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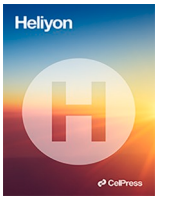

Research article

Fear of violence and working department influences physical aggression level among nurses in northwest Ethiopia government health facilities

Dawit Getachew Yenealem [a,*], Avier Mesfin Mengistu [b]

[a] Department of Environmental and Occupational Health and Safety, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia
[b] Hygiene and Sanitation Office, Gondar University Comprehensive Specialized Hospital, University of Gondar, Gondar, Ethiopia

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ABSTRACT

Purpose: Violence is recognized as an extreme expression of aggressive behavior and physical violence is most recognized type among victims. Patients always come to the hospitals looking for a cure, remedy, or assurance; however, incompatibility of demand and service often results in violent incidents that become statuesque in health facilities. This study aims to investigate physical violence and associated factors among nurses in health facilities in Gondar town, Ethiopia.

Method: The study was an institutional-based cross-sectional study among nurses in Gondar town from April to May 2017. Data were collected using a pretested modified version of the standard [ILO/ICN/WHO/PSI] questionnaire by trained data collectors among 339 nurses across health facilities. Multivariable logistic regression analysis with 95% confidence interval (CI) was used to identify the factors significantly associated with physical violence at p-value ≤0.05.

Result: Over one fourth (28.9%) [95% CI: (24.8, 33.9)] of nurses were victims of violence in the past 12 months. Level of verbal abuse (AOR = 2.35; 95%CI, 1.26–4.40), working in emergency (AOR = 4.58; 95%CI, 1.47–14.30) and inpatient (AOR = 3.33; 95%CI, 1.15–9.66)departments; having moderate (AOR = 0.41; 95%CI, 0.18–0.90),high (AOR = 0.41; 95%CI, 0.18–0.90), optimal (AOR = 0.41; 95%CI, 0.18–0.90) level of concern of violence were significantly associated with physical violence.

Conclusion: This study underlines findings nurses are at high-risk of physical violence and it is ranked second highest only to psychiatric and trauma facilities in Gondar town. Exposure to verbal abuse, working in emergency and inpatient departments and perceived level of concern are the precursors of experiencing physical violence. Therefore, investing time and capital in training like restraining and de-escalation, structural measures that deter the assailants are important.

1. Introduction

Violence at work is one of the most deep-rooted and dangerous occupational hazards in the health care work environment [1], and it deemed as a fact of working life for nurses [2]. However, accepting violence as an intrinsic part of medical professions has been

* Corresponding author.
E-mail address: dawitgetachew105@gmail.com (D.G. Yenealem).

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widely expressed [3,4]. Though there is no complete consensus on definitions [5]Physical violence refers to violence involving physical force [6], together with striking, kicking, shooting, barring, pushing, biting, and different violent acts, that leads to physical, mental, spiritual, moral, and social damages [7]. prevalence of workplace violence vary by profession, type, and setting ranging from one in five experience physical violence [8].

It has been a widely documented fact nurses by profession imply mostly females [9,10]; for example, In 2016, about 90.0 percent of all nurses in the United States were women [11]. Violence against women spreads its tentacles from home (predict poorer general health, mental health, and quality of life [12])to the workplace. Aggression against girls is, therefore, embedded in beliefs & cultures of most societies as too even to be normalized among members of the community [13]; evolving to typical remark of ‘‘women fancy punishment’’; an assertion of a belief that girls equate such abuse with an expression of affection.

As a woman, the consequences of violent exposure go beyond self to their families, the community, and the country at large [14]. At work, nurses are one of the professional groups most exposed to physical aggression, verbal abuse, because they have more frequent and more prolonged contacts with patients or families [15] with the responsibility of providing direct care [10]. The prevalence of workplace violence in nursing undoubtedly influences job performance, recruitment, desire to stay in nursing (7, 8).

