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RESEARCH ARTICLE

EFFECT OF EDUCATIONAL PROGRAM ABOUT PREVENTION OF BLOOD BORNE DISEASES FOR HOSPITAL HOUSEKEEPERS IN PUBLIC HOSPITALS - KHARTOUM STATE

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ABSTRACT

Background: Hospital housekeepers are persons employed by hospital to manage sanitary works, by virtue of their job, can get blood borne diseasesfrom patient's fomite, contaminated environment, patient's specimens, and by handling infected waste either by direct or indirect contact. The most common examples of these diseases are human immune deficiency virus, hepatitis B and hepatitis C.
Aim of the study: wasto evaluate the effectiveness of health education program on hospital housekeepers.
Material and Methods: The study was conducted in Public hospitals Khartoum, Khartoum Bahri and Omdurman.Quasi-experimental design was used. Ninety two (92) hospital housekeepers enrolled and received the health education intervention program, they were selected by systematic simple random sampling technique probability proportional to size.Data collection: pretest was done by using structured interview questionnaire, attitude scale and observation check list. Then Health education program was conducted, practicing of preventive measure of blood borne infection took place one month for each group in the three hospitals. Post test data was conducted after three months using the same tools,Follow up test was conducted after another three months using the sametools.
Results: The mean score of knowledge of participants as definition, types of blood borne infection, mode of transmission before education program was 5.78, after education program was 7.10 and in follow up phase was 7.26 (P value=.001).
The mean score of attitude of participants towards working with infected patients were increased significantly after education program from 9.97 to 12.04 and 12.20 in follow up phase respectively (P value =.001) .
Practice as wearing and removing gloves during and after work, hand washing, dealing with contaminated and sharp objects and medical waste before education program were 40.4 and after education program and follow up increased to 46.00 and 47.10 respectively (P value = .001).
Conclusion: The Health Education Program was effective in improving knowledge, attitude and Practice.
Recommendation: guidelines and clear policy for medical waste management system. Medical check for hospital housekeeping before recruitment And Vaccination for Hepatitis for –ve hepatitis.

INTRODUCTION

Infection control and prevention can be provided by good housekeeping and waste disposal. Housekeeping are at higher risk to infection as they are exposed to blood, body fluid, used sharp and other contaminated objects due to the routine part of their job (Biwa, 2002). Americans have been infected with HCV, of whom 3.2 million are chronically infected. Prevalence of HCV seropositivity among the hem dialysis population in Sudan is estimated to be around 34% (El-Amin *et al*., 2007).

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HIV/AIDS is one of the largest obstacles to development in many countries and is destroying the lives and livelihoods of millions of people around the world. Nearly 95 percent (95%) of all infected individuals are found in developing countries and the situation is especially problematic in sub-Saharan Africa (Gaffeo, 2003). In Sudan UNAIDS (United National Acquired immune deficiency syndrome) suggests that 0.53 per cent with 98,922 people living with HIV in 2012. The prevalence of the disease is prone to rise due to the large scale population movement (refugees, returnees) and changing livelihoods which are reflected in high rates of urbanization and changing community structures (Ministory of Health.2012). Hospital housekeepers had inadequate

knowledge, unfavorable attitude to the blood borne diseases and also they had faulty or unsafe practices in handling sharps hospital waste, blood and body fluids. This experience, motivated us to undertake a study on knowledge, attitude and practice of hospital Housekeeping personal on blood borne diseases and to provide an education program regarding blood borne diseases.

MATERIALS AND METHODS

Setting

All department in the greater governmental hospitals (Omdurman-Khartoum Bahri –Khartoum.

Inclusion criteria

- Housekeeping personnel working in those departments and have direct patient care or services.
- Both sexes

Sample size

needs for equation, and the type of test, pair test.

$N = ((Z1-\alpha+z1-\beta)2)/\Delta+(Z1\text{^}2-\alpha)/2$

N is the sample size, which is:92 (Machin *et al*., 2007)

Design

It is quazi experimental study, one group pre and post test.Data collected for this study isface to face questinaire, attitude scale and observation check list for observing practice of study group

Pre test phase

This includes all structured interview questionnaire for assessing the housekeeping personnel knowledge regarding blood borne diseases and it's precaution methods it was conducted by administering knowledge questionnaire and attitude scale and observation of job practice with practice observation check list. The average time taken for completing knowledge questionnaire and attitude scale was 20 minute. Time taken to observe job practice of housekeeping personnel was 3 days in pre test, the time taken for teaching the program was 8 hours divided in four lectures per week two hours per each lecture for each hospital.

