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Objective: The main objective of this study is to determine the prevalence and factors associated with needle stick and sharps injuries among health care workers.

Methods: An institutional based cross sectional study design was conducted among health care workers who are working at least one year in east gojjam zone health institutions. A total of 449 study subjects were selected using simple random sampling technique through lottery method and included in the study. Data was collected using pretested Amharic version questionnaire through self administered interview of study subjects. To maintain the quality of data, pretesting, use of local language and supervision of data collection process was done. The collected data was cleaned, entered and analyzed using SPSS version 17 statistical software.

Keywords : *needle stick/sharp injuries, factors associated, health care workers.*

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The collected data was cleaned, entered and analyzed using SPSS version 17 statistical software. Descriptive part of the result was presented using frequency tables, graphs and for the analytic part, association between dependent and independent variables was checked using binary logistic regression and p value less than 0.05 as significant level at 95% CI. Multivariate logistic regression was done to see the interaction effect of confounding variables.

Result: This study revealed that from 449 selected study participants, 432 (96.2%) were responded the questionnaire. From the total study participants, 295 (68.3%) were from health centres and 137 (31.7%) were from hospitals. The one year prevalence of sharp and needle stick injury was 22.2%. The multivariate logistic regression indicated that sex of the worker(AOR:2.46,95% CI (1.37,4.42)), monthly salary (AOR:2.96,95% CI (1.57,5.24)), information access on health and safety (AOR:2.31,95% CI (1.37,3.95)), sleeping disturbance problem(AOR:2.81,95% CI (1.57,5.04)), Job sati sfaction (AOR:0.38, 95% CI (0.23,0.65)) and Job stress (AOR:2.22,95% CI (1.32,3.74)) were the predictors of sharp and needle stick injuries. Conclusion: In this study, the prevalence of sharp and needle stick injury had showed a decrease in magnitude from the previous similar study results. Job stress, job satisfaction, having sleeping disturbance problem, having health and safety information access and low monthly salary had showed a significant association with the occurrence of sharp and needle stick injury.

Keywords : needle stick/sharp injuries, factors associated, health care workers.

I. Introduction

Needle sticks and sharp injuries (NSSIs) have been recognized as one of the occupational hazards among health care workers [1]. Occupational exposures to percutaneous injuries are substantial source of infections with blood borne pathogens among health care workers and can cause substantial health consequences and psychological stress for Health Care Workers and their loved ones [2]. Needle sticks and sharp injuries increase risk of spread of diseases like HIV, Hepatitis B and Hepatitis C [3, 4].

Strategies are available to prevent infections due to sharps injuries including education of Health Care Workers on the risks and precautions, reduction of invasive procedures, use of safer devices and procedures and management of exposures. In the industrialized world, occupational surveillance assess and monitor the health hazards related to blood borne pathogens and prevention measures reduce the risk of transmission. In contrast, in developing countries, exposure and health impacts are rarely monitored and much remains to be done to protect Health Care Workers from such risks that cause infections, illness, disability and deaths that may in turn impact on the quality of health care [5].

Studies have shown that reductions of 83% and 89% in the number of needle sticks after the introduction of safety engineered intravenous catheters [6,7] and 74% reduction in the number of injuries from needles for drawing blood after the introduction of safety engineered alternatives [8]. A study done among Health Care Workers in Malaysian Hospital reported that, 66.1%

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had the misconception that needles should be recapped after use and 52.5%know about needleless safety devices [9].

Studies done in different countries indicated that the magnitude of needle stick or sharps injuries among HCWs was very high [9, 10, 11, 12, 13]. A study done among Health Care Workers\s in Malaysia in 2008 indicated that the prevalence of needle stick or sharps injury was 23.5% [9]. Also studies done among HealthCare Workers in a general hospital in Malaysia in 2005, Saudi Arabia in 2002, Nepal in 2003 and Iran in 2009 showed aprevalence rate of 24.9%, 74%, 74% and 39.4% respectively [10, 11, 12, 13].

