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Research Article

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Accidental Exposure to Body Fluids Among Healthcare Workers in a Referral Hospital in the Security-Challenged Region of South West Cameroon

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Abstract

Introduction: *Accidental exposure to body fluids (AEBs) increases the risk of blood-borne infections among susceptible healthcare workers (HCWs). While 90% of the AEB reported occur in developed nations, they bear 90% of the burden of healthcare associated infections, sub-Saharan Africa. Social insecurity may contribute further to the vulnerability of HCWs. Our study sought to prevalence, reporting and management of AEBs among HCWs in the South-West Cameroon Region of Cameroon, that experiences security challenges since the year 2016.*

Methods: *A cross-sectional study was carried out from February 2023 to April 2023, at the Buea Regional Hospital. Following informed consent, a 28-items questionnaire was administered to HCW. Data was entered and analyzed using R Statistics version 4.3.1.*

Results: *Out of the 230 HCWs that were approached, 200 responded for a participation rate of 85%. The prevalence of AEB was high (93%). Exposures occurred while administering injections (37%), during blood sample collection (16%), delivery (11%), surgery (10.2%) and washing. The main risk factors for AEB included female gender (aOR=2.86) and in working the medical (aOR=5.95), pediatrics (aOR=10.5), obstetrical (aOR=22.6), and dental (aOR=26.3) units. Despite their high prevalence, only 46.8% of AEBs were reported. Post-exposure management was carried out for 67.2% of the reported cases. Most HCWs were unaware of the existence of an Infection Control Committee within the study setting, corroborating gaps in the observance of Standard Precautions.*

Conclusions: *Most HCWs experienced AEBs over the last year. The study underscores a critical gaps in awareness and adherence to standard precautions. There is a need to sensitize and enforce the observance of Standard precautions for infection and control among HCWs of the Buea Regional Hospital. Such measures should be extended to other satellite health facilities.*

Keywords: Accidental-Exposure, Healthcare Workers, Blood, Body Fluids

Abbreviations

AEB: Accidental Exposure to Body fluids
AIC: Akaike Information Criterion
aOR: Adjusted Odds Ratio
BBF: Blood and Body Fluid
CI: Confidence Interval
cOR: Crude Odds Ratio
HBV: Hepatitis B Virus
HCW: Healthcare Worker
HIV/AIDS: Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
HSDM: Health System Decision-Makers
HVC: Hepatitis C Virus
ICC: Infection Control and Prevention Committee
ICP: Infection Control and Prevention
NSI: Needlestick and Sharp Injury

PPE: Personal Protective Equipment

Background

Healthcare associated infections (HAIs) are contracted during a stay or visit in a hospital environment, as a result of an unintended contact with blood or other body fluids (BBFs) [1–4]. Factors favoring accidental exposure to BBFs among healthcare workers (HCWs) include host and institutional determinants [4]. Such exposures increase the costs of antimicrobial treatments, absence from work, distress, anxiety, early retirement, leading to a depletion of the health workforce [5–8]. Their financial burden and mortality are related to the virulence, pathogenicity and antimicrobial resistance of the agents involved [9–12]. Although the phenomenon of HAI is global, Africa is disproportionately affected [13–16]. HAIs result from failures in the implementation of hygiene and adequate infection control measures in healthcare facilities. Such measures are essential in the delivery of quality healthcare [15]. More than 3 million HCWs experience an accidental needle stick injuries (NSIs) every year, thus getting exposed some twenty blood-borne pathogens, resulting in 170,000 HIV, 2 million HBV and 0.9 million HCV infections [18, 19]. While 90% of accidental exposures occur in the developed world, more than 90% of infections occur in developed countries, particularly in Africa where the prevalence of the underlying infections is high and adherence to standard precautions is poor [18, 19]. Such situations are exacerbated by conflicts, insecurity and social unrest [20]. Given their socio-economic burden, some countries have established surveillance systems to manage exposures to blood-borne infections in healthcare settings [21]. In many African countries, such systems are plagued by underreporting and poor documentation [22–24]. The lack of training is a major hinderer to the observance of standard precautions [25]. Splashes are the most reported AEB and most victims work in the surgical department [26, 27]. Risk perceptions and trust in post-exposure management affect the reporting patterns among HCWs [28, 29]. The implementation of infection control and prevention (ICP) measures is typically coordinated by an Infection Control Committee its operational data are used to guide interventions [31-33]. In the Cameroon healthcare pyramid, the Regional Hospitals (RH) typically offer surgery, internal medicine, obstetrics & gynecology, laboratory, pediatrics and emergency services; assuming capacities building roles for their satellite and district health facilities. Such roles include infection prevention and quality of healthcare services. Our study sought to investigate the determinants of accidental exposures to blood and body fluids among healthcare workers within the security-challenged Region of South-West Cameroon.