Educational program

Educational Program of precaution methods for blood borne diseases. The structured teaching program was developed based on the topic of the study, review of the related research publications and Selecting the Method of Teaching, were lectures as an appropriate method for housekeeping personnel. It was planned to teach in groups, and Prepared with Visual Aids.

The practical phase

After conducted the education program the practical part done by divided the participants in groups for one month per each hospital, and demonstrated with them how to wear gloves and boots, use disinfectant cleaner during work, wear gloves during collection medical waste and sharp objects, Washed hands after removing gloves, Collecting equipment and contaminated towel separately, Closed the paper for contaminated towel and medical waste tidily, Use safety pox for collecting needles and sharp objects.

Post test phase

This phase include evaluation of effectiveness of educational program after 3 months through using the same structure interview sheet which used in pre-test phase and practice regarding blood borne diseases and it's precaution, and redemonstrated the practical parts (training parts) as same as in the pre test,then follow up test after three month.

RESULTS

Table 1a. Distribution of the studied cases according to demographic data (n=92)

Demographic data	No.	%
Age (years)		
21 – 25	4	4.3
26 – 30	13	14.1
31 – 40	31	33.7
Above 41 year	44	47.8
– Sex		
Male	7	7.6
Female	85	92.4
– Marital status		
Married	60	65.2
Single	4	4.3
Divorced	18	19.6
Widow	10	10.9
– Education		
Illiterate	56	60.9
Secondary	10	10.9
Primary	22	23.9
Others	4	4.3
– Years of Experience in hospital		
Below 1 year	5	5.4
1-3 year	21	22.8
4 - 6 y	11	12.0
More than 6 years	55	59.8
Years of Experience in this unit		
Below 1 year	18	19.6
1-3 year	27	29.3
4 - 6 years	11	12.0
More than 6 years	36	39.1

Table 1b. Distribution of the studied group according to demographic data "continue" (n=92)

Demographic data	No.	%
Daily working period		
4 hour	0	0.0
8 hour	92	100.0
16 hour	0	0.0
– Shift		
Morning	63	68.5
Afternoon	25	27.2
Night	4	4.3
Nothing	0	0.0
No. of assistants		
One	29	31.5
Two	28	30.4
Three	8	8.7
Four and more	23	25.0
Other	4	4.3
– Isolation		
One	43	46.7
Two	0	0.0
2 - 4	0	0.0
More than 4	6	6.5
Other	43	46.7

Table 2a. Knowledge about blood borne diseases (n=92)

Assessment of knowledge about blood borne diseases	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Group of infectious disease	8	8.7	1	1.1	1	1.1
Infected disease	22	23.9	4	4.3	4	4.3
Diseases transmitted by sexual relation	40	43.5	31	33.7	19	20.7
Disease affect immunity	22	23.9	56	60.9	68	73.9
2 – Cause of AIDs						
Virus	53	57.5	80	87.0	85	92.4
Microorganisms	3	3.3	0	0.0	0	0.0
Fungi	3	3.3	1	1.1	0	0.0
Unknown virus	33	35.9	11	12.0	7	7.6
3 – while you are practicing your work what the fluids which can cause infection of HIV or HBV						
Blood						
Urine	72	78.3	75	81.5	85	92.4
Bloody secretions	7	7.6	6	6.5	5	5.4
Bone marrow	9	9.8	5	5.4	0	0.0
Amniotic fluid	0	0.0	3	3.3	0	0.0
Milk	0	0.0	1	1.1	0	0.0
Sperms	0	0.0	0	0.0	0	0.0
Vaginal discharged	3	3.3	2	2.2	2	2.2

Table 2. T test for Knowledge about blood borne diseases

Measuring Time	Means	SD	Cal. T value	P-Value
After	7.10	1.64	6.606	0.001
Before	5.78	1.78		
Follow-up	7.26	1.73	1.473	0.072
After	7.10	1.64		

Table (3a). Knowledge regard Hepatitis B (n=92)

