

# Effectiveness of Socratic Method Teaching on Knowledge and Attitude Regarding Hepatitis

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## Abstract

*Introduction:* Hepatitis is one of the most common communicable diseases leading to permanent damage of the liver causing disability and even death. Health care personals are increasingly faced with the challenge of dealing with these patients on a day-to-day basis. The purpose of the study was to assess the effectiveness of Socratic Method of teaching on knowledge and attitude regarding hepatitis among nursing students. *Methods:* Data collection was done using demographic proforma; structured knowledge questionnaire and an attitude scale. *Results:* The analysis revealed that the post test mean scores for knowledge and attitude were significantly higher than the pre test mean scores i.e. the t-value for knowledge was  $t_{60}=10.09$  and for attitude was  $t_{60}=7.23$ , which were found to be significant at 0.05% level. This significant improvement in post test scores revealed that there was an improvement in knowledge and attitude of nursing students. *Conclusions:* Based on the findings it is concluded that the Socratic Method of teaching is highly effective in improving knowledge and attitude regarding hepatitis among nursing students.

**Keywords:** Hepatitis; Socratic Method; Communicable Diseases.

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## Introduction

Liver is the largest organ in the body. The liver is a roughly triangular organ that extent across the abdominal cavity just inferior to the diaphragm. The Liver plays an active role in the process .

Hepatitis (plural: Hepatitis's) is a medical condition defined by the inflammation of the liver and characterized by the presence of the inflammation cells in the tissue of the organ.

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Hepatitis may occur with limited or no symptoms, but often leads to the yellow discoloration of the skin, the mucus membrane, and the conjunctivae, the poor appetite and malaise. Hepatitis is acute when it lasts less than six months and chronic when it is persist longer. The condition can be self-limiting (healing on its own) or can progress to fibrous (scarring) and the cirrhosis.

Hepatitis is widely spread, affecting 400 million people worldwide, over 10 times the number of people infected with HIV. Globally, about 1.4 million people die each year from hepatitis. There are 5 main hepatitis viruses, referred to as type A, B, C, D and E. These 5 types are of greatest concern because of the burden of illness and death they cause and the potential for outbreaks and epidemic spread [2].

## Aim of the Study

The aim of the study to evaluate effective of Socratic Method of teaching on knowledge and attitude regarding Hepatitis.

### Objectives of the Study

- To evaluate the effectiveness of Socratic method of teaching on knowledge and attitude regarding Hepatitis among nursing students.
- To associate the level of knowledge and attitude regarding hepatitis among nursing students with their selected demographic variables.

### Materials and Methods

A quasi experimental design was adapted to determine the effectiveness of Socratic method of teaching on knowledge and attitude regarding hepatitis among nursing students. A structured questionnaire and attitude scale was used.

The constructed tools such as demographic performa, structured knowledge questionnaire and

attitude scale on hepatitis along with the objectives and criteria were given to 6 subject experts from the field of medical surgical nursing, gastroenterologist and biostatistician for the content validity. The validity index was 0.92.

The participants were selected through random sampling technique and the sample size was 61.

The data was collected using self administer structured knowledge questionnaire and attitude scale. Demographic performa was filled by the samples themselves.

The Socratic method of teaching consisted continual probing questions of the teacher, in a concerted effort to explore the underlying beliefs that shape the students views and opinions. Animated videos And power point presentation used on hepatitis, Pre test was conducted and Socratic method of teaching was administered on the same day. Post test was conducted after 7 days.

### Results

**Table 1:** Frequency and percentage distribution of nursing students according to their demographic variables  
n=61

S. No	Demographic variables	Frequency(f)	Percentage (%)
1	<b>Age in years</b>		
	18-20	32	52.45
	21-23	29	47.54
	Above 23	-	-
2.	<b>Gender</b>		
	Male	3	4.91
	Female	58	95.08
3.	<b>Educational status</b>		
	2 <sup>nd</sup> year	37	60.65
	3 <sup>rd</sup> year	24	39.34
4.	<b>Family income</b>		
	15,000-20,000	27	44.26
	20,001-25,000	18	29.50
	Above 25,000	16	26.22
5.	<b>Religion</b>		
	Hindu	44	72.13
	Muslim	1	1.63
	Christian	14	22.95
	Others	2	3.27
6.	<b>Domicile of birth</b>		
	Rural	13	21.31
	Urban	35	57.37
	Semi urban	13	21.31

The data presented in Table 1 show that 32(52.45%) of the students belonged to the age group of 18-20yrs, 29(47.54%) of the students belonged to the age group of 21-23 years and none of the students (0%) belonged to the age group of above 23 years.

