Results

The results of this study are presented in the following parts:

Part I. Sociodemographic characteristics of the studied sample: table 1.

Part II. Students' knowledge regarding the concept of infectious disease, causes, types, signs & symptoms, modes of transmission, complications and preventive measures of viral hepatitis: tables (2 – 21), figure.

Table (1): Distribution of children by their sociodemographic characteristics.

Items	Number	Percent %
*Age in years		
10-	28	8.3
11-	114	33.6
12-	178	52.5
13-14	19	5.6
(mean) $\bar{x}$ ± SD	11.5 ± 0.72	
* Sex		
- male	152	44.8
- female	187	55.2
*level of education		
-5th class	97	28.6
-6th class	242	71.4
*Area		
- rural	142	41.8
- urban	197	58.2

Table (1) shows distribution of children by their age, it ranged from 10-14 years with mean (11.5) and standard deviation (0.72). Regarding sex 44.8% were males and 55.2% were females. Regarding the level of education 28.6% children in 5th class and 71.4% in 6th class. 41.8% of the students from rural area and 58.2% from urban area.

Table (2): Distribution of children by their source of information about infectious diseases and viral hepatitis.

Items	Pre		Post	
	No	%	No	%
*Source of information about infectious disease and viral hepatitis:				
-family.	3	0.88	20	5.80
-through mass media	2	0.58	23	6.70
-friends.	0	0.00	15	4.40
-through the researcher.	0	0.00	139	41.00
- no answer	334	98.50	142	41.80

Table (2) shows distribution of children regarding their information gained about infectious diseases and viral hepatitis pre and post test. In pre test 98.5% didn't receive any information about viral hepatitis. After given instruction "in post test" 41% gained knowledge through the researcher, 5.8% through the family, 6.7% through the mass media, 4.4% through friends, and 41.8% had no answer.

Table (3): Distribution of children by their mean score level in pre and post tests regarding the concept of infectious process.

Items	Unsatisfactory<60%				Satisfactory≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
1- Concept of infectious disease.	304	89.6	98	29.0	35	10.4	241	71.0	0.28±0.6	1.7±0.9	29.05	<0.001
2- Definition of incubation period	339	100.0	149	44.0	0	0.0	190	56.0	0.015±0.27	3.11±1.9	29.99	<0.001
3- Presence of a different incubation period to each infectious disease.	179	52.8	23	6.7	160	47.2	316	93.3	1.18±1.25	2.33±0.6	16.29	<0.001
4- Definition of infected person.	335	98.8	54	15.9	4	1.2	285	84.1	0.08±0.6	4.19±1.7	42.04	<0.001
Total									1.56±1.8	11.33±3.9	46.12	<0.001

Table (3) shows that there is a very highly statistical significant difference between the mean score level in pre and post tests regarding the concept of infectious disease, define of incubation period, if each infectious disease has its own incubation period, and definition of infected person at P level (0.001).

Table (4): Distribution of children by their total score level in pre and post tests regarding the concept of infectious process.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
*Concept of infectious process.	337	99.4	78	23.0	2	0.6	261	77.0
	Z = 12.7 P<0.001				Z = 16 P <0.001			

Table (4) shows that there is a very highly statistical significant difference between percentage of pre and post total score level regarding the concept of infectious process at P level (0.001).

Table (5): Distribution of children by their mean score level in pre and post tests regarding the viral hepatitis.

Items	Unsatisfactory<60%				Satisfactory≥60%				Pre $\bar{X}$ ± SD	Post $\bar{X}$ ± SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
5- Knowledge of organ affected by viral hepatitis.	312	92.0	91	26.8	27	8.0	248	73.2	0.24±0.7	1.61±0.7	31.53	<0.001
6- Definition of viral hepatitis.	339	100.0	76	22.4	0	0.0	263	77.6	0.07±0.4	3.64±2.4	27.38	<0.001
7- Causes of viral hepatitis.	339	100.0	135	39.8	0	0.0	204	60.2	0.02±0.27	3.24±2.2	27.32	<0.001
8- Types viral hepatitis.	331	97.6	128	37.7	8	2.4	211	62.3	0.06±0.4	1.46±1.07	23.43	<0.001
Total									0.38±1.08	9.83±4.2	42.64	<0.001

Table (5) shows that there is a very highly statistical significant difference between the mean score level in pre and post tests regarding organ affected by the viral hepatitis, definition, causes, and types of viral hepatitis at P level (0.001).