Knowledge		Yes		No		Don't Know	
		No.	%	No.	%	No.	%
Do you heard about HBV before	Pre test	56	60.9	22	23.9	14	15.2
	Post test	81	88.0	7	7.6	4	4.3
	Follow up	81	88.0	7	7.6	4	4.3
Do you heard before about the appearance of symptoms after the infection directly is one of the causes of the HBV	Pre test	39	42.4	28	30.4	25	27.2
	Post test	58	63.0	26	28.3	8	8.7
	Follow up	58	63.0	25	27.2		
HBV lead to cancer of the liver	Pre test	56	60.9	10	10.9	26	28.3
	Post test	79	85.9	3	3.3	10	10.9
	Follow up	80	87.0	3	3.3	9	9.8
Hepatitis can transmit through shaking hands	Pre test	12	13.0	52	56.5	28	30.4
	Post test	9	9.8	68	73.9	15	16.3
	Follow up	9	9.8	76	82.6	7	7.6
Cuddiling and kissing infected patient can transmit the disease	Pre test	35	38.0	34	37.0	23	25.0
	Post test	62	67.4	17	18.5	13	14.1
	Follow up	69	75.0	16	17.4	7	7.6
Disease can transmit directly from infected mother to her fetus during pregnancy	Pre test	62	67.4	14	15.2	16	17.4
	Post test	85	92.4	3	3.3	4	4.3
	Follow up	85	92.4	3	3.3	4	4.3

Table (3b). Knowledge regard Hepatitis B. (continue) (n=92)

Knowledge		Yes		No		Don't Know	
		No.	%	No.	%	No.	%
Mosquitoes and other insects bites can transmit the disease	Pre test	50	63.9	28	20.9	14	15.2
	Post test	85	89.0	3	6.6	4	4.4
	Follow up	86	88.8	3	6.6	4	4.3
Using contaminating needle with hepatitis can transmit the disease	Pre test	39	42.4	31	30.4	22	27.2
	Post test	58	63.0	26	28.3	8	8.7
	Follow up	58	63.0	25	27.2	9	9.8
Sex relation can transmit the disease	Pre test	56	60.9	10	10.9	26	28.3
	Post test	79	85.9	3	3.3	10	10.9
	Follow up	80	87.0	3	3.3	9	9.8
Availability of vaccination for HBV	Pre test	12	13.0	52	56.5	28	30.4
	Post test	9	9.8	68	73.9	15	16.3
	Follow up	9	9.8	76	82.6	7	7.6

Table (3a+3b) shows results of T test by pairs to determine the significance of impact of the implementation of in-service educational program on housekeeping personnel Knowledge about HBV

Measuring Time	Means	SD	Cal. T value	Df	P-value
After	11.29	2.21	9.411	91	.001
Before	7.48	3.49			
Follow-up	11.54	1.96	2.923	91	.002
After	11.29	2.21			

Table 4. Attitudes regard hepatitis B (n=92)

Attitudes		Agree		Disagree	
		No.	%	No.	%
If your husband (wife) is infected do you complete your life with him/her	Pre test	42	45.7	50	47.3
If request you to travel to place where outbreak of disease do you go	Post test	64	69.6	28	30.4
Do you live with infected patient in same house	Follow up	82	89	10	10.9
Do you work with him in same place	Pre test	26	28.3	66	71.7
If you discover the one you want to marry is infected do you complete the wedding	Post test	90	97.8	2	2.2
If some one have accident and you know he is infected do you deal with him	Follow up	86	93.5	6	5
What is your sense about infected person	Pre test	54	56.5	40	43.5
If your husbent (wife) is infencted do you complete your life with him/her	Post test	78	84.8	14	15.2
If request you to travel to place where outbreak of disease do you go	Follow up	79	85.9	13	14.1
Do you live with infected patient in same house	Pre test	49	53.3	43	46.7
	Post test	75	81.5	17	18.5
	Follow up	74	80.4	18	19.6

Table 4. Shows results of attitudes toward HBV

Measuring Time	Means	SD	Cal. T value	P-value
After	12.04	1.30	10.235	.001
Before	9.97	1.88		
Follow-up	12.20	1.33	2.637	.005
After	12.04	1.30		

Table 5. Knowledge regard hepatitis C (n=92)

Knowledge		Yes		No		Don't Know	
		No.	%	No.	%	No.	%
Do you heard about hcv before	Pre test	56	60.9	22	23.9	14	15.2
	Post test	81	88.0	7	7.6	4	4.3
	Follow up	81	88.0	7	7.6	4	4.3
Do you heard before about the appearance of symptoms after the infection directly is one of the causes of the hcv	Pre test	39	42.4	28	30.4	25	27.2
	Post test	58	63.0	26	28.3	8	8.7
	Follow up	58	63.0	25	27.2	9	9.8
Hbv lead to cancer of the liver	Pre test	56	60.9	10	10.9	26	28.3
	Post test	79	85.9	3	3.3	10	10.9
	Follow up	80	87.0	3	3.3	9	9.8
Hepatitis can transmit through shaking hands	Pre test	12	13.0	52	56.5	28	30.4
	Post test	9	9.8	68	73.9	15	16.3
	Follow up	9	9.8	76	82.6	7	7.6
Cuddiling and kissing infected patient can transmit the disease	Pre test	35	38.0	34	37.0	23	25.0
	Post test	62	67.4	17	18.5	13	14.1
	Follow up	69	75.0	16	17.4	7	7.6