Methods

We conducted a hospital-based cross-sectional study from February to April 2023.

An exhaustive sample of HCWs of the Buea Regional Hospital were targeted for inclusion. The Regional Hospitals are the second level of reference. This facility has a capacity of 110 beds and a catchment population of over 200 000 inhabitants. Clinical services include surgery, emergency, hemodialysis, anesthesia-reanimation, ophthalmology, radiology, pediatric, cardiology, gynecology & obstetrics, internal medicine, odonto-stomatology, ear-nose and throat, laboratory, cleaning and sterilization departments. The study HCWs were nurses, laboratory technicians, midwives, assistant nurses, general practitioners, cleaners, dental surgeons and medical specialists, who had the potential to be exposed to BBFs in the execution of their duties and who gave their informed consent. A self-administered pre-tested 28 items-questionnaire was used, covering socio-professional characteristics, history of exposure, adherence to standard precautions, reporting and management of AEBs.

Following collection, data were entered, cross-checked and analyzed using R Statistics version 4.3.1. Simple and multiple binary logistic regressions were used to assess the strength of the association between variables. The selection of predictors that best fit the model was assessed using the stepwise Akaike Information Criterion (AIC). A p-value <0.05 was considered statistically significant. Confidence intervals (CI) were estimated at the 95% level of confidence.

The dependent variables included experience of exposure (NSIs and splashes) over the past 12 months and the reporting of the last exposure. Independent variables included age, sex, education level, socio-professional status and healthcare related practices.

The study protocol was approved by Institutional Review Board of the Faculty of Medicine and Biomedical Sciences – The University of Yaoundé I, under the ethical clearance N°0344/UY1/FMSB/VDRC/DAASR/CSD. Informed consent was obtained from participants prior to inclusion in accordance with the declaration of Helsinki on research involving human subjects.

Results

Out of 230 HCWs that were contacted, 200 completed and returned the questionnaires for a response rate of 87%.

Occupational Exposure Experience

Over 83.5% (CI: 77.6-88.4%) of the study participants experienced an occupational exposure over the last 12 months. Exposure involved NSI (48.5%; CI: 41.4-55.7%) or splash (35.5%; CI: 28.9-42.6%).

Factors Associated with Occupational Exposure to Body Fluids

Participants working in the internal medicine (aOR=5.95; p-value=0.006) and pediatric (aOR=10.9; p-value=0.008) units were more likely to experience NSI. The pattern of exposure revealed a gender difference as male HCWs were 2 times more likely to experience a NSI (Table 1).

Risk Factor	NSI *n* (%)		Total (100%)	cOR	p-value	aOR	95%CI		*p*-value
	Yes n=97	No n=103					Lower	Upper	
Sex									
Female	69 (46.0)	81 (54.0)	150	1		1	—	—	
Male	28 (56.0)	22 (44.0)	50	1.49	0.2218	2.05	1.01	4.40	0.0517
Age group (years)									
18-24	12 (44.4)	15 (55.6)	27	1					
25-34	60 (48.8)	63 (51.2)	123	1.19	0.6832				
35-44	19 (50.0)	19 (50.0)	38	1.25	0.6587				
45 +	6 (50.0)	6 (50.0)	18	1.25	0.7482				
Educational level									
University	90 (52.9)	80 (47.1)	180	1					
Secondary or Primary School	13 (43.3)	17 (56.7)	20	1.47	0.3335				
Unit									
Laboratory	4 (22.2)	14 (77.8)	18	1		1	—	—	
Medical ward	37 (59.7)	25 (40.3)	62	5.18	0.0083	5.95	1.77	24.3	0.0066
Surgical ward	19 (48.7)	20 (51.3)	39	3.33	0.0650	3.74	1.06	15.7	0.0505
Obstetrics and gynecology	5 (22.7)	17 (77.3)	22	1.03	0.9696	1.07	0.23	5.29	0.9296
Pediatrics	9 (75.0)	3 (25.0)	12	10.5	0.0072	10.9	2.07	74.3	0.0079
Dental service	2 (33.3)	4 (66.7)	6	1.75	0.5888	1.27	0.13	10.1	0.8210
Intensive care unit	3 (50.0)	3 (50.0)	6	3.50	0.2076	4.22	0.56	34.5	0.1602
Emergency	9 (56.3)	7 (43.8)	16	4.50	0.0474	4.24	0.96	21.7	0.0657
Out - patient consultation	9 (47.4)	10 (52.6)	19	3.15	0.1159	2.87	0.69	13.6	0.1594
Professional status									
Laboratory technician	4 (23.5%)	13 (76.5%)	17	1					
Physician	11 (57.9%)	8 (42.1%)	19	4.47	0.0422				
Midwife & Nurse	70 (48.6%)	74 (51.4%)	144	3.07	0.0593				
Assistant nurse & Cleaner	12 (60.0%)	8 (40.0%)	20	4.88	0.0304				
Years of experience 1									
<5	63 (48.1)	68 (51.9)	131	1					
5+	34 (49.3)	35 (50.7)	69	1.05	0.8735				
Years of experience 2									
<10	81 (48.5)	86 (51.5)	167						
10+	16 (48.5)	17 (51.5)	33	1.00	0.9985				
Glove always available									
Yes	58 (46.0)	68 (54.0)	126	1					
No	39 (52.7)	35 (47.3)	74	1.31	0.3625				
Awareness of ICC									
Yes	18 (32.1)	38 (67.9)	56	1					

