Public Health and Preventive Medicine
Vol. 2, No. 4, 2016, pp. 25-32
http://www.aiscience.org/journal/phpm
ISSN: 2381-778X (Print); ISSN: 2381-7798 (Online)

Assessment of Mine Workers Knowledge, Practice and Attitude Regarding Safety Masseurs and First Aid

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Abstract

Introduction: A landmine is an explosive device, concealed under or on the ground and designated to destroy or disable enemy targets as they pass over or near the device, landmine is a public health priority in Sudan which is a major cause of morbidity and mortality in Sudan, landmines continue to kill nearly 20,000 people every years. The aim of the current study was to evaluate the effect of educational programme regarding safety measures & first aids on knowledge, practices and attitude of mines workers in the field of demining in Kassala State. *Method:* A Quasi-experimental based study conducted in Kassala mine field- Sudan, between April 2012 to September 2013. The sample size consist of 90 workers from the national mine action Kassala sub office, Data were collected by using questionnaire, observational check list and reporting sheet for injury designated for the study. Analysis was performed by statistical package for social sciences (SPSS version 20); t-test was used to analyzed quantitative data and chi-squire used for qualitative data. For all test the significance level was set as $p < 0.05$. *Result:* Of 90 workers interviewed result reveals that a highly significance differences in all phases of educational programme in worker's knowledge towards land mine, and its occupational hazards & safety measured, with highly change in worker's knowledge in post and follow-up educational programme in comparing with worker's level of knowledge reported in pre - educational programme where Ps was (0.001) respectively. Regarding the worker's attitude of prepared all personal protection equipment, safety measures and work tools needed within the minefield. The study revealed that there is a statistically significance difference between three phases of educational programme toward the worker's attitude within the minefield with Ps (<0.001). according to mine workers practice in items related to using & wearing Sanitary demining equipments, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.001). *Conclusion:* The study concluded that workers knowledge, practice and attitude regarding safety masseur's and first aid are inadequate in pre-test and there was highly change in workers knowledge in post and follow- up educational program, it recommended that periodic education and practice to worker about occupational hazard and first aid, should be done more research on the area to identify the factors that affecting workers safety and save life.

Keywords

Educational Program Knowledge, Practice and Attitudes, Nursing Khartoum –Sudan

Received: August 10, 2016 / Accepted: August 19, 2016 / Published online: September 3, 2016

1. Introduction

In recent years the international community has become increasingly aware of the scale and severity of the problem related to landmines. According to the International Mine Action Standers (IMAS) a land mine is an explosive device, concealed under or on the ground and designed to destroy or disable enemy targets as they pass over or near the device.

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Such devices are typically detonated automatically by way of pressure from the target stepping or driving on it, though other detonation mechanisms may be possible. The device may cause damage either by a direct blast or by fragments that are thrown by the blast. [1] There are two types of land mines. The Anti-Tank mine is much larger and filled with more explosive, hence making it able to defeat a tank. Usually (but not always) AT mines are also designed to have a minimum operating pressure so that, unlike AP mines, people do not set them off10. The usual aim of AT mines is to achieve a 'mobility kill' by blowing the track off a tank, immobilizing it and thus making it an easier target, though there are some AT mines that are also designed to detonate under the belly of the tank the anti personnel (AP) mines are have hundreds of different types of AP mine, though probably only about 50 or so are found in any significant numbers in the mine affected countries around the world. [2] Land mines continue to kill nearly 20,000 people every year, even decades after the ends of the conflicts for which they were place. At war since 1983, Sudan has an as yet undefined landmine contamination problem. Most of this problem is concentrated in the southern areas which have faced the most fighting. Most mine contamination occurs around former government garrison towns and along major roads. Mine present public safety hazard, straining already poor health systems. They create economic blockages, as mined field remain fallow and mined roads prevent the ordinary exchange of goods and services. They threaten the return of displaced persons to homes made uninhabitable by the remnants of war. Most significantly, they pose a direct threat of injury and death; there have been at least 3,700 mine victims in Sudan to date, Kassala is most affected state in east and the history of mine referred to Eritrea and Ethiopian war in 1984 and more mines in 1996 and devices washed by Algash river and bordering localities affected and no areas marked by the warring factions, gathered general victim data, 449 victims and surveyed 9roads, and cleared more than 100,000sqm. [3] However, landmines don't stop killing when the fighting is over. They don't know the difference between a soldier and a child. An estimated 15,000 to 20,000 people in over countries, mostly innocent civilians, are injured or killed by landmines every year. Those who survive a landmine accident often lose their arms, legs, sight or hearing. The social, economic and environmental costs of landmines are great – the wounds left by landmines affect survivors for the rest of their lives and the large pieces of land that are suspected of having landmines cannot be used for growing food or grazing animals. Animals also become victims of landmines. Some of the most severely mine-affected areas include Afghanistan, Angola, Bosnia-Herzegovina, Colombia, Nicaragua, Cambodia, Chechnya and Mozambique. [4]

