whereby 24 items address four QoL domains: physical health, psychological health, social relationships, and environment. The remaining two items probe into the respondents' perception of QoL and satisfaction with their health. All items require responses on a 5-point Likert scale.

The domain scores are scaled in a positive direction (i.e., higher scores denote a higher quality of life) and the mean score of items within each domain is used to calculate the domain score. Mean scores are then multiplied by 4 to make the domain scores comparable with the scores used in the WHOQOL-100. Raw scores for each domain were obtained and transformed on a scale from 0 to 100 using the SPSS software syntax provided in the generic version of the assessment tool.[22] The questionnaire was pre-tested within the HCWs of a UHC that was outside our sampled centres.

Data collection procedure

Data were collected from May to June 2021 whereby questionnaires and detailed instructions on their completion were sent to the UH&FPOs of the selected UHCs in sealed envelopes. The UH&FPOs later distributed the self-administered questionnaires among the HCWs at their respective facilities. Upon completion, HCWs submitted their questionnaires to the UH&FPO, which were then mailed back to the research team at the Department of Public Health and Informatics, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. The questionnaire did not contain any personal information to ensure participants' confidentiality and anonymity. No incentives were given to participants, and their participation was voluntary.

Statistical analyses

Descriptive analyses were conducted to obtain the frequencies of participants' socio-demographic and workplace-related variables. For continuous variables, mean and standard deviation (SD) were reported, whereas logistic regressions were performed to predict the association of WPV with participants' socio-demographic and workplace-related variables. The associations were presented as crude odds ratio (cOR) and adjusted odds ratios (aOR) with a 95% confidence intervals (CI). An independent sample *t* test was performed to obtain any statistically significant differences between the mean of QoL domain scores of those exposed and those not exposed to WPV. SPSS software V. 21 was used statistical analyses, $P < 0.05$ was considered statistically significant.

Ethical considerations

All respondents carefully read and signed the consent form outlining study objectives and agreed to participate in the study upon understanding that the data gathered would be used for solely research purposes. Privacy and anonymity of the participants were maintained. Participants were also informed about their rights to withdraw from the study at any time. No monetary incentives were provided to the participants to take part in the study.

RESULTS

Upon prior consultation with each who serves as the administrative head of the UHC, regarding the total number of physicians and nurses working in the UHCs, we mailed 600 questionnaires to the sampled centres and received 429 in return from 19 UHCs **(FIGURE 1)**. Due to the ongoing COVID-19 pandemic, we could not receive data from the remaining five UHCs within the data collection period. After data cleaning, 378 questionnaires were considered valid and were included in the analysis.

The mean (SD) age of the participants was 34.8 (8.4) years, and the majority of the respondents were female (64.6%), and married (83.6%). This study included 198 (52.4%) physicians (most of them were assistant surgeons, n=163) and 179 (47.4%) nurses. The majority of the participants dealt with adult females (88.9%) patients followed by adult males (79.9%). The mean (SD) duration of work experience in the healthcare sector was 8.7 (8.9) years.

Nearly 50% of the HCWs mentioned experiencing at least one form of violence in the workplace during their professional career, which mainly involved psychological violence (46.6%), while physical violence (5%) and sexual harassment (1.9%) were less common.

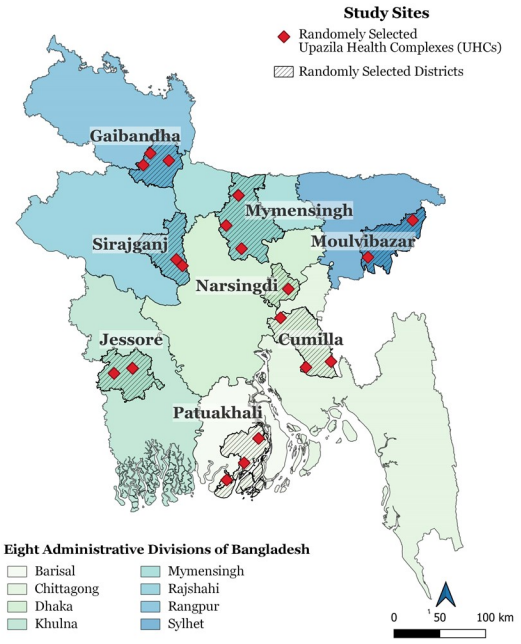

FIGURE 1 Nineteen selected Upazila Health Complexes located in eight administrative divisions of Bangladesh

In addition, 34.7% of the participants reported witnessing violence at their workplace **(TABLE 1)**.