Needle stick injury exposure in African countriesis higher than elsewhere and a significantpublic health issue due to the fear of occupational infections faced by ill paid, ill protected and overworked health-care workers. Similar studies in Ethiopia show that 32% of the needle stick injuries were reported in the Sidama zone, 31% in north western Ethiopia and 66% in 52of the health facilities. [22]

Certain groups of individuals are at greater risk than others because of the nature of their work. [16]. Medical, dental, nursing and midwifery workers are at higher risk for occupational exposure to blood borne pathogens via sharp injuries [13]. A study conducted among Malaysia hospital workers reported that medical assistants appeared to face the highest risk of needle stick injury followed by nurses, doctors and health attendants [18]. On the other side, numerous studies have found nurses to be the commonest group of Health Care Workers experiencing needle stick injuries [16].

Out of the total of 94 documented and 170 possible cases of occupational HIV infection had been identified worldwide up to 1997, nearly two thirds of cases were reported from the United States [20]. This could be due to the fact that most countries, especially those with a high population prevalence of HIV infection, have never instituted surveillance systems that would capture data on such case [21]. Needle stick and sharp injuries need to be reported to the relevant authorities so as to facilitate and ensure appropriate counselling; prophylaxis orearly treatment .But most health care workers expose themselves with unnecessary risk of not reporting thus depriving themselves of the benefit of intervention [9].

Ethiopian government is currently expanding health institutions in all parts of the country and a number of health professionals are employed in these institutions to provide health car services. Their working environment must be safe and free from occupational hazardse specially from Needle stick and sharp injuries. But asfar my knowledge is concerned there is no scientific study which indicates the magnitude of the problem and its determinant factors in Amahara regional state. As a result this study is designed to investigate the prevalence and associated factors of Needle stick and sharp injuries among health care workers in governmental health institutions east gojjam zone. The result of the research is very important for policy makers, program implementers and workers to reduce the problem.

II. Methodology

a) Study Design

An institutional based cross sectional study design was conducted among health care workers.

b) Study area and period

This study was done among Health Care Workers in east gojjam zone from September to October 2012. The capital city of east gojjam zone, Debre Markos own is found 292 kilometers away from Addis Ababa, capital city of Ethiopia. East gojjam zone is one of the 11 zones in the Amahara regional state. According to the 2007 census report, it has a total population of 2,152,671 of which 1,066,094 are males and 1,086,577 were females. According to east gojjam zone health bureau report, the zone has two hospitals and 32 health centers.

c) Source Population

Source population are all clinical health care workers who are working in east gojjam zone governmental hospitals and health centers.

d) Study Population

Study population are the selected Health Care providers who are working at least for one year in hospitals and health centers.

e) Sample size determination

Sample size was determined using the following single population proportion formula with an assumption of significance level 95%, degree of error 5% and proportion of Needle Stick and Sharps Injuries among health care workers was 23% [9].n = (1.96)2 (0.23) (0.77) = 272(0.05)2 Since we have used multiple stages to get the study subjects, the sample size must be multiplied by a design effect of 1.5 and with 10% contingency for non-response rate, a total of 449 study subjects were included in the study. First, health care facilities were divided into two i.e health centres and hospitals..Proportional allocation was done for hospital and n= (Z _/2) 2 *P (1-P)d2 health centre workers and using random sampling technique 8 health centres from the total 32 health centres and one hospital from the total two hospitals were selected. Finally, proportional allocation was done for each professional category and study subjects from each health institution was selected randomly.

f) Data Collection

A pretested and structured Amharic version questionnaire was used to conduct self administered

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interview among the selected Health Care Workers. Data was collected through self administered questionnaire. Data collection process was supervised by one supervisor from each health institution. Data was collected on sociol demographic characteristics of respondents, work environment determinant factors and behavioral determinant factors. Job stress and job satisfaction of respondents was assessed using standardized workers response questionnaire scales.

g) Study Variables

The outcome variable of this study is needle stick and sharp injury status and the explanatory variables are

- ***Socio demographic factors*** like sex, age, religion, ethnicity, marital status, level of education, monthly salary, work experience in years
- ***Work environment determinants*** like health and safety information access, and injection safety training, workplace supervision, working department
- ***Behavioural determinants like*** Alcohol consumption, khat chewing, cigarette smoking, sleeping disorder, job satisfaction, job stress and personal protective equipment use.

