

Original Research Article

Hepatitis update program: need of the situation to co-manage viral hepatitis and COVID-19

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ABSTRACT

Background: Government of India has taken several initiatives towards combating viral hepatitis but due to sudden surge in COVID-19 cases resulted in suspension of viral hepatitis program related activities. Moreover, COVID-19 has several liver related complications hence more special precautions are required to manage patients with known liver diseases. Nurses play an important role in management of any disease. However, there is limited knowledge among nurses on co-management of COVID-19 and viral hepatitis. With this background, two-day training program for nursing professionals was conceptualized under the project PRAKASH to educate and train the nurses about co-management of COVID-19 and viral hepatitis.

Methods: A pre-post study was undertaken among nurses who have registered for hepatitis update program. The online link to 25-knowledge related questions along with demographic variables was shared with the registered participants. Paired t test and other statistical analyses were done using SPSS v-21. Level of significance was taken at $p < 0.05$

Results: A total of 1151 responses were received out of 1477 trained participants. The mean age of the nursing participants was 32.5 ± 6.95 years. The overall mean knowledge score in the pre-assessment was found to be 15.47 ± 4.13 out of 25, which further increased to 20.72 ± 3.81 in the post-assessment. Gender, type of facility, education, willingness to get trained and prior training related to viral hepatitis were found to be independently associated with pre-knowledge score.

Conclusions: Training programs should be encouraged for diseases which are of public health importance and can't be ignored with respect to increasing burden of COVID-19 cases.

Keywords: Viral hepatitis, COVID-19, Co-management, Infection, Nurses, Knowledge

INTRODUCTION

Viral hepatitis is a major contributor to public health burden worldwide with nearly 257 million hepatitis B and 71 million hepatitis C chronic cases. Globally around 1.34 million deaths have been reported to be associated with viral hepatitis and major contribution is reported from developing countries such as India.¹ India has

approximately 40 million cases of hepatitis B and 6-12 million cases of hepatitis C infections which accounts to significant proportion of cases across the globe.² Hepatitis B infections in India accounts for around 11% of the global burden.³

Government of India has taken several steps towards combating viral hepatitis by 2030, such as execution of

health education programs, re-emphasizing the use of auto-disable needles and reuse-preventable needles and promoting the reporting of needle-stick injuries (NSI), taking stringent steps to ensure immunization against hepatitis B virus (HBV) among newborns, actively screening hepatitis C virus (HCV) infected cases under newly launched program national viral hepatitis control program (NVHCP).⁴ However, due to spread of contagious, deadly COVID-19 infection initially reported from Wuhan, China in December 2019, which transformed to pandemic in March 2020, an intermediate suspension came over several hepatitis services and national programs.^{5,6} Also, this interruption of services, probably resulted in additional cases of liver diseases and delayed treatment of already known cases, eventually resulting in increased deaths from viral hepatitis globally.⁷

Further, due to its novel and peculiar nature, COVID-19 is not only restricted to pulmonary complication but rather it has been associated with several other implications such as gastrointestinal, cardiovascular, neurological and many more others.⁸ Hepatic disorder and liver diseases are also identified as one of the major complications in patients contacted with novel coronavirus.⁹ It has been estimated that approximately half of the patients infected with COVID-19 are suspected to face hepatic issues such as asymptomatic abnormalities in biochemical tests or acute liver failure.¹⁰

Nurses have known to play an important role in educating and providing personalized care to patients whether it is management of viral hepatitis or COVID-19 cases.¹¹ However, additional burden of increasing patients, predisposes them to psychological distress.^{12,13} Despite all these issues, nursing professionals have emerged as frontline warriors in fight against novel coronavirus.¹⁴ However, with limited sources available for accurate literature for COVID-19 and increasing burden on health system due to multiplication of COVID-19 cases in very short duration, has left the healthcare workers with limited time to upgrade their knowledge about the disease. Poor knowledge has been reported among healthcare workers towards management of COVID-19 pandemic.¹⁵ Moreover, COVID-19 being a novel disease, it is still a mystery on several aspects, thus, there is limited knowledge among healthcare workers on co-management of COVID-19 and viral hepatitis.¹⁶

With this vision, two-day training program for nursing professionals was conceptualized under the project PRAKASH (PRogrammed Approach to Knowledge And Sensitization on Hepatitis). The mission of the training program was to educate and train the healthcare workers about co-management of COVID-19 and viral hepatitis. Thus, the present study aimed at assessing the change in knowledge of the nursing professionals after attending the two-day training program. The study also aimed at assessing the factors associated with pre-knowledge score.