Although 50.3% of the study sample expressed worry regarding WPV, 92% of the health workers reported that they had the opportunity to report WPV to a higher authority. It is also encouraging that around 73% of the participants indicated that they were encouraged to report WPV at their workplace, while 72% were aware of the reporting process **(TABLE 1)**. However, only 27.8% of the abused HCWs reported their experiences of WPV to the authorities.

TABLE 1 Frequency of various types of workplace violence (n=378)

	Frequency	Percentage	95% confidence interval
Psychological violence (n = 361)	176	46.6	43.5–54.0
Physical violence (n = 364)	19	5.0	3.2–8.0
Sexual harassment (n = 335)	7	1.9	0.8–4.3
Witnessing violence (n = 353)	131	34.7	32.1–42.4

*The number of subjects differs because of missing values or question-specific non-response.
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Approximately 40% and 5% of HCWs, respectively, indicated that they had been abused psychologically and physically by patients or their relatives at their workplace. Colleagues and those at higher positions of authority were the next most prevalent perpetrators of psychological abuse. Only one HCW reported being physically attacked by bystanders who were not patients or their relatives. However, respondents were more likely to experience sexual harassment by bystanders (0.8%) than colleagues (0.5 %).

Findings yielded by the unadjusted bivariate analysis model showed that younger HCWs were more vulnerable to experiencing violence than HCWs aged above 40 years (<30 years: cOR = 2.28, 95% CI: 1.28-4.06; 30-40 years: cOR = 1.98, 95% CI: 1.15-3.41).

However, this difference was not statistically significant when the adjusted multivariate regression analysis model was applied.

According to the adjusted model, males (AOR = 2.18; 95% CI: 1.22-3.90) and physicians (AOR = 2.93; 95% CI: 1.56-5.52) were more likely to experience violence, while HCWs encouraged to report WPV were less likely to experience violence (AOR = 0.36; 95% CI: 0.18-0.70, as indicated in **TABLE 2**.

Although the duration of work experience in the health sector did not emerge as a significant protective factor from multivariate analysis, it became statistically significant when the unadjusted model was adopted, whereby HCWs having less than five years of work experience were more vulnerable to violence than their more experienced colleagues (cOR = 1.84; 95% CI: 1.12-3.03), as indicated in **TABLE 2**.

TABLE 2 Association of participants of characteristics with workplace violence (WPV) experience

Variables	Number (%)	cOR (95% CI)	aOR (95%CI)
Age (n = 373)			
<30	122 (32.3)	2.28** (1.28–4.06)	1.34 (0.44–4.05)
30-40	167 (44.2)	1.98* (1.15–3.41)	0.76 (0.29–1.96)
>40	84 (22.2)	Ref.	Ref.
Sex (n = 378)			
Male	134 (35.4)	3.33** (2.14–5.18)	2.18** (1.22–3.90)
Female	244 (64.6)	Ref.	Ref.
Profession (n = 377)			
Physician	198 (52.4)	3.44** (2.25–5.26)	2.93** (1.56–5.52)
Nurse	179 (47.4)	Ref.	Ref.
Years of work experience in the health sector (n = 364)			
<5	162 (42.9)	1.84* (1.12–3.03)	0.73 (0.28–1.95)
5-10	97 (25.7)	1.88* (1.07–3.29)	1.64 (0.65–4.12)
>10	105 (27.8)	Ref.	Ref.
Number of staff present while working (n = 365)			
None	27 (7.1)	Ref.	Ref.
1–5	261 (69.0)	0.56 (0.25–1.26)	1.00 (0.37–2.54)
6–10	53 (14.0)	0.39 (0.15–1.01)	0.76 (0.24–2.38)
Over 10	24 (6.3)	0.70 (0.23–2.13)	1.43 (0.38–5.39)
Opportunity available to report WPV to a higher authority (n = 365)			
Yes	348 (92.1)	0.66 (0.25–1.78)	1.51 (0.33–6.91)
No	17 (4.5)	Ref.	Ref.
Aware of the reporting process			
Yes	272 (72.0)	0.69 (0.42–1.14)	0.89 (0.48–1.64)
No	80 (21.2)	Ref.	Ref.
Encouraged at work to report WPV			
Yes	276 (73.0)	0.46** (0.27–0.77)	0.36** (0.18–0.70)
No	80 (21.2)	Ref.	Ref.