Table (6): Distribution of children by their total score level in pre and post tests regarding the concept of liver, definition, causes, types of viral hepatitis.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
*Concept of liver, definition, causes, types of viral hepatitis.	339	100.0	104	30.7	0	0.0	235	69.3
	Z = 11.2 P<0.001				Z = 27.7 P <0.001			

Table (6) shows that there is a very highly statistical significant difference between percentage of pre and post total score level regarding the concept of liver, definition, causes, types of viral hepatitis at P level (0.001).

Table (7): Distribution of children by their mean score level in pre and post tests regarding the symptoms and signs of viral hepatitis.

Items	Unsatisfactory<60%				Satisfactory≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
9- Symptoms and signs of viral hepatitis A, B, C, D, E, and G.	339	100.0	87	25.6	0	0.0	252	74.4	0.02±2.8	2.72±1.5	33.14	<0.001
	Z=12.2 P< 0.001				Z=31.34 P<0.001							

Table (7) shows that there is a very highly statistical significant difference between the mean score level in pre test was (0.02±2.8) and the mean score level in post test was (2.72±1.5) at P level (0.001) regarding the signs and symptoms of viral hepatitis.

Table (8): Distribution of children by their mean score level in pre and post tests regarding hepatitis A.

Items	Unsatisfactory <60%				Satisfactory ≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
10- Modes of transmission of hepatitis A.	339	100.0	127	37.4	0	0.0	212	62.6	0.03±0.3	3.31±1.8	33.55	<0.001
11-Preventive measures of hepatitis A	339	100.0	195	57.5	0	0.0	144	42.5	0.03±0.3	2.25±1.4	29.19	<0.001
Total									0.06±0.6	5.56±2.9	34.92	<0.001

Table (8) shows primary school students' knowledge about hepatitis A. It revealed that there is a very highly statistical significant difference between the mean score level in pre test was (0.06±0.6) and in post test was (5.56±2.9) at P level (0.001).

Table (9): Distribution of children by their mean score level in pre and post tests regarding hepatitis B.

Items	Unsatisfactory <60%				Satisfactory ≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
12- Modes of transmission of hepatitis B.	339	100.0	132	38.9	0	0.0	207	61.1	0.02±0.27	3.02±1.7	32.49	<0.001
13-Preventive measures of hepatitis B	339	100.0	175	51.6	0	0.0	164	48.4	0.02±0.27	2.32±1.6	26.46	<0.001
Total									0.04±0.5	5.33±3.01	32.36	<0.001

Table (9) shows primary school student's knowledge about hepatitis B. It revealed that there is a very highly statistical significant difference between the mean score level in pre test was (0.04±0.5) and in post test was (5.33±3.01) at P level (0.001).

Table (10): Distribution of children by their mean score level in pre and post tests regarding hepatitis C.

Items	Unsatisfactory <60%				Satisfactory ≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
14- modes of transmission of hepatitis C.	339	100.0	126	37.1	0	0.0	213	62.9	0.02±0.27	2.95±1.99	27.11	<0.001
15-preventive measures of hepatitis C.	339	100.0	165	48.6	0	0.0	174	51.4	0.02±0.27	2.44±1.99	22.39	<0.001
Total									0.04±0.54	5.39±3.6	27.36	<0.001

Table (10) shows primary school students' knowledge about hepatitis C. It revealed that there is a very highly statistical significant difference in the mean score level in pre test (0.04±0.54) and in post test was (5.39±3.6) at P level (0.001)

Table (11): Distribution of children by their mean score level in pre and post tests regarding hepatitis D.