No	2 (40.0)	3 (60.0)	5	1.41	0.7209				
I don't know	77 (55.4)	62 (44.6)	139	2.62	0.0038				
Recapping needle practice									
No	10 (38.5)	16 (61.5)	26	1					
Yes	87 (50.0)	87 (50.0)	174	1.60	0.2751				
ICP refresher training received									
Yes	17 (35.4)	31 (64.6)	48	1		1	—	—	
No	80 (52.6)	72 (47.4)	152	2.03	0.0394	2.06	1.01	4.30	0.0506
Poster on AEB available									
Yes	88 (47.8)	96 (52.2)	184	1					
No	7 (53.8)	6 (46.2)	13	1.27	0.6752				
I don't know	2 (66.7)	1 (33.3)	3	2.18	0.5271				

cOR: Crude Odds Ratio; aOR: Adjusted Odds Ratio; CI: Confidence Interval; ICP: Infection Control and Prevention, ICC: Infection Control and Prevention Committee; AEB: Accidental Exposure to Body Fluids; NSI: Needlestick and Sharp Injury

Table 1: Factors Associated with Needle Stick Injuries (NSI) Among Healthcare Workers of the Buea Regional Hospital, 2023

Female HCWs were 2.9 times more likely to experience a splash mediated exposure (p-value=0.019). Participants working in the laboratory (aOR=13.3; p-value=0.004), obstetric (aOR=23.3; p-value=0.0008) and dental (aOR=26.3; p-value=0.006) services experienced the most splash exposures (Table 2).

Risk Factor	**Splash Exposure *n* (%)**		**Total (100%)**	**cOR**	**p-value**	**aOR**	**95%CI**		***p*-value**
	Yes n=71	**No n=129**					**Lower**	**Upper**	
Sex									
Male	13 (26.0)	37 (74.0)	50	1		1	—	—	
Female	58 (38.7)	92 (61.3)	150	1.79	0.1077	2.86	1.23	7.18	0.0188
Age group (years)									
18-24	11 (40.7)	16 (59.3)	27	1					
25-34	42 (34.1)	81 (65.9)	123	0.75	0.5171				
35-44	15 (39.5)	23 (60.5)	38	0.95	0.9182				
45 +	3 (25.0)	9 (75.0)	12	0.48	0.3491				
Educational level									
University	64 (37.6)	106 (62.4)	170	1					
Secondary or Primary School	7 (23.3)	23 (76.7)	30	0.50	0.1365	0.35	0.011	1.01	0.0638
Unit/Service									
Emergency	2 (12.5)	14 (87.5)	16	1		1	—	—	
Laboratory	11 (61.1)	7 (38.9)	18	11.0	0.0075	13.3	2.51	109	0.0043
Medical ward	18 (29.0)	44 (71.0)	39	2.86	0.1918	2.58	0.61	18.0	0.2492
Surgical ward	9 (23.1)	30 (76.9)	22	2.10	0.3805	1.92	0.41	14.0	0.4493
Obstetrics and gynecology	17 (77.3)	5 (22.7)	12	23.8	0.0005	22.6	4.30	186	0.0008
Pediatrics	3 (25.0)	9 (75.0)	6	2.33	0.4005	1.66	0.21	15.5	0.6278
Dental service	4 (66.7)	2 (33.3)	6	14.0	0.0217	26.3	2.91	361	0.0063
Intensive care unit	0 (0.0)	6 (100.0)	6	—		—	—	—	0.9879