Ref. indicates the reference category; cOR, crude odds ratio; aOR, adjusted odds ratio; CI, confidence interval.
*P<0.05; ** P<0.01

TABLE 3 WHOQOL-BREF domain-wise scores and differences by workplace violence (WPV) exposure

WHOQOL-BREF Domains	Exposed to WPV mean (SD)	Not exposed to WPV mean (SD)	Mean difference (95% CI)	*P*
Physical	69.7 (11.8)	73.6 (10.4)	3.88 (1.60–6.16)	0.001
Psychological	58.3 (13.4)	64.5 (12.2)	6.26 (3.63–8.88)	0.000
Social	70.3 (13.2)	74.6 (12.6)	4.37 (1.7-47.00)	0.001
Environmental	48.8 (13.4)	57.4 (10.5)	8.57 (6.12–11.02)	0.000

WHOQOL-BREF indicates World Health Organization Quality of Life Bref; SD, standard deviation.

The overall QoL score among HCWs experiencing violence was significantly lower relative to those who did not have such experience. Among the four QoL domains, lower scores were obtained for the psychological and environmental domains compared to the physical and social domains **(TABLE 3)**.

DISCUSSION

About 48% of the HCWs in the rural government healthcare facilities in Bangladesh that took part in this study experienced WPV. This rate is relatively lower than the average prevalence of WPV in other South Asian countries, including India at 77.3%[7] and Nepal at 65%.[24] Previous attempts to address WPV against HCWs were made in tertiary healthcare settings in Bangladesh. A hospital-based study in public and private healthcare facilities in Bangladesh indicated a prevalence of 43% which is lower than the prevalence found in the current study.[10] Meanwhile, another study conducted in a public tertiary healthcare setting showed a WPV prevalence of 67.3%.[9]

However, the WPV prevalence found in this study could simply be the tip of the iceberg, as the percentage of WPV reporting (28%) to higher authorities was low, likely due to the absence of positive reporting culture and political influence. Political motivation, as well as recommendations from politicians or senior government officials, often plays a vital role in promoting higher-level HCWs in rural healthcare facilities in Bangladesh.[25] Similarly, in Pakistan, most HCWs did not report violent incidents due to deeming it non-essential or futile or being afraid of negative repercussions for their job and personal life as a retaliation for reporting.[26, 27] In a Bangladeshi study, it

was seen that more than 60% of victims claimed that barely any action was taken to investigate the incident and additionally, 44% reported that the perpetrators faced no consequences.[10]

According to our study participants, patients or their relatives were the most likely perpetrators of WPV. Corresponding to this finding, evidence exists that identified two-thirds of perpetrators of WPV in a healthcare setting are the relatives of the patients.[9] This is not surprising, given that relatives of the patients tend to react violently when patient management does not meet their expectations. Similarly, patients or their relatives were identified as perpetrators against HCWs in Nepal.[24] Miscommunication and unrealistic perceptions of standard healthcare were found to be major causes of violence in healthcare settings.[27]

The study found that 5% of the HCWs experienced physical violence, and 46.6% experienced psychological violence. Meanwhile, the prevalence of physical violence in tertiary healthcare settings of Bangladesh varied from 12.3% to 13.5%.[9, 11] On the other hand, the prevalence of physical violence in our study is similar to the findings obtained in Chinese healthcare settings, where the prevalence varied from 4.6% to 5.5%.[19, 28] However, it was about half of the prevalence (11.3%) reported for Nepali HCWs.[24] In contrast, the prevalence of psychological violence in our study was higher compared to the 43.7% reported by Jia *et al.* (2020) in the Chinese healthcare context.[28] The psychological violence in a Bangladeshi study was almost double (84.5%) compared to the findings of this study.[9] In this study, 1.9% of HCWs were found to have been sexually harassed at work, which was a lower rate than that (3%) reported for Saudi Arabian HCWs.[29] However, the prevalence of sexual violence was almost similar to the study conducted in public tertiary healthcare settings in Bangladesh which is 2%.[9]