3(4.91%) of the participants were male and 58(95.08%) were female. 37(60.65%) of the participants were in 2<sup>nd</sup> year and 24(39.34%) of the participants were in 3<sup>rd</sup> year. In terms of family income 27(44.26%) of the participants were in the

income category of Rs.15,000 – 20,000 , 18(29.50%) of the participants were in the income category of Rs.20,001–25,000 and 16(26.22%) of the participants were in the income category of above Rs. 25,000.

In regards to religion 44(72.13%) of the participants were Hindu, 1(1.63%) of the participants was Muslim, 14(22.95%) of the

participants were Christian and 2(3.27%) of the participants were from other category.

13(21.31%) of the participants were born in rural area, 35(57.37%) of the participants were born in urban areas and 13(21.31%) of the participant were born in semi urban area.

*Table 2: Assessment of pre test level of knowledge and attitude among nursing students.*

**Table 2.1:** Frequency and percentage distribution of nursing students according to pre test level of knowledge n=61

Sl. No	Pre Test Level of Knowledge	F	%
1.	Inadequate knowledge	4	6.56
2.	Moderate knowledge	50	81.96
3.	Adequate knowledge	7	11.48
	<b>Total</b>	<b>61</b>	<b>100</b>

Table 2.1 Shows that majority of the participants 50(81.96%) were having moderate knowledge, 7(11.48%) were having adequate knowledge and 4(6.56%) were having inadequate knowledge.

Table 2.2 shows that 34(55.74%) of the participants were having favourable attitude, 27(44.26%) were having neutral attitude and none of them were having unfavourable attitude.

**Table 2.2:** Frequency and percentage distribution of nursing students according to pre test level of attitude. n=61

S. No	Pre Test Level of Attitude	F	%
1.	unfavourable attitude	-	-
2	Neutral attitude	27	44.26
3	Favourable attitude	34	55.74
	<b>Total</b>	<b>61</b>	<b>100</b>

*Table 3: Assessment of post test level of knowledge and attitude among nursing students.*

**Table 3.1:** Frequency and percentage distribution of nursing students according to post test level of knowledge n=61

Sl. No	Post test level of knowledge	F	%
1.	Inadequate knowledge	1	1.64
2	Moderate knowledge	23	37.70
3	Adequate knowledge	37	60.66
	<b>Total</b>	<b>61</b>	<b>100</b>

Table 3.1. shows that majority of the participants 37(60.66%) were having adequate knowledge, 23(37.70%) were having moderate knowledge and 1(1.64%) of them were having inadequate knowledge.

Table 3.2. shows that majority 50(81.97%) of the participants were having favourable attitude, 11(18.03%) were having neutral attitude and none of them were having unfavourable attitude.

**Table 3.2:** Frequency and percentage distribution of paramedical students according to post test level of attitude. n=61

S. No	Post test level of attitude	F	%
1.	unfavourable attitude	-	-
2	Neutral attitude	11	18.03
3	Favourable attitude	50	81.97
	<b>Total</b>	<b>61</b>	<b>100</b>

Table 4 shows that the post test mean of knowledge score (13.83) was higher than the pre test mean of knowledge score (11.60). This difference

between the pre test and post test mean scores are significant.

**Table 4:** Range, mean and SD of knowledge among nursing students

Knowledge level	Range	Mean	SD
Pre test	7-14	11.60	1.72
Post test	7-17	13.83	1.52

**Table 5:** Mean, SD and t-value of pre test and post test knowledge score n=61

Scores	Mean	SD	t-test
Pre test	11.60	1.72	10.09
Post test	13.83	1.52	

$$t_{(60)}=2.00 \text{ (p}<0.05)$$

Significance of Difference between Pre Test and Post Test Knowledge Scores of Nursing Students.

To find out the true difference between means of pre test and post test knowledge scores, t value is calculated. To test the level of significance at 0.05 level null hypothesis was stated as:

$H_0$ : There is no significant difference between the pre test and post test level of knowledge regarding hepatitis among the paramedical students. The data is shown in Table 5.

Table 5 shows that the post test score is more than the pre test score. The 't' value was found to be significant;  $t_{60}=10.09$ . This indicates that the structure teaching programme was effective in improving the knowledge regarding hepatitis.