Out - patient consultation	7 (36.8)	12 (63.2)	19	4.08	0.1152	4.65	0.87	36.7	0.0937
Professional status									
Assistant nurse & Cleaner	15 (75.0)	5 (25.0)	20	1					
Laboratory technician	6 (35.3)	11 (64.7)	17	5.50	0.0185				
Physician	12 (63.2)	7 (36.8)	19	1.75	0.4254				
Midwife & Nurse	96 (66.7)	48 (33.3)	144	1.50	0.4576				
Years of experience 1									
<5	46 (35.1)	85 (64.9)	131	1					
5+	25 (36.2)	44 (63.8)	69	1.05	0.8753				
Years of experience 2									
<10	58 (34.7)	109 (65.3)	167	1		1	—	—	
10+	13 (39.4)	20 (60.6)	33	1.22	0.6093	2.08	0.79	5.60	0.1399
Permanent availability of PPE									
Glove									
Yes	58 (46.0)	68 (54.0)	126	1					
No	39 (52.7)	35 (47.3)	74	1.31	0.3625				
Facial mask									
Yes	30 (33.0)	61 (67.0)	91						
No	41 (37.6)	68 (62.4)	109	1.01	0.9694				
Face shield/goggle									
Yes	3 (50.0)	3 (50.0)	6	1					
No	68 (35.1)	126 (64.9)	194	0.54	0.4576				
Gown									
Yes	33 (42.3)	45 (57.7)	78	1					
No	38 (31.1)	84 (68.9)	122	0.62	0.1088				
Awareness of ICC									
Yes	24 (42.9)	32 (57.1)	56	1					
No	2 (40.0)	3 (60.0)	5	0.89	0.9015				
I don't know	45 (32.4)	94 (67.6)	139	0.64	0.1675				
ICP refresher training received									
Yes	17 (35.4)	31 (64.6)	48	1					
No	54 (35.5)	98 (64.5)	152	1.00	0.9890				
Poster on AEB available									
Yes	68 (37.0)	116 (63.0)	184	1					
No	3 (23.1)	10 (76.9)	13	0.51	0.3215				
I don't know	0 (0.0)	3 (100.0)	3	—					

cOR: Crude Odds Ratio; aOR: Adjusted Odds Ratio; CI: Confidence Interval; ICP: Infection Control and Prevention; ICC: Infection Control and Prevention Committee; AEB: Accidental Exposure to Body Fluids; PPE: Personal Protective Equipment

Table 2: Factors Associated with Splash Exposure Among Healthcare Workers at the Buea Regional Hospital, 2023 (n=200)

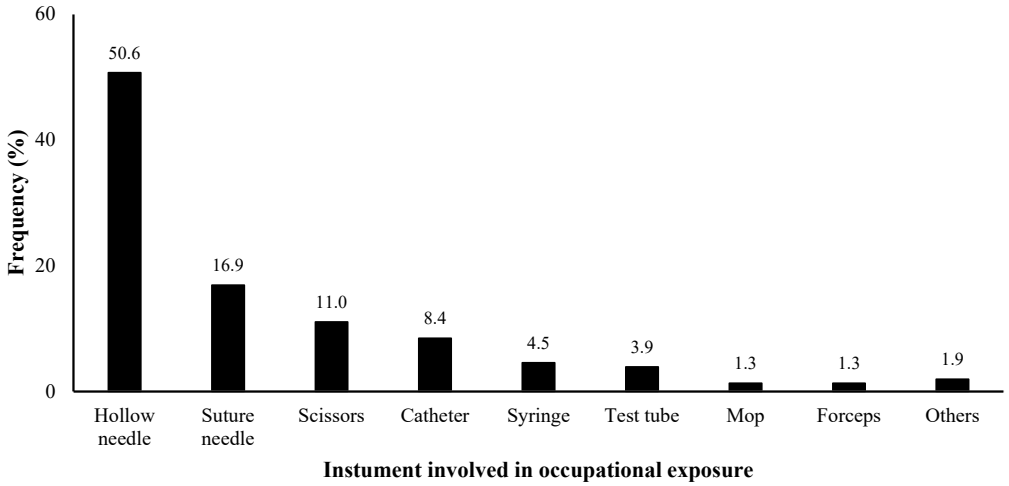

Figure 1: Instruments Involved in Accidental Exposures to Body Fluids among Healthcare Workers of the Buea Regional Hospital, 2023

Observance of Standard Precautions

Most participants (54%) washed their hands after every procedure. Participants justified their non-compliance with hand-washing prescription by the tight schedule and unavailability of water (88.2%) (Figure 3).