Table 5a. Shows results of T test by pairs to determine the significance of impact of the implementation of in-service educational program on housekeeping personnel Knowledge about HCV

Measuring Time	Means	SD	Cal. T value	P-value
After	10.29	2.21	8.411	.001
Before	6.48	3.49		
Follow-up	11.54	1.96	2.870	.001
After	10.29	2.21		

Table 6. Attitudes regard Hepatitis C. (n=92)

Attitudes		Agree		Disagree	
		No.	%	No.	%
If your husband (wife) is infected do you complete your life with him/her Do you live with infected patient in same house	Pre test	42	45.7	50	47.3
	Post test	64	69.6	28	30.4
	Follow up	82	89	10	10.9
Do you work with him in same place If you discover the one you want to marry is infected do you complete the wedding If one have accident and you know he is infected do you deal with him	Pre test	26	28.3	66	71.7
	Post test	90	97.8	2	2.2
	Follow up	86	93.5	6	5
What is your sense about infected person If your (wife) is do you complete your life with him/her	Pre test	52	56.5	40	43.5
	Post test	78	84.8	14	15.2
	Follow up	79	85.9	13	14.1
9-Do you live with infected patient in same house	Pre test	49	53.3	43	46.7
	Post test	75	81.5	17	18.5
	Follow up	74	80.4	18	19.6

Table 6. shows results of T test by pairs to determine the significance of impact of the implementation of in-service educational program on housekeeping personnel attitudes toward HBV

Measuring Time	Means	SD	Cal. T value	P-value
After	12.04	1.30	10.235	.001
Before	9.97	1.88		
Follow-up	12.20	1.33	2.637	.005
After	12.04	1.30		

Table 7. Knowledge about HIV/AIDs please answer (n=92)

Knowledge		True		False	
		No.	%	No.	%
Q1- the quality of patients life improved by treatment	Pre test	31	33.7	61	66.3
	Post test	76	82.6	16	17.4
	Follow up	78	84.8	14	15.2
Q2-- the chance of entering virus of AIDs to the skin through abrasion	Pre test	61	66.3	31	33.7
	Post test	17	18.5	75	81.5
	Follow up	17	18.5	75	81.5
Q3-- the chance of entering virus of AIDs at the vaginal discharge is big	Pre test	67	72.8	25	27.2
	Post test	80	87.0	12	13.0
	Follow up	85	92.4	7	7.6
Q4- those who dealing with blood are more expose for virus of AIDs	Pre test	69	75.0	23	25.0
	Post test	84	91.3	8	8.7
	Follow up	88	95.7	4	4.3
Q5- dealing with needles may cause infection to person	Pre test	73	79.3	19	20.7
	Post test	81	88.0	11	12.0
	Follow up	83	90.2	9	9.8
Q6- wearing gloves prevent completely from AIDs	Pre test	50	54.3	42	45.7
	Post test	72	78.3	20	21.7
	Follow up	92	100.0	0	0.0

Table 7. results of T test by pairs to determine the significance of impact of the implementation of in-service educational program on housekeeping personnel Knowledge about AIDS

Measuring Time	Means	SD	Cal. T value	P-value
After	9.48	2.06	6.515	.001
Before	7.79	2.43		
Follow-up	10.09	1.80	6.154	.002
After	9.48	2.06		

Table 8. Attitudes about HIV/AIDs please answer frank ly (n=92)

