Study on the Current Status and Influencing Factors of Workplace Violence to Medical Staff in Intensive Care Units

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Objective. To explore the current status and influencing factors of workplace violence to medical staff in intensive care unit (ICU).

Methods. A total of 230 medical staff in the ICU of Hengyang city were enrolled as the research subjects between October 2021 and January 2022. The situations and characteristics of workplace violence were collected with questionnaires. The influencing factors of workplace violence were analyzed by univariate and multivariate logistic regression analyses. Results. The incidence of workplace violence to ICU medical staff was 40.43%. There were 18.70% of them threatened, 13.48% with verbal violence, 10.00% with physical violence, and 7.39% with sexual harassment. Of the 114 workplace violence incidents, there were 69 (59.65%) during the day, 101 (88.60%) only with medical staff on the spot, and 91 (79.82%) with male perpetrators (mainly on patients and their families). The main reasons for violence were verbal miscommunication (15.79%), too long waiting time for treatment (27.19%), and unsatisfactory treatment effect (38.60%). The main coping style of medical staff after suffering violence was patient explanation (64.04%). Multivariate regression analysis showed that working years ≤5 years (OR = 2.093, P = 0.009) and weekly working time >45 h (OR = 2.127, P = 0.022) were independent risk factors of workplace violence to ICU medical staff. Conclusion. The working years ≤5 years and weekly working time >45 h are high-risk factors of workplace violence to ICU medical staff. The hospital can prevent and control workplace violence based on the high-risk factors to reduce the incidence of workplace violence.

1. Introduction

Workplace violence refers to abuse, threats, humiliation, or attacks in the workplace, including verbal and physical violence. Research indicates that workplace violence is one of the major health risk factors for people working in the workplace and that such behaviors can lead to a variety of psychological and emotional conditions that affect job quality [1, 2]. Hospitals are places where workplace violence occurs frequently. According to relevant statistics, more than 50% of emergency nurses in the world have experienced workplace violence and most of the violence comes from patients [3, 4]. However, most medical staff adopt negative coping styles to deal with workplace violence, which has caused some harm to their professional attitude and mental health [5]. Studies by Yuan et al. pointed out that workplace violence has a serious adverse effect on the mental health of the medical staff, causing nurses to produce psychological stress reactions such as anger, depression, and anxiety [6]. In addition, the frequent occurrence of psychological violence can also produce qualitative changes, resulting in the decline of the overall job satisfaction rate of medical staff, resulting in the deterioration of hospital medical quality. Survey data showed that young nurses under 35 were more likely to experience workplace violence when working alone due to lack of experience [7, 8]. Most of the current research focuses on the emergency department, psychiatry, and other groups, and there are few research studies specifically on the workplace violence of intensive care unit (ICU) medical staff. The ICU is a high-risk area for workplace violence in hospitals because patients are critically ill, have a high mortality rate, and are prone to delirium; most of their
family members have anxiety, irritability, and other negative emotions, and the probability of workplace violence is also greatly increased [9]. This study analyzes the current situation and characteristics of workplace violence suffered by medical staff in intensive care units in order to provide a basis for guiding targeted prevention and control measures.

2. Materials and Methods

2.1. General Information. From October 2021 to January 2022, 230 medical staff in the ICU of Hengyang city were selected as the research subjects. All the enrolled personnel were 27 males and 203 females; their ages ranged from 22 to 45 years, with an average of (28.76 ± 4.83) years. In terms of education background, 36 research subjects graduated from junior colleges, 161 were undergraduates, 27 had a master’s degree, and 6 were doctors. 122 subjects have primary titles, 82 subjects have intermediate titles, and 26 subjects have senior titles; 100 subjects have worked for more than 5 years, and 130 subjects have worked for ≤5 years; 114 subjects were unmarried, and 116 were married; 31 cases were the only child in their families, while 199 subjects were opposite; 171 cases had weekly working hours >45 h, and 59 cases had ≤45 h. This study complies with the requirements of the World Medical Association Declaration of Helsinki.

2.2. Inclusion Criteria. The inclusion criteria were as follows: (1) regular employees working in the intensive care unit of our hospital; (2) ICU medical staff who have access to patients; (3) those who gave informed consent and voluntary participation in the survey.