METHODS

Study design and setting

A pre-post study was conducted among in-service nurses working in healthcare facilities across India from September 2020 to March 2021. This study was conducted at institute of liver and biliary sciences (ILBS) among the registered participants of the two-day training program titled "hepatitis update program" under project PRAKASH. ILBS is a super-specialty institute involved in treatment and management of liver and biliary diseases. Project PRAKASH is a capacity building initiative of ILBS for training primary care physicians and paramedical professionals about viral hepatitis. Project PRAKASH (PRogrammed approach to knowledge and sensitization on hepatitis) has two components: i) Hepatitis induction program (HIP), a one-day training program conducted at ILBS to build the capacity of primary care physicians and paramedical professionals for the management of viral hepatitis, ii) Hepatitis update program (HUP), a continued e-learning program, imparting advanced training on viral hepatitis.

Study population

In-service nursing professionals who registered for the hepatitis update program were eligible to participate in the study. The registered participants who attended all sessions in the training and completed both pre and post knowledge assessment were included in the study. The participants who either missed the sessions or didn't fill pretest or/and posttest were excluded from the study. The training program was conducted through the zoom application which had a capacity of 300 participants. Since there were limited seats, preference was given to the nurses who have already attended HIP training program organized under project PRAKASH (PRogrammed Approach to Knowledge And Sensitization on Hepatitis) in past. In addition, provisions were made to enroll the nursing final year students involved in the clinical duties.

Study tool

A pre-tested knowledge assessment questionnaire had two sections: (i) demographic and other details and (ii) knowledge related questions. Knowledge assessment questionnaire was administered to the participants to assess their pre and post knowledge. The questions in the questionnaire were related to management of viral hepatitis and COVID-19.

Section A consisted of questions related to demographic details such as age, gender, educational qualification, experience, location, designation, type of institute. Information related to prior trainings such as COVID-19, viral hepatitis, willingness to attend HUP training were also included in the questionnaire.

Section B consisted of 25 multiple choice questions related to knowledge of viral hepatitis and COVID-19. Knowledge related questions were further divided into five domains: (i) overview of hepatitis and COVID-19 (K1, K2, K3, K4 and K5), (ii) hepatitis and COVID-19-risk and association (K6, K7, K8, K9 and K10), (iii) diagnostic precautions in COVID-19 and viral hepatitis (K11, K12, K13, K14 and K15), (iv) management of COVID-19 in viral hepatitis (K16, K17, K18, K19 and K20) and (K21, K22, K23, K24 and K25) (v) Counselling of the viral hepatitis in COVID-19. One mark was given for each correct response and zero for each incorrect response. All domains had five questions each with a total of 5 marks for each domain.

Study procedure

A two-day training program titled 'hepatitis update program' was conducted for nurses under project PRAKASH from September 2020 to March 2021. The objective of the HUP was to train and disseminate knowledge regarding etiology and co-management of COVID-19 and viral hepatitis, impact of COVID-19 on NVHCP, infection prevention and mental aspects among viral hepatitis patients during COVID-19.

The scientific agenda of the training was prepared by the project team in consultation with faculty members at ILBS. Based on the training objectives, project team prepared the pre-post knowledge assessment questionnaire which was further shared with subject matter experts for suggestions and was finalized after incorporating their suggestions. Following finalization of operational issues, registration of participants was initiated through online mode.