Attitudes	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Most of infected people must have the disease because the dealing with the patients with careless						
Strongly agree	52	56.5	2	2.2	1	1.1
Agree	36	39.1	1	1.1	1.	1.1
Strongly disagree	4	4.3	60	65.2	60	65.2
Disagree	0	0	29	31	30	23.63
Neutral	0	0	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
I must cut short with my friend if I know he is infected						
Strongly agree	31	33.7	1	1.1	1	1.1
Agree	21	22.8	1	1.1	1	1.1
Strongly disagree	13	14.1	61	66.3	62	67.4
Disagree	23	25	27	29.3	27	29.3
Neutral	4	4.4	2	2.2	1	1.1
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
HCWs must be qualified in dealing with infected patients						
Strongly agree	35	38	62	67.4	52	56.4
Agree	19	20.7	44	26.1	26	283
Strongly disagree	22	23.9	4	4.3	9	9.6
Disagree	15	16.3	1	1.1	5	5.4
Neutral	1	1.1	1	1.1	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Treating and care with HIV patient consume time and money						
Strongly agree	51	55.4	3	3.3	78	84.8
Agree	6	6.5	2	2.2	14	15.2
Strongly disagree	5	5.4	68	73.9	0	0.
Disagree	26	28.3	19	20.7	0	0
Neutral	4	4.3	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
One can marry HIV once he know that one is infected						
Strongly agree	19	20.7	59	64.1	71	77.2
Agree	15	16.3	16	17.4	6	6.5
Strongly disagree	34	37	14	15.2	5	5.4
Disagree	21	22.8	3	3.3	10	10.9
Neutral	3	3.3	0	0	0	0

Table 8. Shows results of T attitudes toward AIDS

Measuring Time	Means	SD	Cal. T value	P-value
After	38.65	3.95	10.847	.001
Before	27.59	8.87		
Follow-up	38.22	4.80	-.682	.249
After	38.65	3.95		

Table 9. Attitudes about dealing with medical wastes (n=92)

Attitudes	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
put your hand in container with medical waste						
Strongly agree	33	35.8	33	35.8	33	35.8
agree	13	14.1	13	14.1	13	14.1
Strongly disagree	35	38	35	38	35	38
Disagree	10	12.1	10	12.1	10	12.1
Neutral	0	0	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
throw the medical waste on open car which expose the people for the disease						
Strongly agree	4	4.3	1	1.o	4	4.3
Agree	8	8.7	6	6.5	4	4.3
Strongly disagree	63	68.5	69	75	66	71.7
Disagree	17	18.5	16	17.3	18	20.3
Neutral	0	0	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Containers for medical waste must be with cover to prevent living of animals and insect and prevent spread of bad odor						
Strongly agree	4	4.3	47	51.1	55	59.8
Agree	7	7.6	45	48.9	37	40.2
Strongly disagree	54	58.7	0	0	0	0
Disagree	22	23.9	0	0	0	0
Neutral	5	5.4	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
discard the medical waste on the cross road						
Strongly agree	6	6.5	0	0	1	1.1
agree	1	1.1	0	0	2	2.2
Strongly disagree	62	67.4	68	73.9	66	71.7
disagree	21	22.8	24	26.1	23	25
Neutral	2	2.2	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Q5 Use colored papers to differentiate between them						
Strongly agree	1	1.1	41	44.6	42	45.7
Agree	6	6.5	48	52.2	48	52.2
Strongly disagree	56	60.9	1	1.1	1	1.1
Disagree	29	31.5	1	1.1	1	1.1
Neutral	0	0	1	1.1	0	0

Tablee 9. Shows results housekeeping personnel to deal with medical waste

observation	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Wear gloves during work						
Not done	3	3.3	4	4.3	80	87
Done correct	31	33.7	85	92.4	12	13
Done incorrect	58	63	3	3.3	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Use leaner during work						
Not done	2	2.2	92	100	92	100
Done correct	38	41.3	0	0	0	0
Done incorrect	52	56.5	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Wearing boots during work						
Not done	82	89.1	68	73.9	60	65.2
Done correct	4	4.3	18	19.6	29	31.5
Done incorrect	6	6.5	6	6.5	3	3.3
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Wear gloves during collection medical waste						
Not done	12	13	10	10.9	1	1.1
Done correct	32	34.8	76	82.6	79	85.9
Done incorrect	48	52.2	6	6.5	12	13
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Wear gloves while collecting needles and sharp objects						
Not done	9	9.8	9	9.8	77	83.7
Done correct	29	31.5	76	82.6	15	16.3
Done incorrect	54	58.7	7	7.6	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Using disinfectant while cleaning						
Not done	8	8.7	85	92.4	1	1.1
Done correct	52	56.5	7	7.6	82	89.1
Done incorrect	32	34.8	0	0	9	9.8

Table 10b. checklist for practice of preventive BBI (n92)

