Research Article

Quasi-experimental study to assess the effectiveness of structured teaching program on knowledge regarding management of Hepatitis B among Multipurpose health workers under training in Ancillary Medical Training school Baramulla Kashmir

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ABSTRACT

Hepatitis B is nowadays a concern to pay attention as day by day its length of spread is increased in the world and it leads to serious dysfunction of the liver organ. Hepatitis B is a serious infection caused by the hepatitis B Virus that is easily preventable by a vaccine. It has been recognized as a global health problem, issue and challenge because of its progression. In rare cases of chronic liver infection it is said that it can later develop cirrhosis or liver cancer. Hepatitis B has emerged as a global public health concern. If this disease is not cured at right time it can worse liver and may be fatal for human being. Moreover during the delivery of care of patients suffering with hepatitis B should take proper precautions by using personals protective equipment's. This disease can vary anywhere from a mild and self-limiting form to an aggressive and distractive disease leading death. Keeping these things in view a quantitative, quasi-experimental two group pretest posttest research design study was conducted to assess the knowledge regarding management of Hepatitis B for which 60 subjects were selected by simple random sampling. After data collection structured knowledge questionnaire was used to assess the knowledge among both the groups (control and experimental group). The data was analyzed by descriptive and inferential statistics using chi-square and t-test. The findings revealed that majority of the study subjects 29(96.7%) had good knowledge, 1(3.3%) had average knowledge and none of the subjects had neither average nor below average knowledge with posttest mean score 29.67, median 30.00 and standard deviation 2.57 in experimental group. Study concludes that there was gain in knowledge among students after importing structure teaching programme. The study also concluded that there was statistically significant association between educational qualification (p=0.001) of students with their pre-test knowledge scores while as no association was found between age, Residence and source of information of students with their pre-test knowledge scores (p>0.05).

Keywords: Effectiveness, knowledge, skill, structured teaching programme, hepatitis.

1. INTRODUCTION

Hepatitis has emerged as a global public health concern. The World Health Organization and Centre for Disease Control estimate that, currently over 500 million people are living with chronic viral hepatitis in the world. Of these, nearly 1 million die every year of the consequences of hepatitis, like cirrhosis or liver cancer more exactly, estimated 57% of liver cirrhosis and 78% of primary liver cancer cases are believed to result from hepatitis B virus (HBV) or hepatitis C virus (HCV) infections.1

Hepatitis B is a dreadful disease caused by the hepatitis B virus and is transmitted by infected body fluids of infected cases to the healthy ones by individuals hepatitis B virus cause acute hepatitis, a disease that can very anywhere from a mild and self-limiting form to an aggressive and distractive disease leading to post necrotic cirrhosis and death. As a person infected with hepatitis B virus could very often have few symptoms, but can be a carrier unknowingly for many years during this period she/he does not show any symptoms of this illness.2

Hepatitis B Virus have common routes of transmission, such as occupational exposure among health care workers , unprotected sexual contact, prenatal transmission, intravenous drug use or through blood products and contamination during medical procedures. Symptoms in HBV

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infection appear only in 35% of those infected. It has been demonstrated that patient medical histories are unreliable in identifying exposure to the infection5. Health care associated infections (HAIs) are a serious problem in the healthcare services as they are common causes of illness and mortality among patients. Despite the high prevalence of HBsAg among health workers, studies revealed inadequate knowledge of hepatitis B infection and poor safe practices to prevent its transmission among them.3

Bearing in mind that universal precautions play an important role in minimizing and preventing exposure of health care workers to pathogens there is a need for developing strategies to promote the use of universal precautions which take into account of behavior change and acquire of knowledge including its integration into practice. Training programme in universal precautions for health staff, involvement of senior health staff in the policies and their implementation, and systems for monitoring the appropriate use of equipment, and establishing post exposure reporting system is needed in hospitals to prevent hepatitis spread. Finally, routine immunization of health care workers against Hepatitis B is required.4

A study was conducted by Pathoumthonga K etal in Lao democratic People's Republic (Lao DPR),has indicated that 86.5 % of medical students had poor knowledge on modes of HBV transmission and risk perception.5 A similar study from Cameron ,has indicated poor practice among the study participants, with only 10 % vaccination rate against HBV, and 55.9 % accidental exposure to blood6.