h) Operational Definition

- ***Needle sticks and sharps injury:*** Any kind of injury which is occurred on the health care worker in relation to his/her job in the health institution within 6 months period.
- ***Job Satisfaction:*** A worker who have scored above or equal to the mean score was considered to have job satisfaction and below the mean score was considered to be dissatisfied by his/her job.
- ***Job Stress:*** A worker who have scored above or equal to the mean score was considered to have a problem of job stress and below the mean score was considered to have job stress.
- ***Health and Safety Information:*** A worker who have got any kind of information in-one year period through any kind of media about health and safety of health care workers.
- ***Health and Safety Training:*** Trainings given to a worker about health and safety to health care workers.
- ***Work Place Supervision:*** workers perceived regular supervisions done by health and safety responsible bodies in the department and working rooms.
- Sleeping problem: The presence of sleeping problems when the worker is at work in the health care unit.

i) Data management and quality control

The question naire was administered through Amharic version questionnaire. Sort of orientation was given on he aim of the study and procedures how to fill the questionnaire. Pre testing was doneon 10% of the sample size who are working in health institutions not included in the study and modifications of the questionnaire were under taken. The collected data was checked for completeness every day by the supervisors and principal investigator.

j) Data processing and analysis

Data was entered and analyzed using SPSS version 16 windows and descriptive statistics, binary logistic regression and multiple logistic regressions was computed at 95% CI to identify predictors of needle stick and sharps injury status with p value less than 0.05 as a significant level. Crude and adjusted odds ratios with confidence interval were calculated to see the presence of the association with the outcome variable and to observe the interaction effects of confounding variables, respectively.

k) Ethical Clearance

Ethical clearance was obtained from the institutional review board of Debre Markos University. Permission to conduct the research was also obtained from, east gojjam health desk and from respective districts and health institution. Verbal consent was obtained from each study participants. Participation were informed through SSS the questionnaire about the interview based on willingness, the right to withdraw at any time and confidentiality was ensured using code numbers, not using identifiers and keeping questionnaires locked.

III. Result

a) Socio demographic characteristics

From the total 449 study subjects, 432 (96.2%) of them were included in the study. Among these 295 (68.3%) were from health centres and 137 (31.7%) were from hospital. The mean and median age of the workers is 33.32 and 26 + 1.3 years, respectively. From the total 8respondents 247 (57.17%) were male health care workers and 402 (93%) were Orthodox Christians by religion. One hundred ninety four (45%) were married and the mean monthly salary of workers is 1528 Ethiopian Birr. Workers have a mean work experience of 6.2 years in health institutions. From the total health care workers included in the study 212 (49 %) were nurses by profession. The table below indicates the socio demographic characteristics of health care workers.

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Table 1 : Socio demographic characteristics of health care workers in west gojjam zone, Amahara regional state, Ethiopia, November 2012

Variables	Category	Number	Percent
Sex of worker	Male	247	57.17
	Female	185	42.82
Age of worker	Above mean (>33.3 years)	374	86.57
	Below mean (≤33.3 years)	58	13.43
Religion	Orthodox	402	93.06
	Muslim	13	30.09
	Protestant	17	3.93
Marital status	Married	194	44.90
	Single	216	50
	Divorced	22	5.1
Monthly salary	Above the mean (>1528 ETB)	236	54.63
	Below the mean (≤1528 ETB)	196	45.37
Work experience	Above the mean (>6.2 years)	339	78.47
	Below the mean (≤ 6.2 years)	93	21.53
Educational status	Less than grade 10	6	29
	Certificate	9	20
	Diploma	64	206
	First degree	15	77
	Medical doctor	2	4
Health care worker Profession	Cleaner	76	17.6
	Nurse	212	49.0
	Health officer	43	10.0
	Medical doctor	5	1.2
	Midwifery	18	4.2
	Laboratory	63	14.6
	Other*	15	3.5

*it refers to pharmacy, environmental health, optometry

b) Working Environment Characteristics

From the total health care workers, 295 (68.3%) were working in health centres and 328(75.9%) worked in the night shift the previous years. From the total respondents, 231 (53.47%) had got information about infection prevention and 357 (82.64%) knew that there is a safety rules and regulations in their institution. One hundred forty three (33.1%) had got training on infection prevention and 184 (42.6%) had been supervised by the concerned bodyon the application of infection prevention principles and rules. Among the total respondents, 360 (83.3%) have safety box in their working rooms to dispose infectious wastes including needle stick and sharp materials and 87 (20.1%) of the respondents had reported that there are contaminated needle stick and sharp materials around their working area. From the total respondents, 304 (70%.4) had reported the safety box had torn out.