Healthcare workers who sustain to violence at work result in enormous consequences [16] unleashed in various forms. Physical violence has been implicated for both acute low back pain and chronic low back pain [17]. It has become clear that victims of violence in the workplace may lead to loss of concentration, inattention to ethical guidelines, higher numbers of careless mistakes, which consequently pose potential accidents & injuries [18,19]. Workplace violence causes physical harm to not only nurses but also a reason to develop a series of post-traumatic reactions [20,21] including felt angry, felt aggrieved, reduced work enthusiasm [22], and to decrease the overall professional quality of life [23]. Violence decrease of the attrition rate [23] and a significant effect on turnover intention [19,22,24], increasing reassignment requests within organization [19]. It also indicated as consequences that eventually lead to workforce shortage & crisis [25,26].

International labor organization (ILO) commissioned estimates claimed the cost due to workplace violence accounts for 1–3.5% of Gross domestic product (GDP) [27]. About 1.5 percent of the UK working population are victims of violence, while Health professionals and social service workers are just ranked second to professionals who deal with aggression as a line of work [28]. The pooled economic estimates cost of workplace violence ranged from $ 2.36 million to $ 55.86 billion [29]. Besides the personal cost to victims for ordinary workplace violence, the cost structure of health care workplace violence includes social costs like externality-related public safety cost, defensive medicine cost, and specific factors cost [30].

The poor working environment has been cited as one of the push factors that drive the brain drain of nurses [31] and even complaints to working condition is one of the main triggering issues in strikes by health force in low-income countries [32]. In Ethiopia, hardly researches try to address physical aggression in the study area among nurses. The Safeguarding Health in Conflict Coalition Violence against health care workers has been more pronounced following Nurses are frontline workers who spend the most considerable amount of time with patients, making them both victims of lurking violence and best positioned to assess and evaluate behaviors and signals of looming aggression [33]. The purpose of the study was then to explore the prevalence and potential factors that determine the occurrence of physical attacks on Gondar city nurses.

2. Material and methods

2.1. Study design and setting

An institutional-based quantitative cross-sectional study was employed in Gondar town in April 2017. The town of Gondar is located north of Addis Abeba at 737 km and 265 km from the capital city of Amhara Region, Bahir Dar. Gondar was founded in 1635 and is located in the central Gondar Zone of the Amhara Region, and it is one of the tourist destination places which have been a seat of a government. According to the central statistical agency of Ethiopia in 2017, Gondar projected to be home for 360,600 people [34]. There are one university hospital, eight health centers, and 50 privately owned clinics of varying sizes employing over 1000 healthcare workers. It has more than 500-bed capacity. The hospital is used as the referral center for more than 7 million catchment population.

2.2. Sample size determination, sampling technique

The sample size was calculated by using a single population proportion formula, taking 36.4% [35] prevalence of physical violence from previous quantitative review. We consider 95% confidence interval with a margin of error of 5%. Finally we came up with the sample size of 372. Stratified sampling techniques were used for selecting the study subjects. First of all, nurses were stratified into hospital & health centers. First, we obtained the list of nurses from the human resource department of health facilities and coded by numbering. Proportional numbers of nurses were selected from each stratum of health facility by a simple random sampling technique through a lottery method.

2.3. Data collection tools and procedures

Data were collected from governmental employed nurses working across different levels of facilities in Gondar town. The questionnaires were distributed at respondents’ workplaces in person after selecting the right time and privacy for them, like health breaks. In most cases, The participants waited until they fill out at the workplace while the rest was given the next day as the due date to return the completed questionnaire. The main questionnaire is a modified version of [ILO/ICN/WHO/PSI] [36], which has been widely used

in Ethiopia [37–40]. To enhance its content validity, it was examined and amended by health care professionals with relevant experiences for clarity, relevance, and sensitivity to local culture and compatibility to the research objective as well. The test-retest approach was employed to evaluate the reliability of the tool. The questionnaire was completed by 37 nurses working in health facilities other than study area with one week an interval, and a satisfactory correlation coefficient of 0.80 was scored. Feedbacks from pretest & expert advice help to modify issues like different understanding of concepts across potential respondents. For example, the question "how many years of experience do you have in the health sector" appears to be vague for people who have been working as a non-healthcare professional in health facilities. Thus, it was modified as "how many years of experience do you have as a health professional in the health sector". The questionnaire was constructed of four parts. The first section probes socio-demographic & occupational characteristics like-gender, age, educational status, type of facility, working hour, working section, and marital status.