Our analyses further revealed that male HCWs were twice as likely to face WPV compared to their female colleagues, concurring with evidence from other settings.[30, 31] Our male respondents were also more exposed to physical violence.[32] This can be attributed to the Bangladeshi social structure as physical violence against non-partner women is culturally proscribed and less common. Another possible explanation is that female HCWs are more capable of handling these hostile situations. We also found that physicians were almost three times more likely to experience WPV than nurses which is similar to a previous study conducted in China.[33] However, other studies revealed that nurses and women were more vulnerable to experiencing violence than physicians and men.[34, 35, 36] In Bangladesh, people have high expectations from physicians as they are the main operators of hospital settings. Thus, patients are more likely to vent their frustration to physicians than nurses and other health workers.[32]

Approximately one-third of the surveyed HCWs witnessed violence at work. In several studies, witnessing violence at work was identified as a risk factor for developing depressive symptoms and post-traumatic stress disorder among HCWs.[37, 38] Previous studies further indicated that entry-level HCWs, especially those with less than 10 years of work experience in the health sector, were most likely to experience WPV,[39] concurring with our results. This finding might be due to a relative lack of professional maturity and a less developed capability to handle potentially hazardous situations compared to more experienced HCWs.[30]

Finally, HCWs exposed to WPV had a substantially lower QoL in all four domains (physical, psychological, social, and environmental) relative to those not exposed to WPV, aligning with the results obtained by Xie *et al.* (2021) in China.[21] Lower QoL is often associated with job dissatisfaction and negative self-perceived health, along with moderate to severe anxiety, and depression.[40]

Limitations

As the present study was conducted through a self-administered tool, the possibility of data being affected by the response and recall bias could not be eliminated. In addition, all our study participants worked at Upazila Health Complexes (UHCs) and their views might not represent those of staff at other healthcare facilities in

Bangladesh. The data was collected during the COVID-19 pandemic period; however, the COVID-19 situation was not considered for this study.

Conclusion

This study revealed a high prevalence of WPV among HCWs working at UHCs. This could, however, be only the tip of the iceberg, as we noted low WPV reporting rates to relevant authorities. Alongside physical injuries, WPV comes with psychological consequences (e.g., depression, post-traumatic stress disorder), which was reflected in a relatively lower QoL among HCWs exposed to WPV. Considering HCWs as one of the driving forces of the healthcare system, it is of substantial importance to properly investigate WPV and adopt effective measures considering its risk factors. Alongside HCWs, the authority of healthcare facilities should be equipped with the necessary skills to identify potential risk factors of aggressive behaviour and take appropriate steps to prevent any unwelcoming incidents that may affect the quality of care. Proper counselling of relatives of the patients should be considered with high importance as the majority of WPV incidents in healthcare settings are initiated by them. Additionally, it is also necessary to investigate the underlying causes for HCWs not reporting violent incidents to appropriate authorities.

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Author contributions

Conception and design: MAH. *Acquisition, analysis, and interpretation of data:* MAH, AHK, SM, MIIT, MEU. *Manuscript drafting and revising it critically:* MAH, ZAR, AHK, SM, MIIT, MEU, MMHK, MTI. *Approval of the final version of the manuscript:* MAH, ZAR, AHK, SM, MIIT, MEU, MMHK, MTI. *Guarantor of accuracy and integrity of the work:* MAH, SM, MMHK.

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Conflict of interest

We do not have any conflict of interest.

Ethical approval

Approval of the research protocol: The study protocol was approved by the BSMMU Institutional Review Board. Ethics approval number: No. BSMMU/2021/4935

Data availability statement

The authors confirm that the data supporting the findings of this study are shared upon request of the corresponding author.

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