2. Methods

This is a Quasi-experimental design based study. Aimed to assess mine workers knowledge, practice and attitudes regarding safety measures and first aid in Kassala mine field– Sudan. The study population included all adult deminers between April 2012 to September 2013. The sample size consist of 90 workers from the national mine action Kassala sub-office were selected as total converge, the data was collected by used modified tools from literature review and from National Mine Action Center Kassala sub office it contains main 4 tools as follows: Tool I: Structured questionnaire sheet, It includes two main parts, Demographic characteristics of the study subjects and 57 Questions related to mine worker's knowledge & attitudes towards application of safety measures & first aids in the field of demining in Kassala State. This part was applied 3 times before of the program (pre-test), immediately at the end of the program and three months after the program implementation (post-test). Tool II-Observational checklists which include an observational checklist to assess mines worker's performance regarding safety measures & first aids in the field of demining. It was developed based on National Technical Standers Guidelines (NTSG) and quality assurance check list of National Mine Action Centre (NMAC) it was included 7 forms of first aids for (Burn, bleeding, wound, bites, CPR, Poisoning, fractures) and personal protective equipments and sanitary equipment. Tool III Reporting Sheet for injury this tool was developed by the researcher to record the incidence of any accident or injury occurs resulting from demining operations during the period of the study. Tool IV Educational program Based on worker's knowledge and practice assessed in pre-test and review of related nursing literature, the educational Programme was developed. The steps of the program was include: Preparation of the content (definition of landmines, types, historical background, personal protective equipment, types and methods of mine clearance, major mine disaster, mine action pillars…etc), Preparation of suitable media for teaching the operational demining and the Implementation of the program: The educational program was implemented for each group of operation demining in Kassala mine filed. It was implemented in different sessions; each session was taken about one hour. the educational programme based on the mine worker's needs and the review of related literature which carried out between july-2012 to march-2013 a period of 9 months to develop. Program implementation pre-test and two post-tests was done to evaluate the effect of the program, the first post test was done immediately at the end of the program, and the second post test was done three months after program implementation. The developed educational programme was tested for validity by expertise from head of demining camp, Medical surgical nursing professor and nursing education professor in the field

and reliability of tool was tested by test – retest modifications was done.

This study was carried out between April-2012 to September-2013, a period of 18 months to collected from Saturday until Wednesday; worker's selection was done in accordance with the predetermined sample selection criteria, both out of hands items including time, selected appropriate sample criteria. Workers who met the selection criteria were asked to participate in the study. Each worker was informed about the purpose of the study. An official letters from the faculty of high science and Scientific research, National Al-Ribat University to the directors of national mine action center, Kassala sub office after explained The aim of the present study to the director of the study setting to taken his permission to carry out the study. Tool was developed and was tested for content validity by experts in the field and reliability was done. An agreement to participate was taken from mine action operation involved in the study, after explanation of the purpose of the study, after obtaining his consent for participation in the study and informed that all the collected information was confidential and was used only for the purpose of the study. Each operational deminer was individually interviewed to assess his knowledge about safety measures and first aid. Each operational deminer was observed for his practice towards safety measures & first aids. Collected data was coded, organized, tabulated and analyzed. Descriptive statistics was used to present the data. Quantitative data was analyzed by using t-test and suitable non –parametric test as needed. Chi-square was used for qualitative data. For all tests, the significance level was set at $p < 0.05$.

