RESULTS

Results are presented in the following sequence **:**

Part I: Socio demographic characteristics of study sample, Age in years, Marital status, education, residence, experience and attending course about HCV table (1).

Part II: comparison between nurses at Benha University hospital & general hospitals regarding socio demographic data table (2).

Part III: Nurses according to their level of nurses knowledge about virus C , Definition, mode of transmission, manifestation, incubation period, investigation, complication about HCV table (1- 14).

Part IV: Nurses according to their level of practice about infection control, nurses regarding to their level of attitude toward infection control measures table (15- 18).

Part V: Comparison between studied nurses attitude & their attending course about HCV, Comparison between level of nurses knowledge and their level of attitude regarding infection control measures table (19-20).

Part VI: Comparison between level of nurses practice and their attitude, Comparison between level of nurses practice and their level of knowledge about HCV, Comparison between level of nurses practice and their attending course about HCV table (21-23).

Table(1): Socio demographic data of study nurses

Socio– demographic Data	N = 56	
	No	%
Age in years (mean ± SD)	33.19 ± 11.16	
Marital status:		
- Single	14	25
- Married	32	57.1
- Divorced	7	12.5
- Widow	3	5.4
Education:		
BSC	5	8.9
- Nursing institute	3	5.4
- Diploma with specialty	14	25
- Nursing Diplom	34	60.7
Residence:		
- Rural	29	51.8
- Urban	27	48.2
Occupation:		
- Head nurse	8	14.3
- Supervisor	7	12.5
- Nurse	41	73.2
Experience (mean ± SD)	14.23 ± 10.02	
Attending course about HCV		
- Yes	11	19.6
- No	45	80.4

This table shows that more than half (57%) of studied nurses were married, more than half (60.7%) had diplom. More than half (51.8%) lived in rural area,. Three quarters were nurses (73.2%) nurses and more than three quarters (80.4%) did not attendee a course about HCV.

Table(2): Comparison of socio-demorgaphic of nurses at Banha University hospital and educational hospital

N = 56						
Socio–demographic Data	**University nurses (n=25)**		**General H nurses (n=31)**		**X^2**	**p-value**
	No	**%**	**No**	**%**		
Age (mean ± SD)	34.7 ± 11.31		31.97 ± 11.06		0.83*	> 0.05
Marital status:						
- Single	9	36	5	16.1		
- Married	14	56	18	58.1	5.35	> 0.05
- Divorced	2	8	5	16.1		
- Widow	0	0	3	9.7		
Education:						
- BSC	5	20	0		6.81	< 0.001**
- Nursing institute	3	12	0		3.93	< 0.05*
- Diploma specialty	14	56	0		23.15	< 0.001**
- Nursing Diplom	3	12	31		44.93	< 0.001**
Residence:						
- Rural	10	40	19	61.3	2.51	> 0.05
- Urban	15	60	12	38.7		
Occupation						
- Head nurse	4	16	4	12.9	0.11	> 0.05
- Supervisor	6	24	1	3.2	5.46	< 0.05*
- Nurse	15	60	26	83.9	4.02	< 0.05*
- Experience (mean ± SD)	14.44±11.08		14.06±9.26		0.19*	> 0.05

* Significant change ** Highly significant

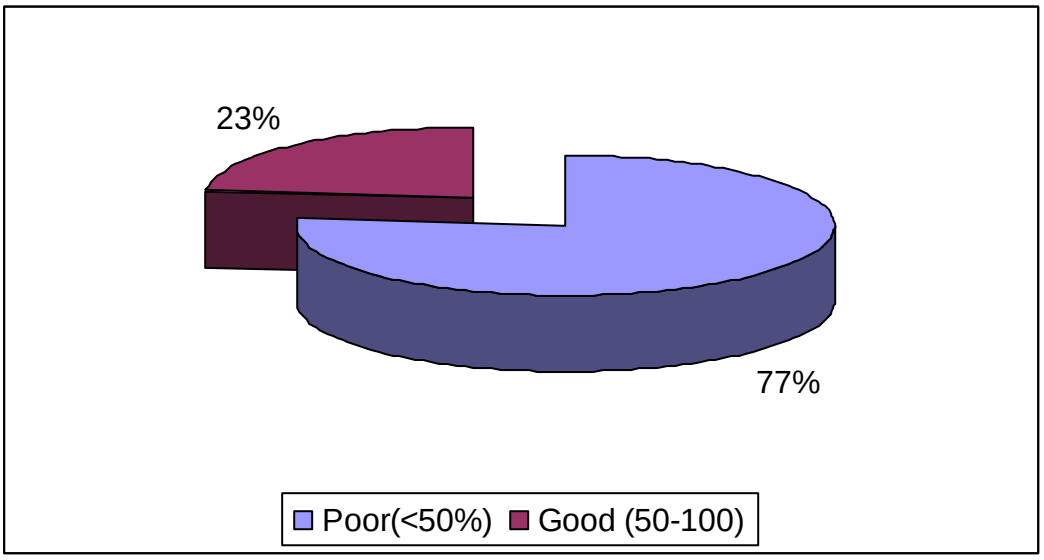
This table shows that the prevalence of nurses with nursing diplom at general hospital is significantly higher than university hospital. However, the percentage of unit supervisor at university hospital is significantly higher than general hospital ($p< 0.05$).