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Table 2 : Workers behaviour characteristics of health care workers in west gojjam zone, Amahra regional state, Ethiopia, November 2012

Variable	Response	Number	Percent
Working institution	Health centre	295	68.3
	Hospital	137	31.7
Night shift work	Yes	328	75.9
	No	104	24.07
Health and safety information access	Yes	231	53.47
	No	199	46.06
Training on infection prevention and control	Yes	143	33.10
	No	289	66.89
Supervision by other bodies	Yes	184	42.59
	No	248	57.41
Knowledge on safety rules and regulations	Yes	357	82.64
	No	75	17.36
Presence of safety box in the room for recapped needles	Yes	360	83.3
	No	72	6.7
Presence of contaminated needles and sharp materials in the working area	Yes	87	20.1
	No	345	79.9
Condition of the safety box in the room	Overfilled	54	12.5
	Torn out	304	70.4
	Empty	55	12.7
	Other	19	4.4

c) Workers behaviour characteristics

From the total respondents, 90 (20.8%) have a problem of sleeping disturbance during worktime and 26 (6%) and 19 (4.4%) of the respondents chew khat and smoke cigarettes, respectively. One hundred ninety five (45.14%) of the workers were satisfied by their job and(55.8%) have job related stresses. From the total study participants, 397 (91.9%) believe that needle stick and sharp injury is a preventable problem and 403 (93.3%) believes that sharp and needle stick injury have high risk of infectious diseases. Two hundred sixty one (60.4%) used Personnel protective equipment and/or gloves when it was necessary.

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Table 3 : Workers behaviour characteristics of health care workers in west gojjam zone Amahra regional state, Ethiopia, November 2012

Variables	Category	Number	Percent
Sleeping disturbance problem	Yes	90	20.83
	No	342	79.17
Khat chewing	Yes	26	6.02
	No	403	93.3
Smoke cigarettes	Yes	21	4.8
	No	411	95.2
Job satisfaction index	Above the mean score	195	45.14
	Below the mean score	237	54.86
Job stress index	Above the mean score	241	55.79
	Below the mean score	191	44.21
Belief on preventability of needle stick and sharp injury	Preventable	397	91.9
	Not preventable	35	8.1
Belief on risky nature of needle stick and sharp injuries	High risk	403	93.3
	Moderate risk	25	5.8
	Low risk	4	1
PPE and glove use practice when necessary	Never	34	7.9
	Some times	53	12.3
	Most of the time	84	19.4
	All of the time	261	60.4

d) Prevalence and factors associated with sharp and needle stick injury

In the last one year, a total of 96 (22.2%) health care workers had experienced at least one sharp and needle stick injury and from these 38.2 injuries were not reported totally to the concerned body.

i. *Socio demographic factors*

In the bivariate analysis, workers age, religion, educational status, marital status and work experience did not show any kind of association with the occurrence of needle stick and sharp injury among health care workers in health institutions. However, sex of the worker (COR2.13, 95% CI: 1.31, 3.14) and monthly salary of worker (COR 1.91, 95% CI: 1.19, 3.07) had showed a significant association with sharp and needle stick injury.

In multivariate analysis, the result revealed that males have a probability of more than two times in experiencing needle stick and sharp injury compared with females (AOR 2.46, 95% CI: 1.37, 4.42) . Also workers who can earn monthly salary of below 1528 ETB have a probability of about three times more likely to be injured due to sharp and needle sticks (AOR 2.96, 95% CI:1.57,5.24).

ii. *Work environment factors*

In the bivariate analysis of work environmental factors, health care workers who are working at hospitals are 1.86 times probability of affected by needle stick and sharp injuries (COR1.86, 95% CI: 1.17,2.98). Also infection prevention and safety information access (COR2.11, 95% CI: 1.33, 3.35) and getting training on infection prevention and safety (COR 2.19, 95% CI: 1.28, 3.77) had significant association with the occurrence of sharp and needle stick injury in health care workers. Health care workers who had got information on infection prevention and safety had a probability of more than 2 times in experiencing injury compared with their counterparts. Similarly health care workers who had no trainings on infection prevention and safety are more than two times probability of having needle stick and sharp injuries. Regular supervision of health care workers working site reduces the occurrence of sharp and needle stick injury among health care workers by 1.75 times (COR 1.75, 95% CI:1.09,2.93).