According to the recent estimates, about one-third of the world population is infected with HBV of these about 360 million people are chronic carriers and are at risk of developing liver diseases like cirrhosis and hepatocellular carcinoma. The prevalence of chronic HBV infection greatly varies worldwide (0.5–20 %), due to differences in age at the time of infection and mode of acquisition. A disproportionately high prevalence of chronic HBV infections exists in Southeast Asian and sub-Sahara African countries. Health care workers (HCWs) are at high risk of HBV infection in the health care settings. The prevalence rate of HBV in HCWs is about 2–10 times higher than the general populations in the world. In context of HCWs, the risk factors for HBV infection are Percutaneous or mucosal exposure to infected blood or body fluids, using inadequately sterilized medical equipment or contact with non-intact skin. The average risk for acquiring HBV infection after percutaneous exposure to infected blood has been estimated to be 6–30 %, whereas it is about 0.3 % for human immunodeficiency virus. The risk of occupational exposure to HBV infection is highly prevalent among HCWs in developing countries, where the prevalence of HBV is high in general population, and the health settings are poor.7

Throughout the world, millions of healthcare professionals work in health institutions and it is estimated that 600,000 to 800,000 cut and puncture injuries occur among them per year, of which approximately 50% are not registered. According to the World Health Organization (WHO) the proportion of healthcare workers in the general population varied substantially from region to region (0.2-2.5%), as did the average number of injuries per healthcare worker (0.2- 4.7 sharp injuries per year). The annual proportion of healthcare workers exposed to blood-borne pathogens was 5.9% for HBV, corresponding to about 66,000 cases with HBV infections in healthcare workers worldwide.13

Health care workers all over the world and students constantly face the danger of getting exposed to HBV in the clinical setting. Yet the problem of exposure to contaminated blood among the HCWs has received inadequate attention, more so in India. The magnitude of the problem can be gauged from the fact that 4.4 million health care workers in the US receive approximately 800,000 needle sticks and other injuries from sharp objects annually. An estimated 16,000 of these objects are contaminated with HIV, and even more are contaminated with HBV or HCV. Nurses receive percutaneous injuries often as or more often than other Health care workers. Hence education about the transmission of blood-borne infections, vaccination, and post-exposure prophylaxis need to be comprehensively implemented and strictly monitored in all clinical and institutional setup.14

Today's trainees are tomorrow's health professionals and their knowledge will help in the prevention and control of Hepatitis B among health care professionals. As per literature review and personal experience of the researchers. It was observed that different health care workers get infected with Hepatitis B and precautions and preventive measures need to be taken by all health care workers to decrease this problem. Hepatitis B is a burning issue now a day's, this study will be very useful to HCWs Thus the investigators felt the need to take up the study by providing them teaching to upgrade their knowledge which helps them in meeting the most important role in disease prevention and health promotion thus by reducing the mortality rate due to Hepatitis B.

2. OBJECTIVES OF THE STUDY

1. To assess the pretest knowledge regarding Management of hepatitis B among multipurpose health workers under training in both experimental and control group

2. To assess the posttest knowledge regarding Management of hepatitis B among multipurpose health workers under training in both experimental and control group

3. To evaluate the effectiveness by comparing pre-test and post-test knowledge score regarding Management of hepatitis B among multipurpose health workers under training in both experimental and control group.

4. To determine the association between pretest knowledge score regarding Management of Hepatitis B among

multipurpose health workers under training with selected Demographic variables (Age, educational qualification, residence, source of information)..

3. MATERIALS AND METHODS

A quasi-experimental study design was conducted to assess the knowledge among multipurpose health workers under training in Ancillary Medical Training school Baramulla Kashmir. 60 subjects were selected by purposive sampling technique. Structure Knowledge questionnaire was adopted to collect the information from the participants in selected AMT School Baramulla. The tool consists of demographic variable and among multipurpose health workers under training in AMT School Baramulla. Prior to data collection informed consent was obtained from the participants. The data was analyzed using descriptive and inferential statistics.