Prior to commencement of the training program, an online pre-assessment questionnaire on COVID-19 and viral hepatitis was shared with the registered participants through online Survey monkey platform. The questionnaire was shared on mobile number and email id of the registered participants. It was ensured that the pre-test is filled before commencement of the scientific sessions, so as to get the true knowledge estimates of the participants. After completion of pre-test, training on scientific sessions were deliberated by the subject matters experts through online mode using zoom platform. The scientific sessions were divided into six major themes with duration ranging from 60 minutes to 70 minutes for each theme. The six themes were: (i) overview of hepatitis and COVID-19, (ii) impact of COVID-19 on NVHCP, (iii) diagnostic precautions in COVID-19 and viral hepatitis, (iv) management of COVID-19 in viral hepatitis, (v) management of chronic viral hepatitis in children and (vi) counselling of viral hepatitis patients during COVID-19. At the end of each session, queries of the participants were addressed by the concerned speaker. At the end of training program, post knowledge questionnaire was circulated to assess the change in knowledge of the nursing participants.

Data management and statistical analysis

The data of pre-post knowledge assessment was extracted in MS Excel and was analyzed using SPSS version-21.0. Personal details of the participants such as mobile number and email ID were replaced using unique ID to maintain the confidentiality of the participants and prevail anonymity of responses. Continuous data was presented as mean and standard deviation (SD) or median and interquartile range (IQR) whereas categorical data was represented as frequencies with percentages. For the analytical purpose, age was categorized into two categories: (i) less than 30 years and (ii) 30 years and above.¹⁷ Alike age, experience was also categorized into two categories-(i) less than five years and (ii) five years and above.¹⁸ Similarly, pre-knowledge score was divided as (i) poor to moderate, if the score was less than 66.6% of the total score and (ii) good if score was $\geq 66.6\%$ of the total score.¹⁹

Paired t-test was used to assess the score difference between overall and domain wise pre and post knowledge score. Univariable analysis was done using chi-square test for categorical variables and tabulated as odds ratio along with their 95% confidence intervals (CIs), and p value. Multivariate binary logistic regression was performed on variables found to be significant at p-value up to 0.10 in univariate analysis. However, overall level of significance was considered to be 0.05 (two sided).

RESULTS

A total of six two-day trainings for nursing professionals were conducted through online platform. A total of 1477 participants got trained out of which complete pre-post assessment responses were received from 1151 participants. Since participation in the study was completely voluntary and informed consent was taken from the participants before involving them in the study, the response rate was 77.9%.

The mean age of the nursing participants was 32.5 ± 6.95 years and around 64% of them were of 30 years and above. Approximately 80% of the participants were female, which is as per workforce distribution charters in Indian healthcare facilities. Of the total, more than 70% of them had experience of 5 and more years. Nearly 73% of the participants were working in government sector and merely 16.4% of the nursing workers were from outside Delhi. Approximately half of the participants (50.6%) had diploma degree and around 80% of the remaining were having bachelor's degree in nursing. Majority of the respondents (80.5%) were associated with their health facility in capacity of either nursing officer/junior nurse/staff nurse (Table 1).

Out of total 1151 nurses, 703 (61.1%) participants had attended training on COVID-19 in past six months whereas 49.5% of the total respondents had attended training on viral hepatitis in last two years. Around 48%

of the nursing professionals participated in HIP conducted by ILBS in last two years. Approximately 90% of the participants stated there is a need of taking special precaution during COVID-19 while managing chronic viral hepatitis patient. However, less than one-fourth (23.6%) of the participants were trained for managing viral hepatitis patients during COVID-19 pandemic (Table 2).

Table 1: Baseline characteristics of the nursing professionals, (n=1151).