3. Result

Among of 90 workers participate in the present study was showing that: all respondents were males (100%), aged between 20- 29 years (43.3%) and of moderate education (primary and secondary). The worker's marital status is single (50.0%). Married is (44.4%), divorced is (04.4%). (67.8%) occupied as deminer and had 2-5 years of experience (48.9%) and they attend 2-3 work shop (42.2%). There for Illustrates comparison between pre, post and follow-up educational program regarding worker's knowledge towards landmine, and its occupational hazards & safety measured. it can be seen that there are a highly significance differences in all phases of educational program in areas related land mine, occupational hazards & safety measured with highly change in worker's knowledge in post and follow-up educational program in comparing with worker's level of knowledge reported in pre - educational program where Ps was (0.001) respectively. In Comparison between pre, post and follow – up the post educational program regarding the worker's attitude of prepared all personal protection equipment, safety measures and work tools needed within the minefield. The table revealed that there is a statistically significance difference between three phases of educational program toward the worker's attitude within the minefield with Ps (<0.001). On other hand Demonstrates Comparison between pre, post and follow- up the educational program as regard worker's acquired protective knowledge & right action during work. The table revealed that there is a significance difference between all phases namely; pre, post and follow – up the educational program with Ps (<0.001). Shows comparison between Pre, Post and Follow-up an educational program according to mine workers practice in items related to using & wearing protective equipment, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.001). describes Shows comparison between Pre, Post and Follow-up an educational program according to mine workers practice in items related to using & wearing Sanitary demining equipment, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.001). Shows comparison between Pre, Post and Follow-up an educational program according to mine workers corrective practice actions in items related to First aids score in the situation of Heatstroke, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.001). Shows comparison between Pre, Post and Follow-up an educational program according to mine workers corrective practice actions in items related to First aids score in the situation of bone fracture, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.025). Shows Relation between age with knowledge and attitude and practice, the figure reveals that there is a statistically significance relations were found between mine workers age and their practice and attitude in the mine action, first aid and applying preventive measures.

Table 1. Distribution of the studied cases according to demographic data a (N=90).

Items	Frequency	%
Sex		
Male	90	100.0
Female	0	0.0
Age		
20 – 29	39	43.3
30 – 40	37	41.1

Items	Frequency	%
>50	14	15.6
Education		
Illiterate	10	11.1
Primary	23	25.6
Prep	9	10.0
Secondary	31	34.4
University	15	16.7
Postgraduate	2	2.2
Marital		
Single	45	50.0
Woodside	1	1.1
Divorced	4	4.4
Married	40	44.4
Occupation		
Team leader	14	15.6
Deminer	61	67.8
Medic	3	3.3
Driver	9	10.0
MRE-personnel other	3	3.3
Experience (years)		
<2	21	23.3
2 – 5	44	48.9
6 – 10	16	17.8
>10	9	10.0
Work shops		
<2	24	26.7
2 – 3	38	42.2
4 – 6	13	14.4
>6	15	16.7

The table above illustrated the Sociodemographic characteristics of workers. The table reveals that the (43.4%) of mine workers were from age group 20-30 years. on the other hands all of workers (100%) were male. finally the (34.4%) of workers had secondary level of education. According to their marital status (50%) were single, also, 44.4% of workers were married and (48.9%) of them had 2-5 years of experience and (42.2%) had attend from 2-4 workshops in the filled of demining.

Table 2. Comparison between pre, post and follow up program according to knowledge (N=90).

Knowledge	Educational program											
	Pre				Post				Follow-up			
	Right		Wrong		Right		Wrong		Right		Wrong	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Landmine	68	75.6	22	24.4	80	88.9	10	11.1	87	96.7	3	3.3
Blast pressure	11	12.2	79	87.8	38	42.2	52	57.8	59	65.6	31	34.4
Safety system	90	100.0	0	0.0	90	100.0	0	0.0	90	100.0	0	0.0
Blasting safety	3	3.3	87	96.7	6	6.7	84	93.3	12	13.3	78	86.7
Safety procedure	82	91.1	8	8.9	85	94.4	5	5.6	89	98.9	1	1.1
Marking system	75	83.3	15	16.7	83	92.2	7	7.8	86	95.6	4	4.4
Tools bag	69	76.7	21	23.3	85	94.4	5	5.6	90	100.0	0	0.0
Required depth	62	68.9	28	31.1	79	87.8	11	12.2	87	96.7	3	3.3
PPE	57	63.3	33	36.7	81	90.0	9	10.0	88	97.8	2	2.2
Safety distance	59	65.6	31	34.4	78	86.7	12	13.3	89	98.9	1	1.1
Detector effectiveness	4	4.4	86	95.6	10	11.1	80	88.9	57	63.3	33	36.7
Antitank mines	61	67.8	29	32.2	82	91.1	8	8.9	88	97.8	2	2.2
Move the mine	3	3.3	87	96.7	9	10.0	81	90.0	30	33.3	60	66.7
First aid	78	86.7	12	13.3	86	95.6	4	4.4	89	98.9	1	1.1
Injury types	62	68.9	28	31.1	76	84.4	14	15.6	84	93.3	6	6.7
First aid equipment	59	65.6	31	34.4	76	84.4	14	15.6	82	91.1	8	8.9
Help medic	62	68.9	28	31.1	79	87.8	11	12.2	80	88.9	10	11.1
Types of mine	70	77.8	20	22.2	83	92.2	7	7.8	88	97.8	2	2.2
Mines destruction	6	6.7	84	93.3	13	14.4	77	85.6	24	26.7	66	73.3
Brief program	84	93.3	6	6.7	87	96.7	3	3.3	90	100.0	0	0.0
Stages of crisis	65	72.2	25	27.8	74	82.2	16	17.8	79	87.8	11	12.2
Knowledge score												
Min. – Max.	9.0 – 17.0				12.0 – 19.0				13.0 – 20.0			
Mean ± SD	12.56 ± 1.83				15.33 ± 1.37				17.42 ± 1.45			
P					<0.001*				<0.001*			