2.3. Exclusion Criteria. The exclusion criteria were as follows: (1) interns in the ICU; (2) those who are leaving the job for more than 3 months due to maternity leave and other reasons; (3) medical staff in the neonatal ICU; (4) those who have provided incomplete questionnaire data; (5) those who have worked in the ICU for less than 1 year.

2.4. Methods. All participants were surveyed using a questionnaire on workplace violence made by our hospital. The questionnaire included age, gender, education background, job title, length of service, marital status, if they were the only child in their families, and weekly working hours. The characteristics of workplace violence suffered by ICU medical staff were counted and recorded, including the time of occurrence, time being alone, gender of the perpetrator, age of the perpetrator, identity of the perpetrator, reasons for the violence, and ways of coping with the violence.

2.5. Observation Indicators. The observation indicators included the following: (1) statistical analysis of workplace violence suffered by ICU medical staff; (2) statistical analysis of the characteristics of workplace violence incidents suffered by ICU medical staff; (3) univariate analysis of the influencing factors of workplace violence among ICU medical staff; (4) multivariate analysis of independent influencing factors of workplace violence incidents suffered by ICU medical staff.

2.6. Statistical Processing. SPSS 18.0 was used to process data, count data were expressed as percentage (%), χ² test was conducted, and univariate and multivariate logistic regressions were used to analyze the influencing factors of workplace violence suffered by ICU medical staff. P < 0.05 shows that the difference is statistically significant.

3. Results

3.1. Workplace Violence Suffered by ICU Medical Staff. Among the 230 ICU medical staff, 93 (40.43%) staff suffered workplace violence, 18.70% staff suffered threats, 13.48% staff suffered verbal violence, 10.00% staff suffered physical violence, and 7.39% staff suffered sexual harassment. A total of 114 workplace violence incidents occurred, as shown in Table 1.

3.2. Characteristics of Workplace Violence Incidents Suffered by ICU Medical Staff. Among the 114 workplace violence incidents, 69 (59.65%) occurred during the day, 101 (88.60%) medical staff were present alone, and 91 (79.82%) perpetrators were male, and the perpetrators were mainly patients and their families. The main reasons for the violence were wrong verbal communication (15.79%), long time waiting for treatment (27.19%), and unsatisfactory treatment effect (38.60%). The main coping method of the medical staff after violence was patient explanation (64.04%), as shown in Table 2.

3.3. Univariate Analysis of the Influencing Factors of Workplace Violence That ICU Medical Staff Suffered. According to the workplace violence suffered by the ICU medical staff, they were divided into a violence group and a nonviolence group. There was a statistically significant difference between the two groups of medical staff in terms of working years and weekly working hours (P < 0.05). There was no statistically significant difference in gender, age, education background, job title, and marital status if they were the only child in their families (P > 0.05), as shown in Table 3.

3.4. Multivariate Analysis of the Influencing Factors of Workplace Violence That ICU Medical Staff Suffered. Assigning scores to the variables with statistical significance in Table 3, violence group = 1, nonviolence group = 0; length of service > 5 years = 0, length of service ≤5 years = 1, weekly working hours >45 h = 1, and weekly working hours ≤45 h = 0 and using multivariate logistic analysis, working age ≤5 years (OR = 2.093, P = 0.009) and weekly working time >45 h (OR = 2.127, P = 0.022) were independent risk factors for ICU medical staff suffering workplace violence, as shown in Table 4.
4. Discussion

Hospital workplace violence has become an important health problem that endangers the physical and mental health of medical staff worldwide [10]. According to the report of Indian Medical Association, 75% of doctors have experienced violence, while ICU accounts for nearly half of the total, and ICU medical staff face such incidents almost every day [11]. Therefore, how to optimize the diagnosis and treatment process, close the doctor-patient relationship, and then prevent the violence in the hospital workplace have become the key and difficult problem facing the hospital construction.