Characteristics	N (%)
Mean Age±SD#	32.5±6.95
Age (Years)	
Less than 30	420 (36.5)
30 and above	713 (63.5)
Gender	
Male	228 (19.8)
Female	923 (80.2)
Median years of experience (IQR)	8 (4 -13)
Experience (Years)	
Less than 5	343 (29.8)
5 and above	808 (70.2)
Marital status	
Unmarried	334 (29.0)
Married	817 (71.0)
Type of Institute	
Government	844 (73.3)
Private	307 (26.7)
Location	
Delhi	962 (83.6)
Outside Delhi	189 (16.4)
Educational qualification	
Diploma	582 (50.6)
B. Sc Nursing	458 (39.8)
M. Sc Nursing and above	111 (9.6)
Occupation	
Currently Unemployed/Student	72 (6.3)
Deputy Nursing Officer/Staff	8 (0.7)
Nursing Officer/Junior Nurse/Staff Nurse	927 (80.5)
Senior Nursing Officer/Nurse In-charge	54 (4.7)
Tutor/Educator/Clinical Instructor/Faculty	90 (7.8)
Current department of posting	
COVID wards	104 (9.0)
College/School of nursing	164 (14.2)
Diagnostic labs	5 (0.4)
General wards	203 (17.6)
Geriatric wards	2 (0.2)
ICU	149 (12.9)
Maternity units	108 (9.4)
OPDs	98 (8.5)
Operation theatres	106 (9.2)
Pediatric unit	89 (7.7)
Psychiatry wards	51 (4.4)
Special wards	72 (6.3)

#SD: Standard Deviation, IQR: Inter-Quartile Range

Table 2: Summary related to previous trainings and viral hepatitis management during COVID-19 times, (n=1151).

Characteristics	N (%)
Attended any training related to COVID-19 in past 6 months	
Yes	703 (61.1)
No	448 (38.9)
Attended any training on viral hepatitis in last 2 years	
Yes	570 (49.5)
No	581 (50.5)
Attended Hepatitis Induction Program conducted at ILBS in the last 2 years	
Yes	554 (48.1)
No	597 (51.9)
Trained to manage Viral Hepatitis patients during COVID-19 pandemic	
Yes	272 (23.6)
No	879 (76.4)
COVID-19 special precautions should be taken while caring for a chronic viral hepatitis patient	
Yes	1030 (89.5)
Partially	52 (4.5)
No	69 (6.0)

The overall mean knowledge score in the pre-assessment was found to be 15.47±4.13 out of 25, which further increased to 20.72±3.81 in the post-assessment, following two-day training program. Change in pre and post knowledge score was found to be statistically significant ($p<0.001$). The domain wise pre and post knowledge score were 3.83±1.17 and 4.66±0.75 for overview of hepatitis and COVID-19 domain, 3.10±1.24 and 4.30±0.95 for hepatitis and COVID-19 risk and association domain, while for diagnostic precautions in COVID-19 and viral hepatitis domain pre and post score were 3.21±1.13 and 4.36±0.82, whereas for management of COVID-19 in viral hepatitis and counselling of viral hepatitis during COVID-19 domains pre and post knowledge scores were 2.53±1.24, 3.68±1.33 and 2.80±1.31, 3.82±1.17 respectively. There was significant increment ($p<0.001$) in pre and post score across all five domains (Table 3). The correct responses in the pre knowledge assessment were found to be 61.9% (ranging from 26.2% to 83.2%) which increased to 83.3% (ranging from 55.5% to 96.8%) in the post knowledge assessment (Supplementary: Table 1). A total of 54.7% of the participants had poor-to-moderate knowledge in pre-knowledge assessment.

The univariate analysis suggests the odds of female healthcare workers had 1.57 (95% CI 1.17-2.13; $p=0.003$) times higher knowledge as compared to male healthcare workers. Similarly, the odds of participants with more experience (>5 years) had 1.46 (95% CI 1.28-1.89; $p=0.004$) times higher knowledge as compared to participants with less than 5 years of experience. For a healthcare worker working in government setting, the