Circumstances of Occurrence of AEBs

Most accidental exposures (>80%) occurred while administering injections, blood sample collection, deliveries, surgery and cleaning of used equipments (Figure 2).

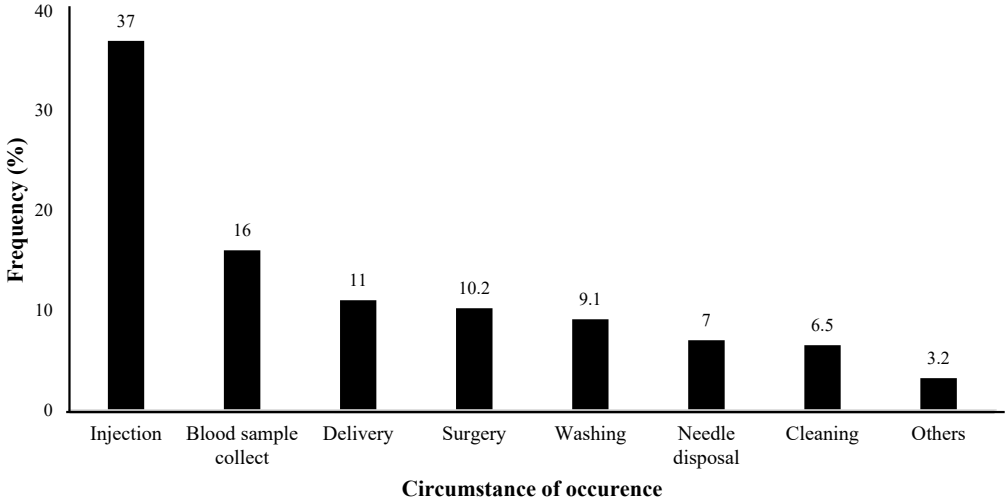

Figure 2: Circumstances of Occurrence of AEBs Among Healthcare Workers at the Buea Regional Hospital, 2023 (n=200)

Adherence to Standard Precautions

Most of participants (54%) washed their hands after every procedure. Participants justified their non-compliance with the hand-washing prescription by the tight schedule and unavailability of water (88.2%) (Figure 3).

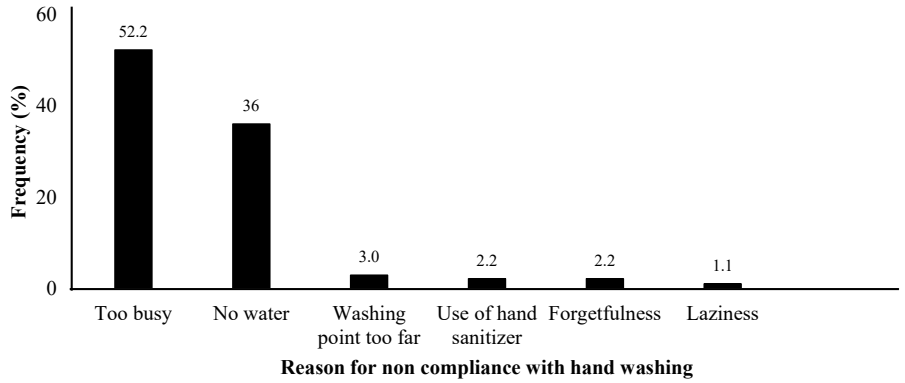

Figure 3: Determinants of Non-compliance with Systematic Hand washing Among Healthcare Workers at the Buea Regional Hospital, 2023

Availability of Personal Protective Equipment (PPE)

Gloves were available in 63% of cases. Face shields and goggles were the least available PPE (3%) (Figure 4).