The second part asks whether the respondents have experienced at least one form of physical violence in the last twelve months in which ascertainment of physical violence bases. it was accompanied by an exhaustive list of physical violence attributes under parenthesis [including beating, kicking, slapping, stabbing, and shooting, through anything at you, pushing, biting and pinching among others] to facilitate ease of understanding and response. Based on their response (i.e if they were victims) they were asked to answer follow-up questions to understand the frequency, management and perpetrators nature. Similar fashions were followed to the subsequent third & a fourth section contains verbal abuse & sexual harassment, respectively, with relevant related questions.

Three environmental and occupational health graduate students were selected to collect the data alongside with one environmental health professionals from Gondar city administration assigned to supervise the data collection process. Both data collectors and supervisors were given a one-day training on the aim of study procedures of collection & exercise. The questionnaire was discussed thoroughly question by question and simulated through demonstrations.

2.4. Data quality management and analysis

All the questionnaires were checked manually in day-to-day level, coded and entered into EPI info version 7, and exported to IBM SPSS version 20 software for analysis of potential explanatory variables. Descriptive analyses were performed to describe variables using summary measure, frequencies, figures & tables. The normality, outliers, and multicollinearity of the variables were checked before running the bivariate and multivariable binary logistic regression analysis. The multi-collinearity assumption was checked through the variance inflation factor (VIF), and all variables showed (VIF <3). The goodness of the model fit test was checked by Hosmer Lemeshow (p value $= 0.996$). 12-month physical violence was evaluated by running bivariable logistic regression. Then, variables with the P-value ≤ 0.2 were analyzed in multivariable regression. The degree of association between physical violence & independent variables was assessed using adjusted odds ratios within a 95% confidence interval p-value ≤ 0.05. Physical violence was declared when the study participants note the experience of physical violence in the circumstances related to their work in the past 12 months.

3. Results

3.1. Socio-demographic characteristics of respondents

From a total of 372 distributed questionnaires 339 returned with complete information that gives 91.12% (N = 372) response rate.

Table 1
Socio-demographic characteristics of nurses working at a governmental health facility at Gondar city administration, April 2017 (n = 339).

Variables	Nurses	
	Frequency(n)	Percent (%)
Sex		
Male	132	38.9
Female	207	61.1
Age		
≤25	41	12.1
26-35	175	51.6
≥36	123	36.3
Religion		
Orthodox	296	87.3
Muslim	34	10.0
Others	9	2.7
Educational status		
Diploma	79	23.3
Degree & above	**260**	**76.7**
Marital status		
Married	149	44.0
Single/Divorced	190	56.0

NB: Others: Protestant/catholic/Adventist.

Among respondents, 132 (38.9%) were males, and 207 (61.1%) were females. The median age was 27, IQR = 2 years with a range of 20–56. The majority of 175 (51.6%) of nurses are between the age group of 26–35 years. Concerning educational status, only one fifth 79 (23.3%) of nurses have a diploma as qualifications in their professions (Table 1). Most respondents 296 (87.3) are orthodox Christian followers. slightly above half of nurses either describe themselves as singles or had been ever married.

3.2. Organizational &workplace characteristics of nurses

Almost Two-third of 226 (67.6%) of respondents claim that workplace violence reporting procedures in their health facility do not exist. Inpatient departments appear as working sections where half 168 (49.6%) of nurses spent their time in the health facility. A third of nurses' work in an environment almost resembles lone work: at most five staff in the working unit (Table 2).

3.3. Prevalence of physical violence and associated factors

Nearly one third (28.9%) [95% CI: (24.8, 33.9)] of nurses were victims of violence in the past 12 months. Over one third (42.25%) had witnessed physical violence on colleagues at the workplace and half of them 2–4 times in the last year alone. Fitting in to in univariable analysis shift work, department, verbal abuse, sexual assaults, experience, working hours, health facility ownership, marital status, educational level, and level of the facility becomes significantly associated with workplace violence. Consequent analysis through multivariable regression results in department verbal abuse & level of concern of violence as predictor variables.