Items	Unsatisfactory <60%				Satisfactory ≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
16- Modes of transmission of hepatitis D.	339	100.0	245	72.2	0	0.0	94	27.8	0.02±0.27	1.7±1.8	17.18	<0.001
17-preventive measures of hepatitis D.	339	100.0	293	86.4	0	0.0	46	13.6	0.02±0.27	1.19±1.4	15.39	<0.001
Total									0.04±0.54	2.89±2.9	18.09	<0.001

Table (11) shows primary school students' knowledge about hepatitis D. It revealed that there is avery highly statistical significant difference between the mean score level in pre test (0.04±0.54) and in post test (2.89±2.9) at P level (0.001)

Table (12): Distribution of children by their mean score level in pre and post tests regarding hepatitis E.

Items	Unsatisfactory <60%				Satisfactory ≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
18- Modes of transmission of hepatitis E.	**339**	**100.0**	**234**	**69.0**	**0**	**0.0**	**105**	**31.0**	**0.02±0.27**	**1.93±2.1**	**16.74**	**<0.001**
19-preventive measures of hepatitis E.	**339**	**100.0**	**287**	**84.6**	**0**	**0.0**	**52**	**15.4**	**0.02±0.27**	**1.26±1.56**	**14.73**	**<0.001**
Total									**0.04±0.54**	**3.19±3.4**	**17.06**	**<0.001**

Table (12) shows primary school students' knowledge about hepatitis E. It revealed that there is a very highly statistical significant difference between the mean score level in pre test (0.04±0.54) and in post test (3.19±3.4) at P level (0.001).

Table (13): Distribution of children by their mean score level in pre and post tests regarding hepatitis G.

Items	Unsatisfactory <60%				Satisfactory ≥60%				Pre $\bar{X}$ ±SD	Post $\bar{X}$ ±SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
20- Modes of transmission of hepatitis G.	339	100.0	182	53.6	0	0.0	157	46.4	0.02±0.27	2.34±2.1	19.46	<0.001
21-preventive measures of hepatitis G.	339	100.0	206	60.7	0	0.0	133	39.3	0.02±0.27	1.96±2.06	17.42	<0.001
Total									0.04±0.54	4.3±3.9	20.11	<0.001

Table (13) shows primary school students' knowledge about hepatitis G. It revealed that there is a very highly statistical significant difference between the mean score level in pre test (0.04±0.54) and in post test (4.3±3.9) at P level (0.001).

Table (14): Distribution of children by their total score level in pre and post tests regarding the modes of transmission, and preventive measures of viral hepatitis.

Items	Unsatisfactory <60%				Satisfactory ≥60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
* Modes of transmission, and preventive measures of 1- hepatitis A.	339	100.0	156	46.1	0	0.0	183	53.9
	Z = 8.2 P <0.001				Z = 19.94 P <0.001			
2- hepatitis B.	339	100.0	161	47.5	0	0.0	178	52.5
	Z =7.96 P <0.001				Z = 19.36 P <0.001			
3- hepatitis C.	339	100.0	153	45.1	0	0.0	186	54.9
	Z =8.39 P <0.001				Z =20.3 P <0.001			
4- hepatitis D.	339	100.0	268	79.1	0	0.0	71	20.9
	Z =2.88 P <0.001				Z =9.48 P <0.001			
5- hepatitis E.	339	100.0	248	73.2	0	0.0	91	26.8
	Z =3.76 P <0.001				Z =11.15 P <0.001			
6- hepatitis G.	339	100.0	196	57.8	0	0.0	143	42.2
	Z =6.18 P <0.001				Z =15.73 P <0.001			

Table (14) shows that there is a very highly statistical significant difference between percentage of pre and post score level regarding the modes of transmission, and preventive measures of hepatitis A, B, C, D, E, and G at P level (0.001).

Table (15): Distribution of children by their mean score level in pre and post tests regarding the complications of viral hepatitis.