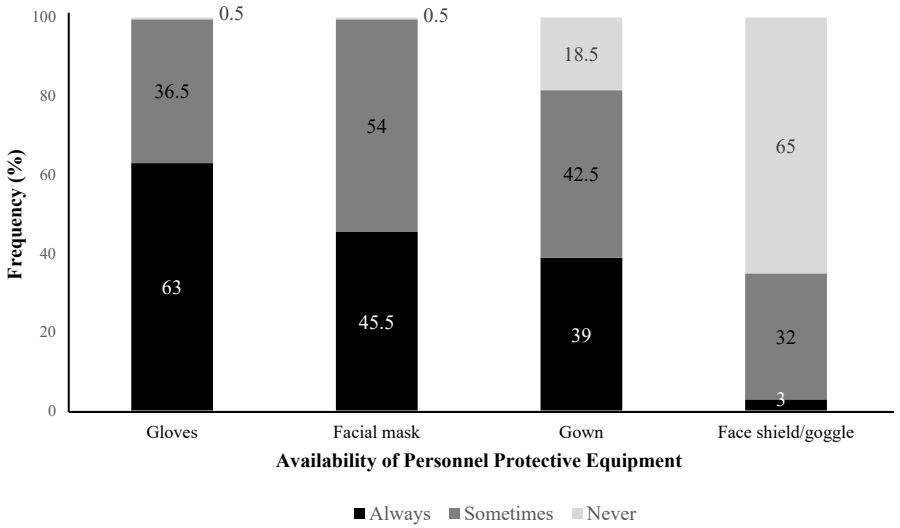

Figure 4: Reported Availability of PPE Among Healthcare Workers at the Buea Regional Hospital, 2023

Reporting and Post Exposure Management

More than half (56.5%) of occupational exposure were not reported. Participants who had not received training on ICP (p-value=0.015) were more likely not to declare AEB (Table 3).

The main reasons for not reporting exposure were lack of awareness of the reporting system (44.4%) and the perception that the risk of contamination was low (30.3%). Most participants (76.0%) asserted that there was a unit endowed with the management of cases of AEB, where PEP (post-exposure prophylaxis) could be administered (Figure 5).

Participants who experienced exposure washed the affected area with soap and water (52.8%) and 4% took a course of post-exposure anti-retroviral prophylaxis treatment.

Risk Factor	Underreporting *n* (%)		Total (100%)	cOR	p-value	aOR	95%CI		*p*-value
	Yes n=71	No n=129					Lower	Upper	
Sex									
Female	83 (55.3)	67 (44.7)	150	1					
Male	30 (60.0)	20 (40.0)	50	1.21	0.5646				
Age group (years)									
18-24	15 (55.6)	12 (44.4)	27	1					
25-34	67 (54.5)	56 (45.5)	123	0.96	0.9184				
35-44	24 (63.2)	14 (36.8)	38	1.37	0.5380				
45 +	7 (58.3)	5 (41.7)	12	1.12	0.8718				
Educational level									
University	76 (44.7)	94 (55.3)		1					
Secondary or Primary School	11 (36.7)	19 (63.3)		1.40	0.4142				
Unit									
Medical ward	28 (45.2)	34 (54.8)	62	1					
Emergency	9 (56.3)	7 (43.8)	16	1.56	0.4303				
Laboratory	13 (72.2)	5 (27.8)	38	3.16	0.0493				
Surgical ward	23 (59.0)	16 (41.0)	39	1.75	0.1781				
Obstetrics and gynecology	12 (54.5)	10 (45.5)	22	1.46	0.4501				
Pediatrics	6 (50.0)	6 (50.0)	12	1.21	0.7584				
Dental service	6 (100.0)	0 (0.0)	6	0.00	0.9863				
Intensive care unit	3 (50.0)	3 (50.0)	8	1.21	0.8205				
Out - patient consultation	13 (68.4)	6 (31.6)	19	2.63	0.0817				
Professional status									
Assistant nurse & Cleaner	10 (50.0)	10 (50.0)	20	1					
Laboratory technician	12 (70.6)	5 (29.4)	17	2.40	0.2079				
Physician	9 (47.4)	10 (52.6)	19	0.90	0.8695				
Midwife & Nurse	82 (56.9)	62 (43.1)	144	1.32	0.5585				
Years of experience 1									
<5	74 (56.5)	57 (43.5)	131	1					
5+	39 (56.5)	30 (43.5)	69	1.00	0.9964				
Years of experience 2									
<10	90 (53.9)	77 (46.1)	167	1		1	—	—	
10+	23 (69.7)	10 (30.3)	33	1.97	0.0982	2.18	0.99	5.12	0.0603
ICC available									
Yes	36 (64.3)	20 (35.7)	56	1					
No	3 (60.0)	2 (40.0)	5	0.83	0.8485				
I don't know	74 (53.2)	65 (46.8)	139	0.63	0.1607				
ICP refresher training received									
Yes	34 (70.8)	14 (29.2)	152	1		1	—	—	
No	79 (52.0)	73 (48.0)	48	2.22	0.0234	2.41	1.21	5.01	0.0150