odds of having higher knowledge are 1.94 times (95% CI: 1.48-2.55, $p<0.001$) as high as the odds for a healthcare worker working in private healthcare facility. The odds of knowledge related to COVID-19 and viral hepatitis was found to be higher among participants with Bachelor's degree in nursing (OR: 95% CI: 2.45 (1.91-3.16); $p<0.001$) and master's degree in nursing (OR: (95% CI: 1.89 (1.25-2.84); $p<0.001$) as compared to Diploma holders. Age and current designation were not found to be significantly associated with knowledge scores, hence were not included in the multivariable analysis. Moreover, odds of having higher knowledge were observed in participants with exposure to previous training on viral hepatitis in last two years (OR: 1.46 (95%CI: 1.16-1.85; $p=0.001$) the ones who didn't have any prior exposure. However, there was no significant association observed with knowledge score and previous training attended related to COVID-19 in last 6 months.

The multivariable analysis suggested, odds of having higher knowledge in female workers was 1.82 times (95% CI: 1.32-2.52, $p<0.001$) times males' workers after adjusting for other factors. Similarly, association between knowledge score was found to be significant with type of facility working ($p<0.001$) and educational qualification of participants ($p<0.001$) after adjusting for variables. However, location and years of experience were not found to be significantly associated with knowledge score

after adjusting for other factors as shown in Table 3.

Table 3: Overall and domain wise pre-post knowledge assessment.

Domain name	Mean pre-test score \pm SD	Mean post-test score \pm SD	P value
Overview of hepatitis and COVID-19	3.83 \pm 1.17	4.66 \pm 0.75	<0.001
Hepatitis and COVID-19-Risk and association	3.10 \pm 1.24	4.30 \pm 0.95	<0.001
Diagnostic precautions in COVID-19 and viral hepatitis	3.21 \pm 1.13	4.36 \pm 0.82	<0.001
Management of COVID-19 in viral hepatitis	2.53 \pm 1.24	3.68 \pm 1.33	<0.001
Counselling of viral hepatitis during COVID-19	2.80 \pm 1.31	3.82 \pm 1.17	<0.001
Overall knowledge score	15.47 \pm 4.13	20.72 \pm 3.81	<0.001

Table 4: Association of factors with pre assessment knowledge score.

Factors	Poor-Moderate pre-knowledge (<66.6%), n=630, n (%)	Good pre-knowledge (\geq 66.6%), n=521, n (%)	OR	P value	aOR	P value#
Age (Years)						
<30	241 (57.4)	179 (42.6)	Ref	0.172	---	---
\geq 30	389 (53.2)	342 (46.8)	1.18 (0.93-1.51)			
Gender						
Male	145 (63.6)	83 (36.4)	Ref	0.003	Ref	<0.001*
Female	485 (52.5)	438 (47.5)	1.57 (1.17-2.13)		1.82 (1.32-2.52)	
Experience (Years)						
<5	210 (61.2)	133 (38.8)	Ref	0.004	Ref	0.107
\geq 5	420 (52.0)	388 (48.0)	1.46 (1.28-1.89)		1.28 (0.95-1.74)	
Location						
Outside Delhi	114 (60.3)	75 (39.7)	Ref	0.092	Ref	0.560
Delhi	516 (53.6)	446 (46.4)	1.31 (0.96-1.81)		1.12 (0.76-1.67)	
Type of facility						
Private	204 (66.4)	103 (33.4)	Ref	<0.001	Ref	<0.001*
Government	426 (50.5)	418 (49.5)	1.94 (1.48-2.55)		1.91 (1.37-2.65)	
Educational qualification						
Diploma	378 (64.9)	204 (35.1)	Ref	<0.001	Ref	<0.001*
B.Sc. Nursing	197 (43.0)	261 (57.0)	2.45 (1.91-3.16)		2.71 (2.07-3.54)	<0.001*
M.Sc. Nursing	55 (49.5)	56 (50.5)	1.89 (1.25-2.84)		2.73 (1.71-4.37)	<0.001*

Continued.