The above table Illustrates comparison between pre, post and follow-up educational programme regarding worker's knowledge towards land mine, and its occupational hazards & safety measured. it can be seen that there are a highly significance differences in all phases of educational programme in areas related land mine, occupational hazards & safety measured with highly change in worker's knowledge in post and follow-up educational programme in comparing with worker's level of knowledge reported in pre - educational programme where Ps was (0.001) respectively.

Table 3. Comparison between pre, post and follow up program according to protective knowledge & right action during work (N=90).

Knowledge & Right action	Educational program											
	Pre-test				Post-test				Follow-up			
	Right		Wrong		Right		Wrong		Right		Wrong	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gadget store	65	72.2	25	27.8	90	100.0	0	0.0	90	100.0	0	0.0
Presence of weeds	63	70.0	27	30.0	76	84.4	14	15.6	77	85.6	13	14.4
Detector reading	61	67.8	29	32.2	72	80.0	18	20.0	74	82.2	16	17.8
Occurrence of an accident	16	17.8	74	82.2	7	7.8	83	92.2	16	17.8	74	82.2
Contemporary accident	64	71.1	26	28.9	64	71.1	26	28.9	64	71.1	26	28.9
Deal with the incident	78	86.7	12	13.3	84	93.3	6	6.7	86	95.6	4	4.4
Knowledge & Right action towards												
Min. – Max.	78.0 – 89.0				78.0 – 91.0				78.0 – 91.0			
Mean ± SD	84..57 ± 3.02				85.63 ± 3.06				85.80 ± 3.0			
P					<0.001*				<0.001*			

Table Demonstrates Comparison between pre, post and follow- up the educational programme as regard worker's acquired protective knowledge & right action during work. The table revealed that there is a significance difference between all phases namely; pre, post and follow – up the educational programme with Ps (<0.001).

Table 4. Percentage distribution of Data about Equipment score (protective equipments) (N=90).

Scale 1	Educational program											
	Pre-test				Post-test				Follow-up			
	Not present		Present		Not present		Present		Not present		Present	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mine suit	6	6.7	84	93.3	6	6.7	84	93.3	1	1.1	89	98.9
Safety glasses	5	5.6	85	94.4	5	5.6	85	94.4	0	0.0	90	100.0
goggles	59	65.5	31	34.4	59	65.6	31	34.4	15	16.7	75	83.3
Hearing protectors	7	7.8	83	92.2	7	7.8	83	92.2	2	2.2	88	97.8
Protective face	0	0.0	90	100.0	0	0.0	90	100.0	0	0.0	90	100.0
Appropriate shoes	44	48.9	46	51.1	44	48.9	46	51.1	18	20.0	72	80.0
Gloves	6	6.7	84	93.3	6	6.7	84	93.3	1	1.1	89	98.9
Helmet head Protector (caps) behind	44	48.9	46	51.1	44	48.9	46	51.1	39	43.3	51	56.7
Scale 1 score												
Min. – Max.	1.0 – 7.0				1.0 – 7.0				4.0 – 8.0			
Mean ± SD	6.10 ± 1.41				6.10 ± 1.41				7.16 ± 0.83			
p					1.000				<0.001*			

The Table Shown comparison between Pre, Post and Follow-up an educational programme according to mine workers practice in items related to using & wearing protective equipments, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.001).

Table 5. Percentage distribution of Data about Equipment score (Sanitary demining equipments) (N=90).