Table 6 shows that the post test mean of attitude score (62.06) was higher than the pre test mean of attitude score (57.21). This difference between the pre test and post test mean scores are significant.

**Table 6:** Range, mean and SD of attitude among nursing students n=61

Attitude level	Range	Mean	SD
Pre test	49-68	57.21	4.47
Post test	50-72	62.06	5.43

**Table 7:** Mean, SD and t-value of pre test and post test attitude score

Scores	Mean	SD	t-test
Pre test	57.21	4.47	7.23
Post test	62.06	5.43	

$$t_{(60)}=2.00 \text{ (p}<0.05)$$

Significance of Difference Between Pre Test and Post Test Attitude Scores of Nursing Students.

To find out the true difference between means of pre test and post test attitude scores, t value is calculated. To test the level of significance at 0.05 level null hypothesis was stated as :

$H_0$ : There is no significant difference between the pre test and post test level of attitude regarding

hepatitis among the paramedical students. The data is shown in table 7.

Table 7 shows that the post test score is more than the pre test score. The 't' value was found to be significant;  $t_{60}=7.23$ . This indicates that the structure teaching programme was effective in improving the attitude regarding hepatitis.

**Table 8:** Assessment of correlation between the post test level of knowledge and attitude regarding hepatitis among nursing students.

Variables	Mean	SD	Correlation	p-value
Knowledge	13.83	1.52	0.27	P<0.05
Attitude	62.06	5.43		

Table 8 shows the correlation between post test level of knowledge and attitude among paramedical students. Mean post test level of knowledge was 13.83 and SD was 1.52. Mean post test level of

attitude was 62.06 and SD was 5.43. And the correlation between knowledge and attitude among paramedical students was found to be 0.27. It was found to be a weak correlation.

Table 9: Association between demographic variables with the knowledge and attitude among nursing students.

Table 9.1: Association between the post test level of knowledge regarding among nursing students and their selected demographic variable n=61

S. No	Demographic variables	Sample (n=61)		Pain				X <sup>2</sup> value	p-value
		No.	%	≤median		>median			
				No.	%	No.	%		
1.	<b>Age in years</b>								
	18-20	32	52.45	21	34.42	11	18.03	0.69	P<0.05
	21-23	29	47.54	16	26.22	13	21.31	DF=2,	
Above 23	-	-	-	-	-	-	NS		
2.	<b>Gender</b>								
	Male	3	4.91	1	1.63	2	3.27	0.94	P<0.05
	Female	58	95.08	36	59.01	22	36.06	DF=1	
							NS		
3.	<b>Educational status</b>								
	2 <sup>nd</sup> year	37	60.65	25	40.98	13	21.31	1.17	P<0.05
	3 <sup>rd</sup> year	24	39.34	12	19.67	11	18.03	DF=1	
							NS		
4.	<b>Family income</b>								
	15,000-20,000	27	44.26	17	27.86	11	18.03	11.03	P<0.05
	20,001-25,000	18	29.50	6	9.83	10	16.39	DF=2	
Above 25,000	16	26.22	14	22.95	3	4.91	S		
5.	<b>Religion</b>								
	Hindu	44	72.13	30	49.18	14	22.95	5.41	P<0.05
	Muslim	1	1.63	1	1.63	-	-	DF=3	
	Christian	14	22.95	5	8.19	9	14.75	NS	
Others	2	3.27	1	1.63	1	1.63			
6.	<b>Domicile of birth</b>								
	Rural	13	21.31	7	11.47	6	9.83	4.62	P<0.05
	Urban	35	57.37	25	40.98	10	16.39	DF=2	
Semi urban	13	21.31	5	8.19	8	13.11	NS		

Note: S-Significant at 5% level(i.e, p<0.05), NS- Not significant at 5% level(i.e, p<0.05)

Table 9.2: Association between the post test level of attitude among nursing students and their selected demographic variable n=61