Items	Unsatisfactory<60%				Satisfactory≥60%				Pre $\bar{X}$ ± SD	Post $\bar{X}$ ± SD	Paird t	P
	Pre		Post		Pre		Post					
	No	%	No	%	No	%	No	%				
22- Complications of viral hepatitis.	339	100.0	204	60.1	0	0.0	135	39.9	0.02±0.27	1.97±1.9	19.94	<0.001
	Z= 5.79 P<0.001				Z= 14.98 P<0.001							

Table (15) shows that there is a very highly statistical significant difference between the mean score level in pre test (0.02±0.27) and in post test (1.97±1.9) at P level (0.001) regarding the complications of viral hepatitis.

Table (16): Distribution of children by their total score level in pre and post tests regarding the information about viral hepatitis.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
*Information about viral hepatitis .	339	100.0	193	56.9	0	0.0	146	43.1
	Z = 6.33 P<0.001				Z = 16.01 P <0.001			

Table (16) shows that there is a very highly statistical significant difference between percentage of total score in pre and post test regarding the students' total information about viral hepatitis.

Fig. Percentage of children's total score level in pre and post tests regarding the information about viral hepatitis.

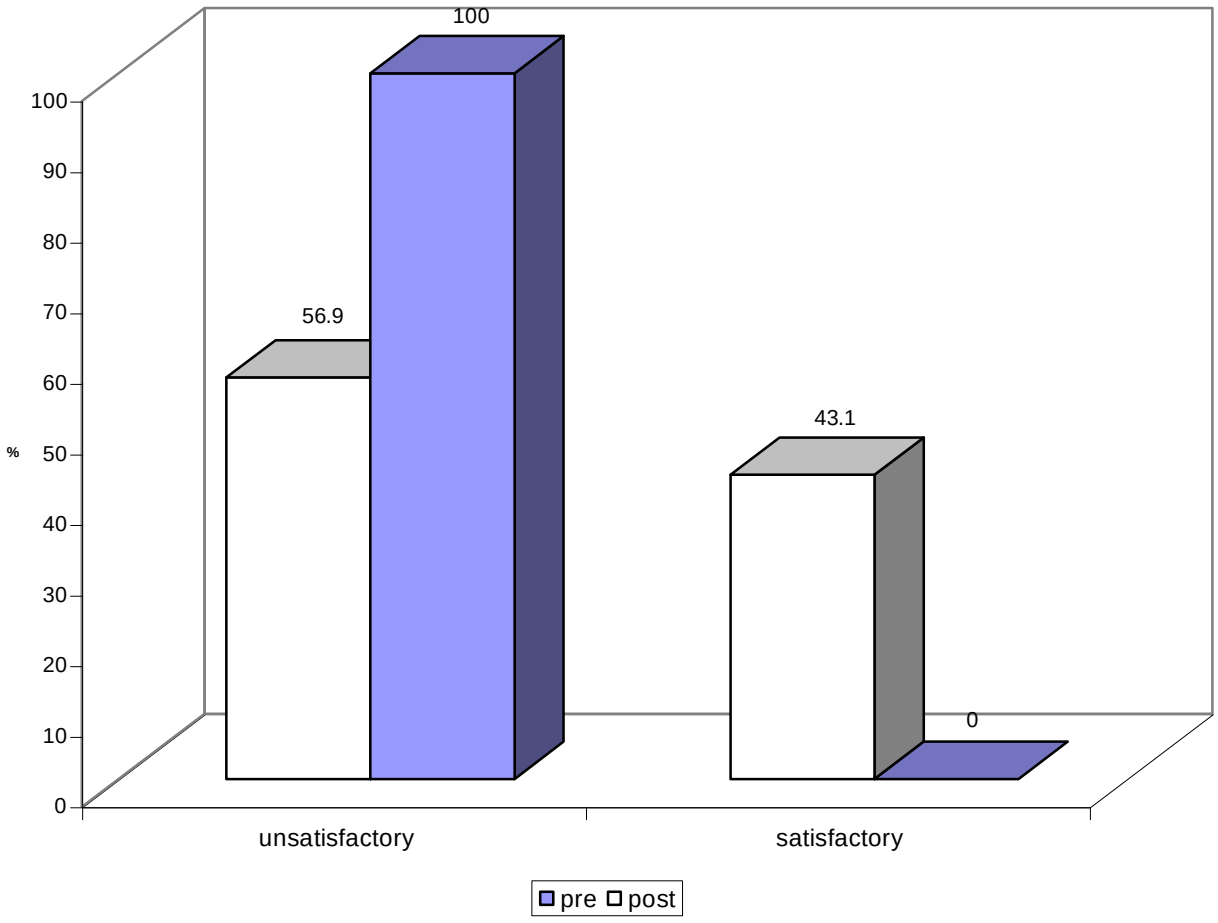

Table (17):Distribution of children by their total score level in pre and post tests regarding the difference in knowledge for 5th & 6th class about viral hepatitis and infectious disease.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
- 5th class (No: 97)	97	100.0	64	65.9	0	0.0	33	34.1
	Z =2.7 P<0.05				Z = 7.07 P <0.001			
-6th class (No: 242)	242	100.0	129	53.3	0	0.0	113	46.7
	Z =6.33 P<0.001				Z =14.56 P<0.001			

Table (17) shows students' knowledge of 5th class about viral hepatitis and infectious disease. It revealed that there is highly statistical significant difference between the percentage of pre and post score level at P level in pre test (0.05), in post test (0.001). It also showed that there is a very highly statistical significant difference between percentage of pre and post score level regarding the information about viral hepatitis and infectious disease of 6th class at P level (0.001).

Table (18):Distribution of children by their total score level in pre and post tests regarding the difference in knowledge between 5th & 6th class about viral hepatitis and infectious disease.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