Scale 2	Educational program											
	Pre-test				Post-test				Follow-up			
	Not present		Present		Not present		Present		Not present		Present	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Wire feeler.	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Metal Detector	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Puncher	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Exploration tool.	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Shovel.	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Drilling Tool	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Magnet.	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Knife.	67	74.4	23	25.6	67	74.4	23	25.6	59	65.6	31	34.4
Light bulb	87	96.7	3	3.3	87	96.7	3	3.3	79	87.8	11	12.2
Hammer	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Saw	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Edger	38	42.2	52	57.8	38	42.2	52	57.8	30	33.3	60	66.7
Brush	8	8.9	82	91.1	8	8.9	82	91.1	0	0.0	90	100.0
Blasting tool	38	42.2	52	57.8	38	42.2	52	57.8	21	23.3	69	76.7
Iron	88	97.8	2	2.2	87	96.7	3	3.3	55	61.1	35	38.9
Scale2 score												
Min. – Max.	0.0 – 15.0				0.0 – 15.0				10.0 – 15.0			
Mean ± SD	10.58 ± 3.57				10.59 ± 3.57							

The above table describes Shows comparison between Pre, Post and Follow-up an educational programme according to mine workers practice in items related to using & wearing Sanitary demining equipments, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.001).

Table 6. Percentage distribution of Data about Practice First aids score.

Heat stroke	Educational program											
	Pre-test				Post-test				Follow-up			
	Not done		Done		Not done		Done		Not done		Done	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Patient status	31	34.4	59	65.6	30	33.3	60	66.7	6	6.7	84	93.3
Dressing dress	45	50.0	45	50.0	44	48.9	46	51.1	6	6.7	84	93.3
Use of ice	15	16.7	75	83.3	16	17.8	74	82.2	8	8.9	82	91.1
Victim ventilation	76	84.4	14	15.6	75	83.3	15	16.7	5	5.6	85	94.4
Continue cooling	81	90.0	9	10.0	80	88.9	10	11.1	7	7.8	83	92.2
Sunburn score												
Min. – Max.	0.0 – 5.0				0.0 – 5.0				2.0 – 5.0			
Mean ± SD	2.24 ± 0.99				2.28 ± 0.99				4.64 ± 0.64			
P					0.960				<0.001*			

The table Shown comparison between Pre, Post and Follow-up an educational programme according to mine workers corrective practice actions in items related to First aids score in the situation of Heatstroke, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.001).

Table 7. Percentage distribution of Data about Practice First aids score.

Bone fracture	Educational program											
	Pre-test				Post-test				Follow-up			
	Not done		Done		Not done		Done		Not done		Done	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Stop bleeding	17	18.9	73	81.1	17	18.9	73	81.1	8	8.9	82	91.1
Wound dressing	14	15.6	76	84.4	14	15.6	76	84.4	7	7.8	83	92.2
Fix injured site	42	46.7	48	53.3	42	46.7	48	53.3	31	34.4	59	65.6
Comfort the victim	46	51.1	44	48.9	46	51.1	44	48.9	9	10.0	81	90.0
Use of cold compress	66	73.3	24	26.7	65	72.2	25	27.8	15	16.7	75	83.3
Compressor bandage	31	34.4	59	65.6	30	33.3	60	66.7	20	22.2	70	77.8
Fracture score												
Min. – Max.	0.0 – 6.0				0.0 – 6.0				3.0 – 6.0			
Mean ± SD	3.60 ± 1.51				3.62 ± 1.53				5.0 ± 0.85			
P					0.960				<0.001*			

The above table Shown comparison between Pre, Post and Follow-up an educational programme according to mine workers corrective practice actions in items related to First aids score in the situation of bone fracture, table reveals that there is a statistically significance differences in only one phase namely, follow-up phase, where Ps was (0.025).

4. Discussion

Mine clearance is notoriously painstaking, expensive and dangerous work. Teams typically consist of men with metal detectors and prodders with occasional assistance from sniffer dogs and mechanical devices. Often working in punishing climates and in overgrown and remote terrain, they progress meter by meter. In many cases they are forced to spend the same amount of time checking suspected minefields as they do tackling live minefields. [5]

Therefore, the aim of the current study was to evaluate the effect of educational programme regarding safety measures & first aids on knowledge, practices and attitude of mines workers in the field of demining in Kassala State.

Regarding sociodemographic characteristics of mine workers, the present study reveals that below half of mine workers were from age group 20-30 years and had secondary level of education. On the other hands all of workers were male of workers. According to their marital status half of sample were single and below haft of them had 2-5 years of experience and had attend from 2-3 workshops in the filled of demining. In contrast, [6] stated that Since within some communities the activities linked with civil construction are filled with prohibitions for the women due to cultural issues, it was great to learn that they participated in the events in a larger or smaller number (in each one there was a different percentage). Anyway, they were the first to benefit.