4. RESULTS

Table 1: Distribution of respondents according to Age in experimental and control group:

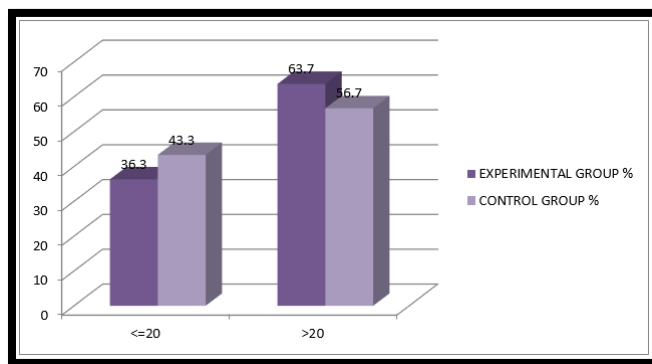| AGE	EXPERIMENTAL GROUP		CONTROL GROUP	
	N	%	N	%
<=20	11	36.3	13	43.3
>20	19	63.7	17	56.7
Total	30	100	30	100

Figure 1: Depicts that majority of multipurpose health workers are in the age group of >20 in both groups i.e. (63.7%) in Experimental group and (56.7%) in control group while the age group of <=20 rest of (36.3%) multipurpose health workers are in experimental group and (43.3%) in control group respectively

Table 2: Distribution of respondents according to their Educational qualification in Both Experimental and Control group:

EDUCATION	EXPERIMENTAL GROUP		CONTROL GROUP	
	N	%	N	%
10th	12	40	8	26.6
12th	14	46.7	19	63.4
Graduate	04	13.7	03	10.0

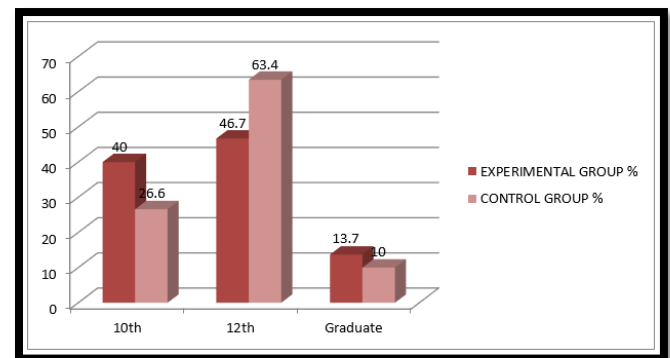|				
Total	30	100	30	100

Figure 2: Depict that majority of multipurpose health workers (40%) and (26.6%) had 10th standard educational qualification, (46.7%) and (63.4%) had higher secondary educational qualification, (13.7%) and (10%) had graduation in Experimental and control group respectively.

Table 3: Distribution of respondents according to their Residence in both experimental and control group.

Residence	EXPERIMENTAL GROUP		CONTROL GROUP	
	N	%	N	%
urban	8	26.7	8	26.7
Rural	22	73.3	22	73.3

Total	30	100	30	100

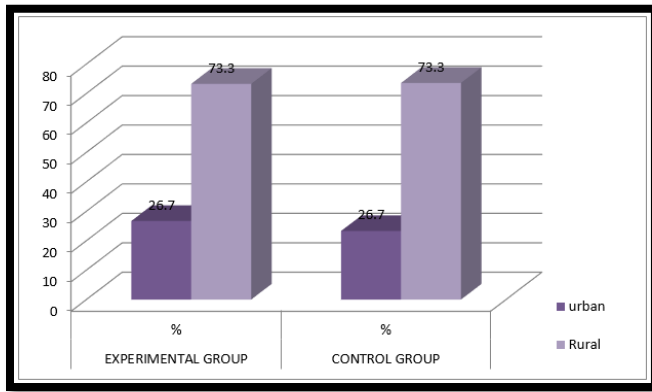| parents relatives/friends	4	13.3	7	23.3
teachers/books	23	76.7	21	70.0
mass media	3	10.0	02	6.6
Total	30	100	30	100

Figure 3:- Bar diagram depicts that majority of multipurpose health workers (26.7%) and (73.3%) belonged to urban and rural in experimental While as (26.4) % and (73.6%) belonged to urban and rural control group respectively.