Observation	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Wash hands after removing gloves						
Not done	55	59.8	12	13	8	8.7
Done correct	22	23.9	80	87	80	87
Done incorrect	15	16.3	0	0	4	4.3
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Collecting equipment and contaminated towel separately						
Not done	32	34.9	13	14.1	1	1.1
Done correct	27	29.3	78	84.8	81	88
Done incorrect	33	35.9	1	1.1	10	10.9
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Close the paper for contaminated towel and medical waste tidily						
Not done	20	21.7	13	14.1	1	1.1
Done correct	27	29.3	78	84.8	91	98.9
Done incorrect	45	48.9	1	1.1	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Use safety pox for collecting needles and sharp objects						
Not done	25	27.2	11	12	91	98.9
Done correct	21	22.8	81	88	1	1.1
Done incorrect	46	50	0	0	0	0
	Pre test		Post test		Follow up test	
	No.	%	No.	%	No.	%
Using car for transport medical waste to other place						
Not done	83	90.2	82	89.1	82	89.1
Done correct	9	9.8	10	10	10	10.9
Done incorrect	0	0	0	0	0	0

Table 10a, b. observational checklist for the prevention of blood borne diseases

Measuring Time	Means	SD	Cal. T value	df	Prob.
After	16.84	4.30	11.310	91	.001
Before	10.57	5.12			
Follow-up	17.93	2.92	2.119	91	.019
After	16.84	4.30			

DISCUSSION

The nearly half of hospital housekeeping personnel (47.8%) above the age of 41years which is differ to findings regarding age group ranging from 20-30 years were noted in study conducted for the evaluation of the post teaching knowledge about HIV/AIDS among hospital class IV employees (workers who are involved in duties of waste collection and waste disposal) (Valti *et al*., 2003). The majority of hospital housekeeping personnel (92.4%) were female and this finding is supported by finding in study conducted in the past which indicate that more females are involved in hospital housekeeping works 90% were females (Ministory of Health,2012). The half of the participants (59.8%) their hospital experience were above 6 years and spent this period in one unit which is differ to finding regarding job experience ranging from 6 month to 2 years noted in study conducted to assess the sharp injuries among hospital support personnel (Shiao *et al*., 2001). Most of participants (68.5%) prefer to work in the morning shift. Majority of participants (75.0%) not received any training program. This finding is similar to study conducted in Egypt for improvement of knowledge for health care workers regard blood borne diseases which showed 70% improvement of knowledge (Doa'a *et al*., 2009). And oppositely of this finding a study conducted for the evaluation of the post teaching knowledge about HIV/AIDS among hospital class (Ministory of Health, 2012) employees hospital workers reveal only about half of the class IV workers trained, these findings indicate that hospital housekeeping personnel need periodic awareness about precaution regarding the blood borne infections (Valti *et al*., 2003). Majority of participants (71.7%) have previous knowledge during travelling**.**

Knowledge level of hospital housekeeping personnel on BBI

In this study the findings showed significant improvement in the post test and it was (t=6.606) P-value .001, and the improvement stable in follow up (1.473)p-value.072, this finding is similar to finding of study conducted for improvement of knowledge for health Care workers in Egypt regard the BBI, p<0.001 which showed the improvement of knowledge in that study (Biwa, 2002). Similar study conducted to evaluate effectiveness of knowledge towards HIV/AIDS education program among different categories of health care works including hospital housekeeping personnel showed the average improvement specifically among hospital housekeeping personnel by 17% (Konanur, 2004).

Know edge level of hospital housekeeping personnel on HBV

This study showed a significant improvement of knowledge in difference between pre and post test (t=9.411) p-value.001 and stable in deference between post and follow up test (2.923) p-

value.002, it is at variance with study conducted to assess knowledge about hepatitis B virus among patients porters in Rafsanjan (2012) reaveled low score standard deviation of the knowledge 52.87 ± 9.7 (Mohammad Asadpour *et al*., 2012) .Similarly the findings of our study is supported by Another study which conducted among auxiliary health workers to assess their perception regard hepatitis B which showed 90.03% aware about HBV (ShankargoudaPatil *et al*., 2013). In study done in Southern Nigeria for assessing knowledge attitude among health care workers (including hospital house keepers) towards HBV found that majority of the respondents demonstrated a high level of knowledge of hepatitis B infection, the routes of transmission of the Infection 81%, which is supported our study (Salami and Babatunde, 2009).