Based on the present study revealed that there is a statistically significance difference in post test and follow- up phase in comparing with pre test phase of educational programme toward the worker's attitude within the minefield in prepared all personal protection equipment, safety measures and work tools needed within the minefield. In this respect, [7], 2009 stated that mines are considered safer to place than to remove. Mines can "live" for an extremely long period of time until detonated or removed. Today, most minefields are neither mapped nor recorded, and those who laid them may no longer exist. Such phenomena make landmines difficult and hazardous to address. Mines, in most cases, are left behind after ceasefires or cessations of hostilities. Civilians are routinely victimized by landmines since they are not aware of their existence or location. Many civilians are killed or maimed as they return from displacement camps and attempt to resume their lives.

According to the present study findings revealed that there is a significance difference between all phases namely; pre, post and follow – up the educational programme in the items related to worker's acquired protective knowledge & right action during work. Over the past several years, the main activities associated with accidents have been farming, collecting scrap metal and tampering with ordnance. UXO and mine incidents most frequently occur in mountainous areas. Alarmingly, many accident sites have been near victims' homes. There also appears to be a strong correlation between accidents and poverty. [8]

In addition to, all management of mining waste disposal facilities must taken into consideration long term environmental issues, because these structures will more than likely survive both the mine and the mining company. This raises a legal problem as regards the responsibility for maintenance and repair of these facilities since liability, under most laws, cannot be endless. Even where the facility becomes a permanent structure, it is still necessary to fit the site with a permanent analytical and inspection system. Closure and after care operations are therefore of paramount importance to lower, as far as possible, the long term environmental risks. [9]

In this concern, Nairobi, 2004 highlight on that the main responses to the horrors of landmines were three-fold: providing surgical and medical emergency support in the most mine-affected countries; initiating an international campaign to ban landmines; and the organizing of mine clearance teams in the hardest hit areas. First, some key medical agencies started developing clinics to deal with the many thousands of amputations and the fitting of prostheses for the rehabilitation of mine victims. Always a small core group of committed agencies led by groups like ICRC, Handicap international and Veterans international, they struggle to meet the medical needs of mine victims as well as survivors' needs for rehabilitation and reintegration. The second response was an expression of the outrage felt by many seeing so many non-combatants maimed and killed by mines In Tanzania, Many victims are women because we work in the fields, and children, because they don't know what a mine looks like," Sagna told IRIN. "I myself saw the landmine before I stepped on it, but I didn't know what it was." There have been five mine accidents in Darsalam so far, two of them instantly killing the victims. Victims of landmine accidents are referred to the state-sponsored. Also, in Ziguinchor, regional hospital has many victims undergo surgery and re-education lasting on average three months. However, the prostheses needed to recover some partial

mobility are too expensive for most victims. [10] For community aspect, Landmine awareness and education cannot stand alone. To be effective, they must be integrated into development and rehabilitation activities across a range of sectors, including education, health care and food security. All mine awareness activities must be adapted to local needs, culture and traditions. Awareness programs should specifically target refugees and displaced persons who are planning to return to a mined country or community. Although innovative approaches to mine awareness are being developed — for example, using child-to child techniques, or working with groups of children to produce culturally specific materials — mine. Awareness should never be viewed as a substitute for mine clearance. [11] Based on the current results there is a statistically significance difference between three phases of educational programme toward the worker's attitude within the minefield. This finding goes in the same way with U. S in 1997, the European Commission (EC) provided equipment and training for deminers and EOD teams, while the US delivered a programme to train personnel from the entity armed forces in humanitarian demining. Collectively, these efforts made rapid increase in the numbers of those trained in humanitarian demining, as depicted Those holding basic humanitarian demining qualifications rose from near zero at the start of 1996 to more than 200 by the end of the year and more than 1,200 by the end of 1998, by which time most of the basic training was being offered by the entity armies. Unfortunately, arrangements for employing the trained deminers were not adequately worked out. [12]

5. Conclusion

Based on the result of the present study it concluded that workers knowledge, practice and attitude regarding safety masseur's and first aid are inadequate in pre-test and there was highly change in workers knowledge in post and follow- up educational program, it recommended that periodic education and practice to worker about occupational hazard and first aid, should be done more research on the area to identify the factors that affecting workers knowledge, practice and attitude.

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