In this study, 40.43% of ICU medical staff suffered from workplace violence, which is similar to what Chu Haitao et al have found [12]. Among them, 18.70% had experienced threats, 13.48% had experienced verbal violence, 10.00% had experienced physical violence, and 7.39% had experienced sexual harassment, indicating that threats and verbal violence were the main types of workplace violence in the ICU. Patients and their family members used these irrational ways to protect their rights, which showed that the hospital’s relevant management and national rights protection laws and regulations were weak. When medical staff are busy or exhausted and fail to meet the requirements of patients and their family members in time, patients and their families are prone to emotional agitation, which in turn leads to violent incidents. Therefore, violence in the ICU workplace mainly occurred during the daytime, which is the peak period for family visits of patients and the main time for medical staff to check the condition of patients. Previous research have shown that refusing the unreasonable demands of patients or their family members is the main reason why medical staff are subjected to violence in hospital workplaces, which is related to the imbalance between the supply and demand of medical services in the country [13]. 88.60% of the workplace violence occurred when medical staff were alone, prompting medical staff to be more vigilant and try to avoid ICU workplace violence caused by vulnerable situations such as being alone. Most of the perpetrators were middle-aged men. Because the men at this stage bear the dual pressures of work and life, they may be in adverse states such as anxiety and irritability for a long time and have poor tolerance for complicated medical procedures, long-time queuing examination, unsatisfactory treatment effect, etc. Therefore, such patients and their family members are more likely to be triggered by violence.

| Table 1: Workplace violence suffered by ICU medical staff. |
|-----------------------------------------------------------|
| Type of violence | Number of staff | Composition ratio (%) |
|------------------|-----------------|------------------------|
| Threat           | 43              | 18.70                  |
| Verbal violence  | 31              | 13.48                  |
| Physical violence| 23              | 10.00                  |
| Sexual harassment| 17              | 7.39                   |
| Total            | 93              | 40.43                  |

| Table 2: Characteristics of workplace violence incidents suffered by ICU medical staff. |
|--------------------------------------------------------------------------------------------|
| Characteristics of workplace violence incidents | Case | Composition ratio (%) |
|--------------------------------------------------|------|-----------------------|
| Time of occurrence                                |      |                       |
| Day shift                                        | 68   | 59.65                 |
| Night shift                                      | 39   | 34.21                 |
| After work                                       | 7    | 6.14                  |
| If they were present alone                        |      |                       |
| Yes                                              | 101  | 88.60                 |
| No                                               | 13   | 11.40                 |
| Gender of perpetrators                            |      |                       |
| Male                                             | 91   | 79.82                 |
| Female                                           | 23   | 20.18                 |
| Age of perpetrators                              |      |                       |
| <18 years old                                    | 1    | 0.88                  |
| 18~40 years old                                  | 13   | 11.40                 |
| 41~60 years old                                  | 74   | 64.91                 |
| >60 years old                                    | 26   | 22.81                 |
| Patients                                         | 60   | 52.63                 |
| Identity of perpetrators                         |      |                       |
| Family members of patients                        | 49   | 42.98                 |
| Other people                                      | 5    | 4.39                  |
| High treatment costs                             | 9    | 7.89                  |
| Death of patients                                | 12   | 10.53                 |
| Reason for workplace violence                    |      |                       |
| Wrong verbal communication                       | 18   | 15.79                 |
| Long waiting time for treatment                  | 31   | 27.19                 |
| Unsatisfactory treatment effect                  | 44   | 38.60                 |
| Patient explanation                              | 73   | 64.04                 |
| Coping method                                    |      |                       |
| Language warning                                 | 28   | 24.56                 |
| Terminating treatment                            | 2    | 1.75                  |
| Calling the police/prosecuting                   | 11   | 9.65                  |
Wang et al. found that positive coping and negative coping had a great impact on the psychological stress level of Chinese medical staff and played a mediating role in stress perception and psychological distress [14]. Through a survey of Chinese nurses, Ding et al. found that negative coping played a mediating role between self-efficacy and emotional exhaustion and had a negative effect on the degree of emotional exhaustion of Chinese medical staff [15]. In this study, the main coping method of medical staff after being subjected to violence was patient explanation. The main reason is that this method can help hospitals establish a safe and orderly working environment. But the downside is that it will put enormous pressure on medical staff. Under the influence of the violence of patients and their family members, the ICU medical staff are prone to anxiety, depression, and other negative psychology and may even develop posttraumatic stress disorder without timely intervention. However, only 9.65% of medical staff chose to report to the police/public prosecution, indicating that the hospital’s alarm channel was not smooth and the hospital needed to strengthen the violence prevention equipment, such as monitors and alarms, and should also add relevant departments to solve violent incidents to facilitate medical staff to seek help and resolve contradictions.