Attitudes level of hospital housekeeping personnel on HBV

This study showed significant improvement of attitudes in the different between pre and post test (t=10.235) p-value.001 and stable in different between post and follow up test(t=2.637) p-value.005, this finding is supported by The Ahmady study (2007) to assess the knowledge, attitude, and practice of the cleaning staff regarding hepatitis B virus and reported that the cleaners had a positive attitude toward this infection p-value.001, and it reflected the efficacy of our program. (Bhosale *et al*., 2014) Another study done inSouthern Nigeria for assessing knowledge attitude among health care workers towards HBV although it found that majority of the respondents demonstrated a high level of knowledge of hepatitis B infection, the routes of transmission of the Infection but their attitudes level to protect themselves from getting infection was low P-value 0.28 which need health education campaigns for health workers so that they can understand the risks that they are exposed to, based on the nature of their work (Salami and Babatunde, 2009)

Knowledge level of hospital housekeeping personnel on HCV

Hepatitis C virus infection is an emerging health problem worldwide. Awareness about the disease is necessary in prevention and control of disease and particularly among housekeeping personnel due to their job practice. The present study showed that knowledge of housekeeping personnel about hepatitis C and uses of preventive measures was significantly improved in the different between pre and post test (t=8.411) p-value.001 and stable in the different between post and follow up test (t=2.870) This is strongly supported by study conductedinTertiary Hospital in India among health care workers to assess attitudes and awareness regarding hepatitis B and C, the results revealed that all respondents had favorableattitudes towards this infection 99% (Bhosale *et al*., 2014).

Attitudes level of hospital housekeeping personnel on HCV

The present study showed that attitudes level of housekeeping personnel about hepatitis C was was significantly improved in the diference between pre and post test(t=10.245) p-value.001 and stable in the different between post and follow up test (t=2.677) ,this is at variance with study conducted by Ayyat p-value 0.28 (Ayyat *et al*., 2000).

Knowledge level of hospital housekeeping personnel on AIDs

The finding of the study showed significant improvement of (t=6.515) pstable in the different between post and follow up test (t=6.154) p-value.002, this is strongly supported by study conducted in India on hospital house keeping personnel in mangalore hospital to assess the impact of learning package on HIV/AIDS for hospital housekeeping personnel which is about 63%.(Chacko, 2007). This indicates the efficiency of education program.

Attitudes level of hospital housekeeping personnel on AIDs

The finding of the study showed improvement of attitudes in the different between pre and post test (t=10.847) P-value. 001, and in significant in the deference between post and follow up test (t=-.682) P-value. 249, this is supported by study conducted in India on hospital house keeping personnel in mangalore hospital to assess the impact of learning package on HIV/AIDS for hospital housekeeping personnel 76% (Chacko, 2007). Again this indicates the efficiency of education program.

Knowledge Regard dealing with Medical waste

In our study the result showed that the significant changes in the different between pre and post test post (t=9.357) P-value .001 and the different between post and follow up test (t=3.733) P-value .001. The findings of this study strongly supported by study conducted among staff of a tertiary healthcare centre in coastal Karnataka to assess Knowledge, Attitude and Practices of health care workers regarding Biomedical Waste Management in a tertiary healthcare centre 86.5% (Sanjay *et al*., 2014). Needlestick injuries in HCWs are important and significant occupational medical hazard and can potentially lead to infections with blood-borne pathogens, in the presnt study there is higher improvement regarding dealing with this medical waste after exposure to program, this finding supported the study conducted among housekeeping workers in hospitals of Shiraz which showed that 83.7 % knew how to deal with Medical waste (ChristophBoesecke and Jan-Christian Wasmuth, 2014).

Care practice and prevention of blood borne diseases

Improve Knowledge and practice regarding preventive measures play an important role in control of the blood borne diseases and this improve by periodic session of program, our finding showed significant improvement of care practice for the prevention of blood borne diseases, in the different between pre and post test (t=11.310) p-value .001 and the deference between post and follow up test (t=-.682) p-value.019. Astudy done in Egypt to assess Knowledge, attitudes and practices of health care workers regarding needle stick injuries which is at variance to our study, showed gap in practice about protective measures for prevention of hepatitis C such as hand washing, wear gloves, surgical mask, and gownand recapping the needless 29 % (18). This could be disastrous; since these workers clean and collect infectious waste generated during the provision of health care services to the population. Thus, they are at a very high risk of exposure to objects contaminated with blood and body fluids (Dement *et al*., 2004).

Conclusion

Concerning knowledge, attitudes and practice about (BBI), HBV, HCV, HIV/AIDS, the difference in the pre test, post test after education program were highly significant and stable in the difference between post and follow up test indicates the effectiveness of the education program.