Factors	Poor-Moderate pre-knowledge (<66.6%), n=630, n (%)	Good pre-knowledge (≥66.6%), n=521, n (%)	OR	P value	aOR	P value
Designation						
Currently Unemployed/Student	47 (65.3)	25 (34.7)				
Deputy nursing officer/Staff	5 (62.5)	3 (37.5)				
Nursing Officer/Junior Nurse/Staff Nurse	501 (54.0)	426 (46.0)	Ref 1.13 (0.25-5.11) 1.60 (0.97-2.64)	0.436	---	---
Senior nursing Officer/Nurse In-charge	28 (51.9)	26 (48.1)	1.75 (0.85-3.59) 1.57 (0.83-2.98)			
Tutor/Educator/Clinical/Instructor/Faculty/Lecturer	49 (54.4)	41 (45.6)				
Attended any training related to COVID-19 in past 6 months						
No	261 (58.3)	187 (41.7)	Ref		Ref	
Yes	369 (52.5)	334 (47.5)	1.26 (0.99-1.60)	0.055	1.08 (0.83-1.39)	0.593
Attended any training on viral hepatitis in last 2 years						
No	345 (59.4)	236 (40.6)	Ref		Ref	
Yes	285 (50.0)	285 (50.0)	1.46 (1.16-1.85)	0.001	1.37 (1.07-1.76)	0.014*
Willingness to get trained for co-management of viral hepatitis and COVID-19						
No	64 (75.29)	21 (24.71)	Ref		Ref	
Yes	566 (53.10)	500 (46.90)	2.69 (1.62-4.47)	<0.001	1.99 (1.17-3.40)	0.011*

#P value of the model <0.001, Ref: Reference, OR: Odds Ratio, aOR: Adjusted Odds Ratio

DISCUSSION

The present study was undertaken by project PRAKASH to assess the change in knowledge of the nursing professionals after attending the two-day training program focusing on management of viral hepatitis in COVID-19 pandemic. The results of the study disclosed poor-to-moderate knowledge among 54.7% of the participants in the pre knowledge assessment. The knowledge score obtained in our study could not be compared to other national and international studies as there were no other study assessing the knowledge of management of viral hepatitis during COVID-19 times. However, the knowledge score obtained in the present study was found to be similar to Indian studies assessing knowledge related to COVID-19 among in-services nurses as well as knowledge related to viral hepatitis separately.^{15,20} Another study from India reported a higher knowledge as compared to the present study, this could be attributable to variation in the questionnaire.²¹

The knowledge score in pre knowledge assessment was found to be significantly associated with factors such as gender, years of experience, geographical location, type of facility working and educational qualification of the participants. However, only gender, type of facility working and educational qualification of the participants were found to be independently associated after adjusting

for various other factors. Similar independent association was observed in a studies related to COVID-19.^{20,21} However, the present study didn't show significant association with age and years of experience as observed in previous studies. This could be explained as the COVID-19 is a novel disease with limited and accurate resources, about management of viral hepatitis patients during COVID-19, hence age and experience couldn't have a role in increasing the knowledge related to management of viral hepatitis patients during COVID-19. The knowledge was also found to be higher among participants who had an exposure to previous trainings on viral hepatitis. It has been confirmed through previous studies that prior knowledge from previous courses significantly influence the current knowledge.²² However, this was not found to be true in case of previous trainings related to COVID-19, because disease specific management guidelines are required for COVID-19 scenario.

The mean knowledge score in pre-test was found to be 15.47±4.13 out of 25 whereas the knowledge score increased to 20.72±3.81 after attending the two-day training program on prevention and management of viral hepatitis during COVID-19 pandemic. The increased in knowledge can be attributable to two-day comprehensive training program specifically designed for Indian nurses. The study findings are in line with the previous studies

that emphasized, increase in knowledge levels after attending training programs.^{18,23} The knowledge was seen to improve significantly irrespective of the domain. The improvement of knowledge with respect to each domain can be attributable to the two-days training program.

The present study had an inherited limitation of response shift bias because of its pre-post study design. Study could also have suffered a selection bias as the study was only restricted to people who had internet access and registered for the training. This was done considering the COVID-19 guidelines where face-to-face trainings were not feasible, and e-learning was the only available learning tool. Moreover, the training was given though online mode in English language only, hence people not having a better understanding of the language could have difficulty in understanding the training program at regular pace.