Poster on AEB available									
Yes	101 (54.9)	83 (45.1)	184	1					
No	10 (76.9)	3 (23.1)	13	2.74	0.1353				
I don't know	2 (66.7)	1 (33.3)	3	1.64	0.6871				

cOR: Crude Odds Ratio; aOR: Adjusted Odds Ratio; CI: Confidence Interval; ICP: Infection Control and Prevention; ICC: Infection Control and Prevention Committee; AEB: Accidental Exposure to Body Fluids

Table 3: Factors Associated with Reporting of Occupational Exposure to Body Fluids Among Healthcare Workers at the Buea Regional Hospital, 2023

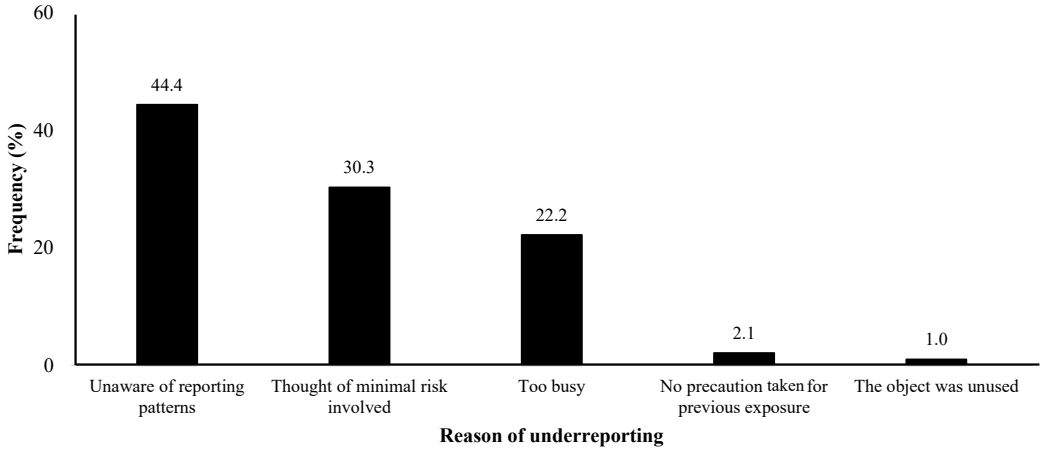

Figure 5: Reported Availability of Personal Protective Equipment (PPE) Among Healthcare Workers at the Buea Regional Hospital, 2023

Discussion

Hospital acquired Infections are of worldwide occurrence, affecting developing nations disproportionally. Their determinants include institutional, healthcare workers and working environment related factors.

The present study was conducted in Buea, where several armed groups steer security challenges since 2016 in the two historically Anglophone Regions of Cameroon [20]. Social unrest and conflicts are major constrains to the performance of the healthcare system, including the quality of services delivered. Attacks on HCWs and patients have been repeatedly documented along with destruction of health facilities. Common problems such as lockdowns disrupt hospital-based activities exacerbating the burden on an already fragile healthcare system. The perception of insecurity and uncertainty is an impediment to HCWs working environment leading to physical and mental fatigue. The pre-existing problem of HCWs shortage worsen the situation - [32], leading to overwork and increased incidence of AEB [27, 29, 36, 37].

Occupational exposure to BBFs occurred through NSIs (48.5%) and splashes (35.5%), corroborating findings in Uganda (55%) [38]. However, disparities in the triggers of exposures were reported in Cameroon and Ethiopia [26,29,39]. The high rate of AEBs among HCWs call into question the effectiveness of training on infection prevention and control, highlighting the need to strengthen educational activities and the scale up of PPE supply.

HCWs from medical (aOR=5.95) and pediatric (aOR=10.9) services were more likely to experience NSI. These findings differ from observations in other district level settings in Cameroon. Such differences may indicate varied approaches to the implementation and enforcement of IPC measures [27].

Females were 2.9 times more likely to experience a splash exposure than male HCWs. Exposure was higher among HCWs operating in the obstetrical unit. Therein, the splashes involved the amniotic fluids which were described as common in the delivery room [39].

Standard precautions are designed to reduce the risk of transmission of bloodborne pathogens. They are a minimum set of precautions in the delivery of care to all patients. Key precautions include hand washing, use of personal protective equipment, respiratory etiquette, prevention of needlestick and sharp injuries [43, 44]. Ideally, universal precautions are followed by all workers. However, the present study revealed that only 54% of HCWs systematically washed their hands after a procedure. The most common reasons for poor adherence to hand washing were a busy schedule and unavailability of water. Hand hygiene is a major component of standard precautions and the most effective method for preventing the transmission of hand-associated pathogens [36, 45, 46]. Failure to follow this measure increases the spread of infectious agents, including life-threatening pathogens such as HIV and hepatitis B [47].