S. No	Demographic variables	Sample (n=61)		Pain				X <sup>2</sup>	p-value
		No.	%	≤median		>median			
				No.	%	No.	%		
1.	<b>Age in years</b>								
	18-20	32	52.45	13	21.31	20	32.78	0.25	P<0.05
	21-23	29	47.54	13	21.31	15	24.59	df=3,	
Above 23	-	-					NS		
2.	<b>Gender</b>								
	Male	3	4.91	1	1.63	2	3.27	0	P<0.05
	Female	58	95.08	25	40.98	33	54.09	df=2	
							NS		
3.	<b>Educational status</b>								
	2 <sup>nd</sup> year	37	60.65	14	22.95	26	42.62	0.60	P<0.05
	3 <sup>rd</sup> year	24	39.34	12	19.67	9	14.75	df=2	
							NS		
4.	<b>Family income</b>								
	15,000-20,000	27	44.26	14	22.95	12	19.67	0.87	P<0.05
	20,001-25,000	18	29.50	8	13.11	8	13.11	df=3	
Above 25,000	16	26.22	4	6.55	15	24.59	NS		
5.	<b>Religion</b>								
	Hindu	44	72.13	21	34.42	23	37.70	0.39	P<0.05
	Muslim	1	1.63	1	1.63	2	3.27	df=4	
	Christian	14	22.95	3	4.91	10	16.39	NS	
Others	2	3.27	1	1.63	-	-			
6.	<b>Domicile of birth</b>								
	Rural	13	21.31	6	9.83	8	13.11	0.01	P<0.05
	Urban	35	57.37	15	24.59	18	29.50	df=3	
Semi urban	13	21.31	6	9.83	8	13.11	NS		

Note: NS- Not significant at 5% level(i.e, p<0.05)

The above table shows the association between level of knowledge and selected demographic variables among paramedical students. The table suggest that there is a statistical association between level of knowledge with their monthly family income and other variables such as age, gender, educational status, religion, domicile of birth were not associated with their knowledge regarding hepatitis.

The above table shows the association between level of attitude and selected demographic variables among nursing students. The table suggest that there is no statistical association between level of attitude demographic variables such as age, gender, educational status, religion, monthly family income, domicile of birth .

## Discussion

The study reveals that there was significant improvement in regards to the level of post test level of knowledge and attitude regarding hepatitis among nursing students. Based on pre test level of knowledge majority 50(81.96%)of the participant were had moderate knowledge, 4(6.56%) were had inadequate and 7(11.48%) were had adequate knowledge. And in regards to attitude 34(55.74%) of the participant were had favourable attitude, 27(44.26%) were had moderately favourable attitude and none of them were had in favourable attitude.

Based on post test assessment majority 37(60.66%) of the participant were moved adequate knowledge, 23(37.70%) were had moderate knowledge and 1(1.64%) of them were had inadequate knowledge and in regards to attitude majority 50(81.97%) of the participant were having favourable attitude, 11(18.03%) were having moderately favourable attitude and none of them were having in favourable attitude. The correlation between post test level of knowledge and attitude among paramedical students was found to be 0.27 and was found to be a weak correlation.

Based on the finding it is safe to conclude that Socratic method of teaching is highly effective in improving knowledge and attitude regarding hepatitis among paramedical students.

The finding of the study was supported by a study conducted on Comparing dental students' knowledge of and attitudes toward hepatitis B virus-, hepatitis C virus-, and HIV-infected patients in Taiwan. This study investigated and compared Taiwanese dental students' knowledge of hepatitis B virus (HBV),

hepatitis C virus (HCV), and HIV infection, attitudes toward infected patients, and important factors associated with the willingness to treat infected patients. In 2001, a self-administered questionnaire survey was conducted on all 1930 dental students enrolled from seven dental schools in Taiwan, with a response rate of 54.4%. Multiple logistic regression analysis was applied to assess the relationship between multiple factors and willingness to treat. Multivariate analysis was used to compare knowledge levels and the willingness. Of the respondents, 80%, 75%, and 49% were willing to treat HBV-, HCV-, and HIV-infected patients, respectively, and differences among the percentages were statistically significant. Students were less knowledgeable about HCV infection compared to HBV and HIV infection. Factors significantly associated with willingness to treat HBV- or HCV-infected patients were: feeling morally responsible and being able to treat infected patients safely. Those feeling morally responsible (odds ratio [OR] = 33.0, 95% confidence interval [CI] = 15.2, 71.8) and those being able to treat infected patients safely (OR = 4.1, 95% CI = 1.7, 9.9) were more willing to treat HIV patients. Taiwanese dental students were more willing to treat HBV- and HCV-infected patients than to treat HIV-infected patients.

## Conclusion

The present study findings reveal that Socratic Method of teaching is highly effective in improving knowledge and attitude regarding hepatitis among nursing students.

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