- 5th class (No: 97)	97	100.0	64	65.9	0	0.0	33	34.1
-6th class(No: 242)	242	100.0	129	53.3	0	0.0	113	46.7
Z	—		1.4		—		1.61	
P	—		>0.05		—		<0.05	

Table (18) shows that there is no statistical significant difference in pre test for total score level between 5th & 6th class but in the post instruction, there is statistical significant difference between the two classes, 5th & 6th class, at P level (0.05).

Table (19): Distribution of children by their total score level in pre and post tests regarding the difference in knowledge between males & females about viral hepatitis and infectious disease.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
-Females (No: 187)	187	100.0	88	47.0	0	0.0	99	53.0
- Males (No:152)	152	100.0	105	69.0	0	0.0	47	31.0
Z	—		2.67		—		*3.07*	
P	—		<0.01		—		<0.01	

Table (19) shows that there is highly statistical significant difference between males and females in post score level regarding their knowledge about viral hepatitis & infectious disease at P level (0.01).

Table (20): Distribution of children by their total score level in pre post tests regarding the difference in knowledge between rural & urban area about viral hepatitis and infectious disease.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
-Rural area (N0: 142)	142	100.0	87	61.3	0	0.0	55	38.7
-Urban area (No: 197)	197	100.0	107	54.4	0	0.0	90	45.6
Z	—		5		—		2.48	
P	—		<0.001		—		<0.001	

Table (20) shows that there is a very highly statistical significant difference between rural and urban area in post score level regarding children's knowledge about viral hepatitis & infectious disease at P level (0.001).

Table (21): Distribution of children different age by their total score level in pre and post tests regarding their knowledge about viral hepatitis and infectious disease.

Items	Unsatisfactory <60%				Satisfactory≥ 60%			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
* Age in years								
10- (No:28)	28	100.0	22	78.5	0	0.0	6	21.5
11- (No:114)	114	100.0	61	53.5	0	0.0	53	46.5
12- (No:178)	178	100.0	97	54.4	0	0.0	81	45.6
13-14 (No:19)	19	100.0	13	68.4	0	0.0	6	31.6
	Chi-square = 1.82 P< 0.05							

Table (21) shows that there is statistical significant difference between different age group of school children in post score level regarding their knowledge about viral hepatitis & infectious disease as the age of 11:13 years have the highest score at P level (0.05).