Recommendation

Continuous education and periodic awareness on blood borne infection regard knowledge, attitudes and practice may be provided for hospital housekeeping personnel There should be guidelines and clear policy for medical waste management system. Medical check for hospital housekeeping before recruitment And Vaccination for Hepatitis for –ve hepatitis hospital housekeeping personnel.

REFERENCES

Ayyat, A.A, Sayed and A.M. Abou Had. 2000. A KAP study among staff and student nurses about infection control in the odor Bioharzm Hospital. *J. Egypt. Soc. Parasitol*, 30: 511-522.

Bhosale, S., Tripathi, S. and Fernandez, K. 2014. Knowledge attitude and practices regarding hepatitis 'B' among class IV hospital workers of tertiary care teaching hospital in Pune, India. Med J DY Patil Univ, 7:96

Biwa's. Health care workers and risk of transmission of HIV/ HBV/ HCV. Int. Conf. AIDS. July 2002 14: 7-12.

Chacko, S. 2007. Impact of learning package regarding HIV / AIDS on knowledge, attitude and practice of hospital house keeping personnel in a selected hospital at mangalore , published master thesis in scinces , Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore: p 5-9.

ChristophBoesecke and Jan-Christian Wasmuth. 2014. Hepatology. Acute hepatitis, p52ed

Dement, JM., Epling, C., Ostbye, T., Pompeii, LA., Hunt, DL. 2004. Blood and body fluid exposure risks among health care workers: results from the Duke Health and Safety Surveillance System. *Am J Ind Med*.

Doa'a A. Saleh, Maged, R. Shafik, and Enayat, E. Elsherbini. 2009. Improvement of Knowledge, Attitudes and Practices of Health Care Workers Towards the Transmission of Blood-Borne Pathogens: An Intervention Study, *Egypt Public Health Assoc*, Vol. 84 No. 5 & 6.

El-Amin, H.H., Osman, E.M, Mekki, M O., Abdelraheem, M B., Ismail, M O., Yousif, M E A., Abass, A M., El-haj, H S. and ammar, HK. 2007. Hepatitis C virus infection in hemodialysis patients in Sudan, *Saudi Journalof Kidney Diseases and Transplantation*, (18(1):101-106 .)

Gaffeo, E. The Economics of HIV/AIDS: A Survey, Development Policy Review. 2003. 21 (1): 27- 49.

Konanur, HS. 2004. HIV/AIDS awareness program for health care workers –are they effective. Int. Conft. AIDS, 2004.

Machin, A., John, Wiley and Sons, 2007. Ltd. Sample Size Tables for Clinical Studies.

Ministory of Health, SNAP, global AIDS response progress reporting, p:6.2012

Mohammad, Asadpour, FatemehArabbaniassad, Reza Bida.ki, VidaMoazzeni, ZibaShabani and AhmadrezaSayadi. 2012. Assessment of Knowledge, Attitude, and Practice about Hepatitis B among Patient Porters of the Training and Treatment Hospitals of Rafsanjan, Gmj.ir.

Salami, T. A. T. and Babatunde. O. A. 2009. Health workers' knowledge, attitude and behaviortowards hepatitis B infection in Southern Nigeria, *International Journal of Medicine and Medical Sciences,* Vol. 1(10). Pp. 418-424,

SalwaAttia Mohamed and Alaa Mohamed Wafa. 1991. The Effects of an Educational Program on Nurses Knowledge and Practice Related toHepatitis C Virus: A Pretest and Posttest Quasi-Experimental Design, *Australian Journal of Basic and Applied Sciences*, 5(11): 564-570, .ISSN -8178).

Sanjay, Kini, B., Avinash, Kumar1, Siddhant Kumar2, MeghanaReddy, Akshay S. Nabar, Veena G. Kamath, Asha Kamath4, Eshwari, K1. 2014. Knowledge, Attitude and Practices regarding Biomedical Waste Management among staff of a tertiary healthcare centre in coastal Karnataka, *J Pub Health Med Res*,

ShankargoudaPatil, Roopa, S. Rao, 2013. AnveetaAgarwal. Awareness and risk perception of hepatitis B infection among auxiliary healthcare workers, *Journal of International Society of Preventive and Community Dentistry*, Vol. 3, No. 2.

Shiao, JSC., McLawas, ML., Huang, KY. and Guo, YL., 2001. Sharps injuries among hospital support personnel. *Journal of Hospital infection*,

Valti, Jogindra,Walia, Indrajit, Sharma, 2003. AIDS awareness among hospital class 4 employees. *Nursing Journal of India*.

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