A place of work section of nurses demonstrated that the odds nearly about four & three times higher among the emergency and inpatient rooms workers than those served in the outpatient department (AOR = 4.58, 95% CI: (1.47,14.30)) and (AOR = 3.35, 95% CI: (1.15,9.66))respectively. Exposure to verbal abuse proceeded by physical violence two times compared to those who have not such experiences (AOR = 2.35, 95% CI: (1.26, 4.40)). In addition, those workers who expressed their concern of as moderately worried and worried were four and three times AOR = 4.50,95% CI: (1.63,12.38)and (AOR = 2.93, 95% CI: (1.25,2.86)) likely experience physical violence respectively (Table 3).

4. Discussion

Our findings provide further evidence on the prevalence of physical violence among nurses but also shed alight the association between the work department, level of concern about violence, verbal abuse, and physical violence in the female-dominated profession. Working in the emergency and inpatient departments, exposure to verbal insults, and having concerns about the possibility of victimization by violence have been found as explanatory variables of physical violence.

The study shows that the prevalence of physical violence among nurses was 28.9% [95% CI: (24.8, 33.9)]. This finding shows physical violence is increasing through time compared to previous Ethiopian researches [37,40] and corroborated by recent studies [41,42]. Nurses are the public face of the healthcare system, primarily welcoming patients & their families; and serving as liaisons between patients and doctors [19,43]. In this regard, they become excuses for other faults since patients do not dare to blame doctors

Table 2
organizational and workplace characteristics of nurses working at governmental health facilities of Gondar city administration, April 2017, (n = 339).

Variables	Frequency(n)	Percent (%)
Level of facility		
Hospital	257	75.8
Health centers	82	24.2
Violence Reporting procedure		
Available	110	32.4
Unavailable	229	67.6
Department		
Inpatient departments	168	49.6
Emergency departments	41	12.1
Other departments	19	5.6
OPD-out patient department	111	32.7
Staff number		
1-5	109	32.2
6-10	62	18.3
11-15	93	27.4
16-20	75	22.1
Experiences (in years)		
1-5	219	64.6
6-10	80	23.6
≥11	49	11.8
Shift work		
Yes	240	70.8
No	99	29.2

Table 3
Univariable & multivariate logistic regression of factors associated with physical violence among nurses working at governmental health facilities in Gondar, April 2017 (n = 339).

Variables	physical violence		COR (95%CI)	AOR (95%CI)
	Yes	no		
Working department				
Inpatient	58	110	2.72 (1.50,4.94)*	3.35 (1.16,9.67)*
Emergency	20	21	4.92 (2.22,10.88)***	4.58 (1.43,13.82)*
Other†	2	17	0.60 (0.12,2.86)	1.05 (0.18,5.92)
OPD	18	93	1	1
Shift work				
Yes	80	160	2.25 (1.26,4.00)*	1.14 (0.58,2.27)
No	18	81	1	1
Verbal abuse				
Yes	78	119	3.99 (2.30,6.94) ***	2.35 (1.28,4.49) *
No	20	122	1	1
Sexual assaults				
Yes	14	20	1.84 (0.89,3.81)	1.05 (0.43,2.52)
No	84	221	1	1
concern of violence				
Not worried	12	83	1	1
Little worried	23	61	2.60 (1.20,5.64) *	2.02 (0.87,4.71)
Moderately worried	15	18	5.76 (2.31,14.38) ***	4.50 (1.63,12.38) **
Worried	28	41	4.72 (2.18,10.23) ***	2.93 (1.25,2.86) *
Very worried	20	38	3.64 (1.61,8.21) ***	2.61 (1.07,6.35)
Years of experiences				
1-5	72	147	1.68 (0.76,3.73)	0.94 (0.36,2.40)
6-10	17	63	0.92 (0.37,2.32)	0.72 (0.26,2.02)
11+	9	31	1	1
Staff number				
1-5	23	86	1	1
6-10	22	40	2.05 (1.02,4.11)	1.11 (0.44,3.04)
11-15	19	74	0.96 (0.48,1.90)	0.60 (0.20,1.73)
16-20	24	41	3.10 (1.62,5.92) **	1.51 (0.54,4.18)
Working hour				
≥41	67	135	1.69 (1.03,2.78)*	1.31 (0.74,2.31)
≤40	31	106	1	1
Marital status				
Married	34	115	1	1
single/divorced	64	126	0.58 (0.35,0.94)*	0.84 (0.46,1.53)
Level of facility				
Hospital	80	177	1.60 (0.89,2.88)	0.39 (0.12,1.26)
health center	18	64	1	1
Educational level				
Diploma	18	61	0.66 (0.36,1.19)	0.74 (0.35,1.56)
degree & above	80	180	1	1