Table 4: Distribution of respondents according to their source of information in experimental and control group

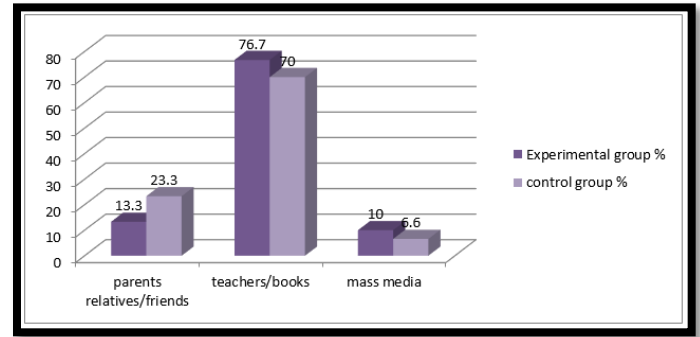| source of information	Experimental group		control group	
	n	%	n	%

Figure 4:- Bar diagram depicted that majority of multipurpose health workers (13.3%), (76.7%) and (10%) got information from parents/relatives, teachers/books and mass media in Experimental group respectively. While as (23.3%), (70%) and (6.6%) got information from parents/relatives, teachers/books and mass media in Control group respectively.

Table 5: Knowledge Level   regarding management of Hepatitis B among multipurpose health workers under training in experimental and control group.

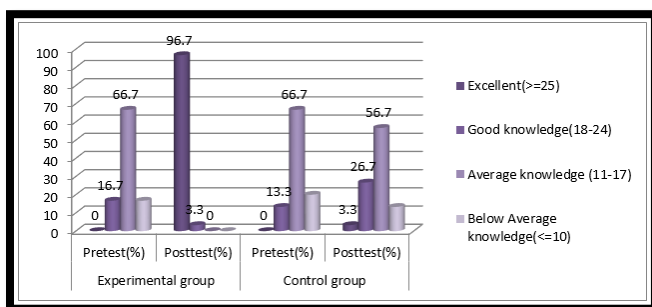| Levels of knowledge	Experimental group		Control group	
	Pretest (%)	Posttest (%)	Pretest (%)	Posttest (%)
Excellent(>=25)	0	29(96.7%)	0	1(3.3%)
Good knowledge(18-24)	5(16.7%)	1(3.3%)	4(13.3%)	8(26.7%)
Average knowledge (11-17)	20(66.7%)	0	20(66.7%)	17(56.7%)
Below Average knowledge($\leq$=10)	5(16.7%)	0	6(20.0%)	4(13.3%)

Figure 5:- Cylindrical diagram showed that in pretest and posttest majority of subjects (0%), (16.7%), (66.7%) and (16.7%), (96.7%), (3.3%) and (0%) had excellent, good, average and below average knowledge in experimental group respectively. While as in pretest and posttest majority of subjects (0%), (13.3%), (66.7%) and (20.0%), (3.3%), (26.7%), (56.7%) and (13.3%) had excellent, good, average and below average knowledge in control group respectively.

Table 6: Mean, Median & Standard Deviation of Pre and Post-Test Knowledge Scores regarding management of Hepatitis B among Multipurpose health worker under training in Experimental group.

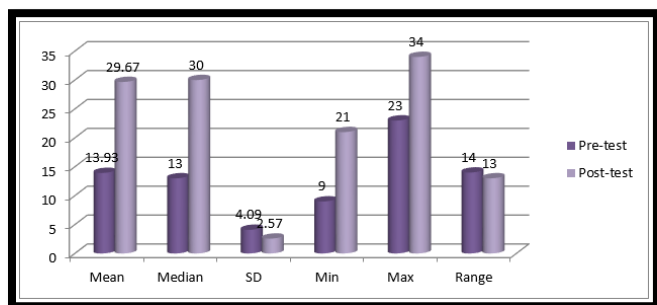| GROUP	KNOWLEDGE SCORE						
	PRETEST		POSTTEST		DF	T-TEST	P-VALUE
	N	MEAN±SD	n	MEAN±SD			
EXPERIMENTAL	30	13.93±4.0	30	29.67±2.57	29	18.43	P<0.0001

Figure 6 :- Cylindrical diagram revealed that the mean posttest knowledge score 29.67 was significant higher than mean pretest knowledge score 13.93 in experimental group which indicates that structured teaching program was highly effective in enhancing the knowledge in experimental group at mean difference 15.74.