Medical staff with short working experience are inexperienced, they have less participation in hospital-related safety training, and they have insufficient understanding of the regulations for preventing workplace violence. In addition, frequent medical troubles and tense doctor-patient relationship in recent years have led to a significant increase in the risk of hospital violence among medical staff. In this case, the medical staff do not have enough time to form a good doctor-patient relationship with patients, and communication between the two parties is difficult, which increases the probability of workplace violence in the ICU. The study by Liu Yuan et al. found that job burnout was one of the factors that caused the tension between doctors and patients [16]. So our study showed that working age ≤5 years and weekly working hours >45 h were independent risk factors for ICU medical staff in experiencing workplace violence. In addition, the medical staff have been in a tense environment between doctors and patients for a long time, and they are more vigilant for medical patients, which greatly reduces the contact and communication between doctors and patients and further increases the risk of hospital violence [17].

To sum up, length of service ≤5 years and weekly working hours >45 h are high-risk factors for the

| Indicator | β   | SE  | Wald $\chi^2$ | OR   | 95% CI          | P   |
|-----------|-----|-----|--------------|------|-----------------|-----|
| Length of service (≤5 years vs >5 years) | 0.738 | 0.282 | 6.839 | 2.093 | 1.203–3.639 | 0.009 |
| Weekly working hours (>45 h vs ≤45 h) | 0.755 | 0.331 | 5.214 | 2.127 | 1.113–4.066 | 0.022 |

**Table 3: Univariate analysis of the influencing factors of workplace violence that ICU medical staff suffered.**

| Item                                      | n  | Violence group (n = 93) | Nonviolence group (n = 104) | $\chi^2$ | P   |
|-------------------------------------------|----|------------------------|-----------------------------|----------|-----|
| Gender                                    |    | Case Proportion        | Case Proportion             |          |     |
| Male                                      | 27 | 8                      | 8                           | 1.483    | 0.223 |
| Female                                    | 203| 85                     | 91.40                       | 86.13    |     |
| Age (year)                                |    |                        |                             |          |     |
| >30                                       | 60 | 28                     | 30.11                       | 23.36    |     |
| ≤30                                       | 170| 56                     | 69.89                       | 76.64    |     |
| Education background                      |    |                        |                             |          |     |
| Junior college and undergraduate          | 161| 66                     | 70.97                       | 69.34    |     |
| Master's degree and above                 | 69 | 27                     | 29.03                       | 30.66    |     |
| Job title                                 |    |                        |                             |          |     |
| Primary                                  | 122| 53                     | 56.99                       | 50.36    |     |
| Intermediate and senior                   | 108| 40                     | 43.01                       | 49.64    |     |
| Length of service                         |    |                        |                             |          |     |
| >5                                        | 100| 31                     | 33.33                       | 50.36    |     |
| ≤5                                        | 130| 62                     | 66.67                       | 49.64    |     |
| Marital status                            |    |                        |                             |          |     |
| Unmarried                                 | 114| 48                     | 51.61                       | 48.18    |     |
| Married                                   | 116| 45                     | 48.39                       | 51.82    |     |
| If they were the only child in their families |    |                        |                             |          |     |
| Yes                                       | 31 | 15                     | 16.13                       | 11.68    |     |
| No                                        | 199| 78                     | 83.87                       | 88.32    |     |
| Weekly working hours (h)                  |    |                        |                             |          |     |
| >45                                       | 171| 77                     | 82.80                       | 68.61    |     |
| ≤45                                       | 59 | 16                     | 17.20                       | 31.39    |     |

4 Emergency Medicine International
workplace violence suffered by ICU medical staff. Hospitals can prevent and control these high-risk factors to reduce the incidence of workplace violence in the ICU. However, the sample size of this study was not large, and some of the observed insignificant associations (such as education and age) may be caused by insufficient samples. In addition, the subjects of this study were recruited by sampling, which may lead to bias in individual factors, and the true rate of some factors (such as working hours per week) may be underestimated.

**Data Availability**

The data can be obtained from the corresponding author upon reasonable request.

**Conflicts of Interest**

The authors declare no conflicts of interest.

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