NB: statically significant at * = $p < 0.05$; † = **liaison, central supply, physiotherapy, anesthesia, x-ray, card room, triage;** ** = $p \leq 0.005$; *** = $p \leq 0.0001$ OPD-out patient department.

[19] due to a positive image in the community. Moreover, Because of resource constraints, technological and social changes, the nurse-patient relationship has become more complicated and strained [1]. On the other hand, this could be part of the influence of the political instability of the regime, which peaks around 2016/2017 [44,45]. since clients will come with some agitated state influenced by clashes. In line with previous claim Safeguarding Health in Conflict Coalition (SHCC) documented nearly 8 folds increase of violence on 2021 than pre war year of 2020 as result of north Ethiopian conflict. current result is higher than the study among Jordanian hospital 22.5% [46], Iranian female workers 11.5% [47],jordan 18.3% [19], Taiwanese nationwide survey 19.1% [1], Turkey university 13.9% [48], Istanbul nurses 33.0% [49],12% Iran [50], five European countries 20.4% [51], five European countries 20% [52], Egypt 9.3% [53], of the china's Heilongjiang, nurses 7.8% [54], South-East Asian and Western Pacific 23%.This can be indicted to the difference in the quality of health care service delivered from reception to treatment. On top of this, a political condition in the study period was such a fragile conflict, and causalities become daily routines. physical violence level in this study is Lower than psychiatric hospitals of Ethiopia 36.8% [38], Israel 56.1% [23], China 57.9% [55], Taiwan 50.9% [56]; emergency nurses in turkey 74.9% [57] and few studies in mixed facilities 36.7% [58], 36.4% in a review [35]. These are places of violent threats as a business & clients are inherently aggressive. However, the variation in tools also visible to anyone as some use different scales [23,55,57,59], study time differences [39]. Our finding is comparable to a study from turkey hospital nurses 33.0% [49]. Thus our finding appeared to be one of the highest with exceptions of mental health and trauma centers, and places raged by insecurity [60].

The odd of experiencing physical attack is more than 2.3 folds among those who verbally abused in the workplace. These findings suggest that physical violence on health care workers will not happen out of the blue, rather it preceded by signs of escalating behavior known as verbal abuse. This underlines previous approach of training which focuses on equipping workers in recognition techniques

singes from violence should be strengthen. This is significant because it is plausible to expect that most cases, physical aggression, either proceeded by verbal insults or accompany simultaneously. That is why some literature reports conjugate exposure to verbal and physical violence [59,61]. It is widely indicated that shouting, derogatory words, and tones, among others, indicated as signs of looming physical attack in de-escalation standard procedures.

In addition, there was an increased likelihood of experiencing physical violence by being a worker of inpatient rooms than their outpatient colleagues. It stands are 3.3 folds among these workers. Next to emergency rooms, inpatient wards are where patients are admitted with Disease of grave implications and potential complications [62], creating misunderstanding with patient families or caregivers. This is supported by other researches [49]. Besides, it can be due to inadequate health service resources, including understaffing, poor staff-patient ratio, shortage of hospital beds [55] as it is so frequent in Ethiopian settings [63] and developing nations.

Emergency & trauma departments are so infamous that nurses assigned are 4.5-time victims of physical violence of outpatient counterparts. These results build on existing body of evidence of significant proportion of violence is concentrated in this section of health facilities. Moreover these results should be considered when planning preventive and de-escalation measures in wider framework of intervention. This has been supported by research alike done on nurses [1,19,23,64] to healthcare workers [29,39,65]. An emergency is a place where violence is normalized [62] or quite natural [66] because it could be ascribed to some underlying factor such as patient death or significant adverse event occurrences [39,62]that could cause confusion or aggression in patients [66] and relatives alike. Besides, the necessary high level of nurses–patient contact increases the exposure of the nurse to the hazard [23]. The emergency is notoriously known with crowding, long waiting time, presence of weapons, and the likes that make it vulnerable [67]. Emergency Department factors such as busy times with high patient volumes or periods of waiting are associated with increased violence, as well as incidents with unanticipated outcomes such as patients with severe illness or death [68].