In the logistic multivariate analysis of cofounder variables which are significant in the bivariate analysis, only provision of information on infection prevention and safety remains statistically significant. Workers who had got information on infection prevention are more than two times probability of reducing sharp and needle stick injury (AOR 2.31, 95% CI:1.37, 3.95).

iii. *Behavioural Factors*

Among the worker behaviour related factors in the bivariate analysis, sleeping disturbance problem (COR 0.36, 95%CI: 0.22, 0.61), job satisfaction (COR

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0.32, 95% CI: 0.19, 0.52) and job stress (COR 2.33, 95%CI: 1.46, 3.70) showed a significant association with the occurrence of needle stick and sharp injuries. Workers who have been stressed due to their work have 2.33 times probability of experiencing sharp and needle stick injury and similarly hose who have not been satisfied by their job have a 68% probability of experiencing injury. However, khat chewing, and smoking cigarettes have no any statistical significant association with the occurrence of needle stick and sharp injuries. On the other side, khat chewing (COR 1.63, 95%CI: 0.55, 4.84) and smoking cigarettes (COR0.55, 95% CI: 0.22, 1.41) have no statistical significant association with the occurrence of needle stick and sharp injury in health care workers.

In the logistic multivariate analysis, only job satisfaction (AOR 0.38, 95%CI: 0.23, 0.65) and Job stress (AOR 2.22, 95%CI: 1.32, 3.74) are statistically significant with the occurrence of sharp and needle stick injury. Workers who are not satisfied by their job are 62% more likely to exercise sharp and needle stick injury compared with their counter parts. Also who are who are stressed due to their job are more than two times to experience sharp and needle stick injury compared with workers who do not stressed due to their job.

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Table 4 : Factors associated with sharp and needle stick injury among health care workers in west gojjam zone, Amahara regional state, Ethiopia, November 2012

Variables	Category	Injury status		COR (95 % CI)	AOR (95 % CI)
		Yes	No		
Sex of worker*	Male	68	179	2.13 (1.31,3.14)	2.46 (1.37, 4.42)
	Female	28	157	1	1
Age of worker	Above mean (>33.3)	85	289	1	
	Below mean (≤33.3)	11	47	1.26 (0.62,2.53)	
Religion	Orthodox	88	314	1	
	Muslim	4	9	0.63 (0.19,2.10)	
	Protestant	4	13	0.29 (0.29,2.86)	
Educational status	Less than grade 10	6	29	2.42 (0.36,16.34)	
	Certificate	9	20	1.11 (0.17,7.22)	
	Diploma	64	206	1.61 (0.29,8.99)	
	First degree	15	77	2.57 (0.43,15.3)	
	Medical doctor	2	4	1	
Marital status *	Married	29	165	0.27 (0.035,2.09)	0.11 (0.01,0.99)
	Single	66	150	0.11 (0.01,0.82)	0.5 (0.23,0.54)
	Divorced	1	21	1	1
Monthly salary*	Above the mean (>1528)	64	172	1	1
	Below the mean (≤1528)	32	164	1.91 (1.19,3.07)	2.96 (1.57,5.24)
Work experience*	Above the mean (>6.2)	80	259	0.67 (0.37,1.22)	0.87 (0.44,1.72)
	Below the mean (≤ 6.2)	16	77	1	
Institution type *	Health centre	55	240	1	
	Hospital	41	96	1.86 (1.17,2.98)	1.58 (0.91,2.77)
Night work shift	Yes	74	254	0.92 (0.54,1.58)	
	No	22	82	1	
Health and safety information access*	Yes	38	193	1	1
	No	58	141	2.11 (1.33,3.35)	2.31 (1.37,3.95)
Training on infection prevention*	Yes	20	123	1	
	No	76	213	2.19 (1.28,3.77)	1.04 (0.57,1.92)
Supervision by concerned bodies *	Yes	34	151	1	1
	No	82	165	2.20 (1.39,3.46)	1.42 (0.76,2.65)
Sleeping disturbance problem*	Yes	34	56	1	
	No	62	280	0.36 (0.22,0.61)	2.81 (1.57,5.04)
Khat chewing	Yes	4	22	1.63 (0.55,4.84)	
	No	92	311	1	
Smoke cigarettes	Yes	7	14	0.55 (0.22,1.41)	
	No	89	332	1	
Job satisfaction index*	Above the mean score	64	131	0.32 (0.19,0.52)	0.38 (0.23, 0.65)
	Below the mean score	32	205	1	
Job stress index*	Above the mean score	38	203	2.33 (1.46,3.70)	2.22 (1.32,3.74)
	Below the mean score	58	133	1	