- By using chi-square only education of study subjects (Nursing Students) was found to have significant association with the pretest knowledge score in experimental group.
- H1 i.e. mean post- test knowledge score of experimental group after the structured teaching programme regarding Hepatitis-B was significantly higher than their mean pretest knowledge at p< 0.05 level of significance . Hence null hypothesis was rejected and research hypothesis was accepted. So it was concluded that the structured teaching programme regarding Hepatitis-B had impact on increasing the knowledge of multipurpose health workers.

Table 9: Association between pre-test knowledge score of experimental group regarding management Hepatitis B among multipurpose health worker under training with selected demographic variables (age, education, residence and source of information).

Parameter	Category	n	Below average knowledge (%)	Average Knowledge (%)	Good Knowledge (%)	Excellent (%)	Chi-square	Df	p-value	RESULT
Age	1	11	1(20)	8(40)	2(40)		.718	2	.698	NS
	2	19	4(80)	12(60)	3(60)					
Education	1	12	4(80)	4(40)	4(80)		10.28	4	.036	SG
	2	14	1(20)	12(60)	1(20)					
	3	4		4(20)	0					
Residence	1	8	1(20)	6(30)	1(20)		.341	2	.84	NS
	2	22	4(80)	14(70)	4(80)					
Source of information	1	4	1(20)	3(15)	0		1.89	4	.755	NS
	2	23	4(80)	15(75)	4(80)					
	3	3	0	2(10)	1(20)					

Table 9: Shows A significant association was found between educational qualification (p=0.001) of multipurpose health worker under training with their pre-test knowledge scores; while as no association was found between age, Residence and source of information of multipurpose health worker under training with their pre-test knowledge scores (p>0.05). Hence partial null hypothesis is accepted.

5. CONCLUSIONS

The following conclusions were drawn on the basis of the findings of the study.

• Pretest findings showed the Knowledge score of multipurpose health worker under training in AMT School Baramulla was found poor regarding management of hepatitis B in both experimental and control group.

• There was improvement in knowledge and skill score of study subjects after the implementation of structured teaching programme regarding management of hepatitis B in experimental group as compared to control group which lacks structured teaching programme.

• The structured teaching program was found effective in improving the knowledge regarding management of hepatitis B as it was evident from posttest knowledge scores and when compared with control group which lacks STP.

• There was found significant association between educational qualification of multipurpose health worker under training with their pre-test knowledge as (p-value<0.001) and there was found no association between pre-test knowledge and other variables I.e. age, residence, source of information. This indicates that an effective program of health education programme regarding hepatitis B must be imparted on regular basis to pre-clinical multipurpose health workers under training in order to increase the knowledge regarding hepatitis because they are more prone for getting infected with Hepatitis-B as they are in close contact with the patients and thereby so as to prevent the disease and reduce morbidity and mortality.

6. RECCOMMENDATIONS

The Following studies can be undertaken in relation to present study

• A similar study need to be undertaken with a large number of samples for better generalization.

• A similar study can be conducted by seeking other variables.

• A similar study can be conducted on the staff-nurses to assess the knowledge regarding Hepatitis B.

• A True Experimental research approach can be used.

• The study can be conducted among non-nursing personnel to assess their knowledge regarding practice to prevent from Hepatitis B infection.

• Setting can be changed by involving more hospitals and nursing homes.

• A comparative study can be conducted to assess the knowledge and attitude regarding among nurses in hospitals.

• A comparative study can be conducted between nurses and students related complications of Hepatitis B.

7. AKNOWLEDGEMENT

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