Assuming the level of concern rated as moderately worried and very worried was 4.50, 2.93, times more likely to be exposed than those who classify their concern as not worried, respectively. These findings suggest that those workers with fear of violence and corresponding working section can be considered as priority intervention areas of curbing violence. Being worried can be assumed as red flag for violence prone workplace. It is imperative that the one who feels at risk of violence is a person with previous experience of aggression or necessitated due to prevailing working conditions that favored violence. Such a positive association has been detected in other research [55]. It was found that 54.7% expressed that they are very worried about violence compared with 6.8% only of non-emergency nurses, and Over 70% of the nurses felt worried about workplace violence [50]. Groundbreaking Chinese study reports higher fear of future violence at work scores among nurses who were female with average score of 67.43 ± 17.20. Despite all, Many participants who were victims of physical violence or verbal abuse did not report incidents because they thought it would provide no benefits [58].

Although in the current study, a working hour was not statistically significant. It is somewhat alarming that 59.9% and 34.8% of respondents sustain over 40-h work per week and excessively long hours. In the case of the healthcare industry, it is combined with an unhealthy shift work arrangement, which equates a double burden. It is imperative that extended work results in tiredness and a decrease in quality of service [69,70]. Therefore, it is recommended to reduce overtime work and maintains standard range. It will also serve the purpose of giving job opportunities for a reportedly highly unemployed population.

This study is not immune to limitations majorly recall bias since respondents expected to remind their recollection of physical violence of the past year. However, to some extent, it will be countered by the inherent nature of physical aggression, which imprints a memory of gruesome experiences to its unfortunate victims. Despite limitations focusing on single component of violence can be considered as a strength. in addition making the study multicenter can also be positive size of study. For the ascertainment of the underlying cause of this alarming result of physical violence, further examination will be relevant.

5. Conclusions

This study into Physical violence among nurses revealed that violence is one of the highest and significant occupational hazards among nurses, in which 4 out of 10 participants suffering from it. Nevertheless, the result does not rival reports from either psychiatric and trauma centers nor conflict zones. This is supporting the very notion of violence against nurses is a universal issue despite the widening perception of violence as an innate part of work. Level of concern about violence, working in the emergency or inpatient department, verbal abuse, and physical violence have a positive association with physical violence. Health facilities shall set up better security in emergency and inpatient sections. Besides, it will be wise to equip nurses with skills of de-escalation or how to spot potential signs of aggressive assailants. Enforcing the restriction of relatives allowed entering; creating a friendlier hospital environment may be crucial in violence prevention. Finally, establishing standard operating procedures for reporting and handling violence will be vital. Future researches should take much larger population, include possible impacts and take a repeated crossectional approach to address recall bias and probe seasonal changes.

Ethical approval and consent to participate

The present study protocol was reviewed and approved by the Institutional Review Board of University of Gondar (IRB No. IPH/2129/2009). A formal letter of cooperation was presented to respective hospitals & health centers. Each respondent was informed about the objective of the study, how the result will contribute to employers & government in crafting intervention and devising measures to minimize violence at work. Respondent was involved after they give written informed consent. Any worker was neither forced to participate against their will nor paid for their participation. All data collected kept confidentially and only aggregate data were used for interpretation to maintain the confidentiality of the data.

Consent for publication

Not applicable.

Availability data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Authors' contributions

DGY Initiated the research concept wrote up the research proposal, involved in the presentation and interpretation process and analyzed the data, presented the results and discussions, wrote up the draft manuscript, reviewed and finalized the manuscript document, and is the corresponding AMM: Involved in the presentation and interpretation process of results and discussions, and reviewed the final drafted manuscript document. All the authors read and approved the final manuscript.

Declaration of competing interest

There is no conflict of interest.

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