Despite these limitations, there are several unique aspects and strength of the study. Firstly, the study was able to capture the change in knowledge of more than 1000 participants after a two-day training program during pandemic times. Moreover, the two-day training program itself was based on a unique concept, which emphasised the management of viral hepatitis patients during COVID-19. This was done to ensure that the despite the increasing cases of COVID-19, other non-communicable disease of public health importance should not be overlooked. Thus, the study leads the path for similar such training courses which are equally important and can't be ignored even during times of COVID-19 pandemic.

CONCLUSION

The two-day training program significantly helped in improving the knowledge of the healthcare workers about management of viral hepatitis patients during COVID-19 pandemic. Thus, similar training programs should be encouraged for diseases which are of public health importance and can't be ignored with respect to increasing burden of COVID-19 cases.

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APPENDIX

Supplementary table 1: Correct responses of pre and post knowledge assessment.

Q. No	Questions	Pre-test scores	Post-test scores
		(n) (%)	(n) (%)
		Correct responses	Correct responses
K1	How many types of viral hepatitis are known to cause infection in humans?	823 (71.3)	1117 (96.8)
K2	Which of the following is true?	950 (82.3)	1095 (94.9)
K3	Hepatitis A is transmitted through?	954 (82.7)	1050 (91.0)
K4	COVID-19 can't be transmitted through:	763 (66.1)	1022 (88.6)
K5	Hepatitis B can't be transmitted through:	932 (80.8)	1090 (94.5)
K6	What is the time period between exposure to infection and the appearance of the first symptoms (Incubation Period) for COVID-19 and Hepatitis B respectively?	499 (43.2)	1019 (88.3)
sK7	Vaccine against pneumonia provides protection against COVID-19.	913 (79.1)	939 (81.4)
K8	Following strategies can be used for preventing HBV infection EXCEPT:	638 (55.3)	969 (84.0)
K9	A child born to a HBV infected mother should receive	738 (64.0)	1053 (91.2)
K10	Which is true regarding the Lactating mother and disease status?	784 (67.9)	979 (84.8)
K11	Needle stick injury can cause the following infection	960 (83.2)	1070 (92.7)
K12	Which of the following is NOT the correct set of personal protective equipment's?	810 (70.2)	1071 (92.8)
K13	To clean blood spills from a viral hepatitis and COVID-19 infected person what should be used?	786 (68.1)	1075 (93.2)
K14	Masks and gloves used by Hepatitis B positive but COVID-19 negative patient should be disposed off as:	621 (53.8)	785 (68.0)
K15	Used gloves from a healthcare worker treating a hepatitis and COVID-19 positive patient will be disposed off in:	522 (45.2)	1030 (89.3)
K16	Initiating treatment of hepatitis B in a patient with COVID-19 is contraindicated.	862 (74.7)	959 (83.1)
K17	Along with COVID-19 testing what additional data should be available for a potential liver donor or liver recipient	665 (57.6)	923 (80.0)
K18	Transplantation in SARS-CoV-2-positive transplant candidates:	302 (26.2)	640 (55.5)
K19	Which of the following drugs used in management of COVID-19 can reactivate the infection in chronic HBV patients?	356 (30.8)	822 (71.2)
K20	People with hepatitis may stay safe during COVID-19 crisis by following these precautions EXCEPT?	738 (64.0)	908 (78.7)
K21	Steps initiated by Government of India to manage Hepatitis C patients in India during COVID-19:	401 (34.7)	762 (66.0)
K22	Which of the following is true?	779 (67.5)	918 (79.5)
K23	Among which of the following who is most suitable for donating convalescent plasma:	839 (72.7)	1000 (86.7)
K24	What precautions should not be re-emphasized in children and adults to prevent Food-borne viral hepatitis and COVID-19?	657 (56.9)	977 (84.7)
K25	Which of the following is false?	556 (48.2)	755 (65.4)