Recapping used needles was practiced by over 85% of HCWs. Recapping needle is a risky practice that often results in the accidental puncture of the fingers or hand, leading to exposure to hazardous chemicals, drugs or infectious agents. Even though needle recapping is not recommended, the scoop-cap method of placing the cap on a hard surface and using one hand for recapping is advised as necessary in resource-limited settings where equipment with safety shield is not available [48].

Gloves were always available only in 63% of cases and face shields/goggles were the least available PPE. increasing the risk of splash into eyes, nose or mouth [49]. The availability of hand-washing facilities and the provision of PPE are measures aimed at creating a safe environment for patients and caregivers. Sub-optimal adherence to universal precautions may reflect flaws in supervision at intermediate and central levels. In that regards, emphasis on the role of the ICC, internal and external monitoring guidelines is needed to promote compliance [36].

Less than a third of HCWs (24%) had received training in ICP. Training with updating is associated with improved knowledge, positive changes in attitudes and practices and a reduction of occupational exposure.

Most exposures occurred during the administration of injections, blood collection and delivery, involving hollow and suture needles. Most exposures occurred while performing surgical procedures, recapping needle and disposing of used syringes [50, 51]. Other factors favoring exposure include handling an uncooperative patient, exhaustion resulting from long working hours [52].

More than half of the exposures were not declared (56.5%) and HCWs who had not received refresher training on ICP were most likely to avoid reporting. This can be explained by the lack of knowledge of the reporting channels and the underestimation of the health risks associated with exposure [28, 53]. There is a need to implement comprehensive, mandatory training programs on infection control and universal precautions for all healthcare workers. Focus should be laid on practical, scenario-based training to ensure HCWs can apply knowledge in real-world situations. There is a need to involve all cadres in the training, monitoring and evaluation of ICP measures. Underreporting could be related to the fact that the ICC was scantily known to HCWs of the Buea Regional Hospital. In addition, there was no dedicated registry for AEBs [26, 53].

Despite the low level of reporting, two-thirds (67.2%) of those who experienced AEB received post-exposure prophylaxis. Most of the HCW exposed knew about the management requirements and proceeded with emergency post-exposure treatment without filing the notification [28].

The present study underscores critical gaps in awareness, adherence to standard precautions among HCWs at the Buea Regional Hospital. In order to address gaps in the observance of infection control measures, health system decision-makers (HSDM) should implement comprehensive, mandatory training programs on infection control and universal precautions involving all healthcare workers. As the level of education is varied among HCWs, focus would be laid on practical, scenario-based to ensure that the acquired knowledge can be readily applied in real-world situations. A streamlined, user-friendly system should be established, ensuring anonymous, confidential and non-punitive systems for reporting and managing AEBs. HSDM should set up a monitoring system for affected HCWs, ensuring that post-exposure protocols are clear and easily accessible. Measures should be implemented to insure the continuous availability of Personal Protective Equipment (PPE) to HCWs, alongside training on their proper use and disposal. A keen attention should be directed to the obstetrics and surgery departments that bear higher exposures.

Conclusions

Most HCW of the Buea Regional Hospital had experienced an accidental exposure to blood and body fluids over the last year. Accidental exposure to body fluids occurred in a context of poor adherence to universal precautions resulting from inadequate hand washing facilities and supply of a non-continuous supply of personal protective equipment and inadequate hand washing facilities. Health facilities should establish a streamlined, user-friendly reporting system for AEBs that ensures anonimity. HSDM should ensure that post-exposure protocols are clear, easily accessible and followed up, with a monitoring system for affected HCWs. Increased availability and consistent supply of personal protective equipment (PPE) to HCWs, alongside their training on proper use and disposal will strengthen the observance of Standard Precautions. Special attention should be given to the obstetrics, pediatric and medical departments that bear higher exposure risks.There is an urgent need to establish an inclusive infection prevention and control team to pilot educational activities, monitoring and management system for the prevention of AEB.

Declaration

Authors' Contribution: Drafting of the study protocol, data collection, analysis and interpretation: B.A.C & F.Z.L.C; Drafting, data analysis and editing of manuscript: N.D.L & F.Z.L.C.; Critical revision of protocol and manuscript: F.Z.L.C and H.M.M.; Conception, design and supervision of research protocol and implementation, data analysis plan, revision, editing and final validation of the manuscript: I.T.

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