IV. Discussion

The study revealed that the one year prevalence of needle stick and sharp injury is 22%. This finding is similar with a study done in Malaysia hospital in 2010 (23.5%) [9] and in 2005(24.9%) [10]. However this result is lower than studies in Saudi Arabiain 2002 (74%) [11], Nepal in 2003 (74) [12] and Iran in 2009 (39.4%) [13]. These differences are due to the fact that there are interventional efforts in infection prevention and safety activities.

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The statistical analysis in this study indicates that male workers are more victims as compared with female workers. This may be due to the fact that females are better in safety precautions compared to males. But another study in Malaysia indicated that there is a significant association between sex of the worker and the occurrence of sharp and needle stick injury among health care workers. [10].This difference may be disparities in socioeconomic development of workers. In this study age of the worker did not showed a significant association with the prevalence of sharp and needle stick injury. However, a study in Malaysia indicated that there is a statistical difference based on sex of worker [10].

This study revealed that three hundred ninety seven of health care workers (91.9%) believe that needle stick and sharp injury is a preventable public health problem but only 261 (60.4%)used Personnel Protective Equipment during their work. It also indicated that from the total workers 328 (75.9%) works in night shifting hours and 90 (20.8%) have a problem of sleeping disturbance which has a significant role in exposing to sharp and needle stick injuries. The statistical analysis result indicates that working at night shift have no significance association with prevalence of needle stick and sharp injuries. But having sleeping disturbance problem during work have a statistically significant effect on prevalence of sharp and needle stick injury.

This study indicated that 231 (53.47%) had got information on infection prevention from different sources. However, only 143 (33.1%) had got formal trainings on infection prevention and safety in the last one year. Getting information on health and safety has a statistically significant association with the prevalence of sharp and needle stick injury but getting training on infection prevention and safety has lost its significance in the logistic multivariate analysis. From the total health care workers working sites, only 184 (42.6%) had been supervised and there is a statistical significance difference on the prevalence of sharp and needle stick injury. In this study divorced health care workers and workers who earn below the mean monthly salary are statistically victims to sharp and needle stick injury. Different studies indicated that job satisfaction and stress had a great role on the prevalence of sharp and needle stick injury. This study revealed that 195(45.14%) of workers had been satisfied by their job and 241 (55.79%) had been stressed in relation to their job. Job satisfaction and job stress had showed statistically significant association with the prevalence
of sharp and needle stick injury.

V. Conclusion and Recommendation

In this study the prevalence of sharp and needle stick injury is low and had showed a decrease in magnitude from the previous study results. Job stress, job satisfaction, having sleeping disturbance problem, having health and safety information access and low monthly salary had showed a significant association with the occurrence of sharp and needle stick injury.

Therefore to reduce this problem among health care workers:

1. Regular provision of information by ministry of health, regional health office and different nongovernmental organizations on infection prevention and safety should be strengthened at all levels through different means to health care workers.
2. Ministry of health, Health care institutions management and regional health burea should strengthen mechanisms to improve job satisfaction of workers.
3. Efforts by Ministry of health, Health care institutions management, regional health bureau and the worker him/herself should be strengthened to reduce job stressors among health care workers.
4. For workers who are working in night shifts should get sleep health education.
5. Low rate paid workers are victims of sharp and needle stick injury. Therefore special attention should be given to these workers in the infection prevention activities.
6. The effectiveness of infection prevention training is not as such attractive in reducing injuries. Therefore, the training modality, training type, materials, methods and in general the setup should be assessed totally to make it an effective protective method.

References Références Referencias

1. NIOSH, preventing needle stick injuries in health care settings. Washington, DC:National Institute for Occupational Safety and Health, 1999. p. 2000-2108.
2. Do, A.N., Ciesielski, C.A., Metler, R.P., Hammett, T.A.,Li,J., Fleming, P.L. Occupationally acquired human immunodeficiency virus (HIV) infection: National case.surveillance data during 20 years of the HIV epidemic in the United States. Infection Control Hospital Epidemiology, 2003. 24: p. 86-96.
3. CDC NIOSH, What every worker should know: How to protect yourself from needle stick injuries. Publication No. 2000-2135.
4. Puro, V., De Carli, G., Petrosillo, N., Ippolito, G., Risk of exposure to blood borne infection for Italian healthcare workers, by job category and work area. Infection Control and Hospital Epidemiology, 2001. 22(4): p. 206–210.
5. Dr Annette Prüss-Ustün1, Dr Elisabetta Rapiti1, Dr. Yvan Hutin2: Estimation of the global burden of disease attributable to contaminated sharps injuries

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among healthcare workers: World Health Organization, Protection of the Human Environment (PHE), Geneva, Switzerland 2005.
6. Jagger, J., Bentley, M.B., Injuries from vascular access devices: High risk and preventable. Collaborative EPIN Surveillance Group. Journal of Intravenous Nursing, 1997. 20: p. 33–39.
7. Mendelson, M.H., Chen, L.B.Y., Finkelstein, L.E., Bailey, E., Kogan, G., Evaluation of asafety IV catheter (Insyte Autoguard, Becton Dickinson) using the Center for Disease Control and Prevention (CDC) National Surveillance System for Hospital Healthcare Workers Database. Infection Control Hospital Epidemiology, 2000. 2: p. 111.
8. Lamontagne, F., Abiteboul, D., Lolom, I, et al., Role of safety-engineered devices in preventing needle stick injuries in 32 French hospitals. Infection Control Hospital Epidemiology, 2007.28: p. 18-23.
9. Lekhraj R., Rosidah Z., Azhar Md., Leong W: Needle Stick and Sharps Injuries and Factors Associated Among Health Care Workers in a Malaysian Hospital: Europea Journal of Social Sciences – Volume 13, Number 3 (2010).
10. Lee, L.K. and Hassim, N., Implications of the prevalence of needle stick injuries in a general hospital in Malaysia and its risk in clinical practice. Environment Health and Preventive Medicine, 2005. 10: p. 31-41.
11. Maqbool, Alam, Knowledge, Attitude and Practice among Healthcare Workers on Needle Stick Injuries. Annals of Saudi Medicine, 2002. 22 (5-6): p. 1-4.
12. Gurubacharya, D.L., Mathura, K.C. and Karki, D.B., Knowledge, Attitude and Practice among Healthcare Workers on Needle Stick Injuries. Kathmandu University Medical Journal, 2003.1(2): p. 91-94.
13. Hofranipour, F.G., Asadpour, M., Ardebili, H.E., Niknami, S., Hajizadeh, E., Needle stick/sharp injuries and determinants in nursing care. European Journal of Social Sciences, 2009. 2(2): p. 191-197.
14. Pruss-Ustun, A., Rapiti, E., Hutin, Y., Estimation of the global burden of disease attributable to contaminated sharp injuries among health-care workers. American Journal of Industrial Medicine, 2005. 48: p. 482-490.
15. Mohammad H. Evaluation of Needle Stick Injuries among Nurses of Khanevadeh Hospital in Tehran. IJNMR/Autumn 2010; Vol 15, No 4Jagger, J., Risky procedures, risky devices. Advances in Exposure Prevention, 1994. 1: p.16.
16. Y W Ng., I Noor H. Needlestick Injury Among Medical Personnel in Accident and Emergency Department of Two Teaching Hospitals: Med J Malaysia Vol 62 No 1March 2007.
17. Occupational Safety and Health Administration (OSHA), Final rule on occupational exposure to blood borne pathogens. 56 Fed Reg. 64004 1991.
18. E. O. Orji, O. B. Fasubaa, Uche Onwudiegwu, F. O. Dare and S. O. Ogunniyi Occupational health hazards among health care workers in an obstetrics and gynaecology.unit of a Nigerian teaching hospital. Journal of Obstetrics & Gynaecology: 2002, Vol. 22, No. 1, Pages 75-78.
19. Rapparini, C., Occupational HIV infection among health care workers exposed to blood and body fluids in Brazil. American Journal Infection Control, 2006. 34: p. 237-240.
20. Jagger, J., Caring for Healthcare Workers: A Global Perspective. Infection Control and Hospital Epidemiology, 2007. 28 (1):
21. Tadesse M, Tadesse T. Epidemiology of needle stick injuries among health-care workers in Awassa City: Trop Doct. 2010 Apr; 40(2):1113.

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