Table (3): Relation between level of nurses knowledge& their previous attendance of courses about HCV:

N = 56						
Attending course about HCV	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
- Yes (11)	2	4.7	9	69.2	26.37	< 0.001
- No (45)	41	95.3	4	30.8		

This table shows that the percentage of attending training courses about HCV is significantly higher among nurses with good Knowledge than those with poor Knowledge ($p < 0.001$).

Fig. (1): Nurses knowledge about HCV



Table(4): Nurse's Knowledge about HCV:

N = 56						
Knowledge about HCV	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
Definition of HCV						
- Liver disease	11	25.6	10	76.9	11.23	< 0.001**
- O esophageal disease	15	34.9	0	0	6.19	< 0.05*
- Liver disease due to alcohol	11	25.6	1	7.7	1.9	> 0.05
- Liver disease due to B	6	14	2	15.4	0.02	> 0.05
Types of Hepatitis						
- Virus A	10	23.3	0	0	3.68	> 0.05
- Virus B	7	16.3	0	0	2.42	> 0.05
- Virus C	15	34.9	0	0	6.19	< 0.05*
- Virus D	7	16.3	0	0	2.42	> 0.05
- All	4	9.3	13	100	38.84	< 0.05*

* Significant change ** Highly significant

Table(4): The percentage of nurses who define HCV as a liver disease is significantly higher among those with good knowledge than those with poor knowledge ($p< 0.001$) while the % of nurses who define HCV as an oesophaged disease is significantly higher among poor knowledge ($p< 0.05$).

The prevalence of nurses who know the 4common types hepatitis is significantly higher among good k nurses than poor k ($p< 0.001$).

Table (5): Studied nurses regarding mode of transmission of HCV

N = 56						
Knowledge about HCV	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
Source of infection:						
- Chronic Case	4	23.3	6	46.2	9.24	< 0.001**
- Carrier	15	30.2	6	46.2	0.54	> 0.05
- Early stage case	11	30.2	1	7.6	1.9	> 0.05
- Contact	13	16.3	0	0	56	< 0.001**
Vertical transmission occurs through all except						
- Trans placental	3	6.9	0	0	0.96	> 0.05
- Swallowing of amniotic fluid	11	25.6	1	7.7	1.9	> 0.05*
- Kissing	17	39.5	11	84.6	8.11	< 0.001**
- Lactating	12	27.9	1	7.7	2.29	> 0.05
Mode of trans mission of HCV:						
- BI.& BI. Products	8	18.6	0	0	2.82	> 0.05
- Sexual intercourse	8	18.6	0	0	2.82	> 0.05
- Tooth brush & shaving	7	16.3	0	0	2.42	> 0.05
- Vertical trans mission	5	11.6	0	0	1.66	> 0.05
- All	6	14	13	100	32.97	< 0.001**
- Droplet infection	4	9.3	0	0	1.3	> 0.05
- Handling	5	11.6	0	0	1.66	> 0.05

* Significant change ** Highly significant

The percentage of nurses who know that the source of infection is the chronic case is significantly higher among good knowledge than those with poor knowledge ($p< 0.001$). However, the percentage of nurses who said that contact is the main source of infection is significantly higher among poor k nurses than those with good k ($p< 0.001$).

The percentage of nurses who said that kissing is the way by which vertical transmission does not occur is significantly higher among good k nurses than poor k ($p< 0.001$).

Table (6): Studied nurses regarding incubation period of HCV

N = 56						
Incubation period of HCV	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
- I.P. 5 – 15 day	18	41.8	0	0	8.02	< 0.001**
- 1 – 3 w	13	30.2	0	0	5.12	< 0.05*
- 6 – 12 w	7	16.3	2	15.4	0.01	> 0.05
- 12 – 14 w	5	11.6	11	84.6	26.06	< 0.001**

* Significant change ** Highly significant

This table shows that nurses who know that I.P of HCV is from 12–14W is significantly higher among good k nurses than poor k (p< 0.001).

Table(7): Studied nurses regarding manifestations of HCV:

N = 56						
Manifestations	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
Carrier of HCV can transmit infection via:						
- Urine	8	18.6	0	0	2.82	> 0.05
- Blood	6	14	13	100	32.97	< 0.001**
- Stool	10	23.3	0	0	3.68	> 0.05
- Saliva	3	7	0	0	0.96	> 0.05
- Semen	14	32.6	13	100	18.18	< 0.001**
Signs of HCV carrier						
- Looks normal	7	16.3	0	0	2.42	> 0.05
- Discovered accidentally	17	39.5	0	0	7.38	< 0.001**
- Can transmitte infection	12	27.9	0	0	4.62	< 0.05*
- All	7	16.3	13	100	30.47	< 0.001**
Manifestations	8	18.6	2	15.4	0.07	> 0.05
- Nausea & Abd. Pain	4	9.3	2	15.4	0.39	> 0.05
- Temperature + Jamdice	10	23.3	11	84.6	16.04	< 0.001**
- Hepato-splenomegaly	9	20.9	10	76.9	13.96	< 0.001**
- Dark urine	7	16.3	13	100	30.47	< 0.001**
- Ascites & oedoma LL	8	18.6	12	92.3	23.62	< 0.001**
- Edema of LL	5	11.6	0	0	1.66	> 0.05
- No manifestations	5	11.6	13	100	35.74	< 0.001**

* Significant change ** Highly significant

This table shows that regarding manifestations of HCV the prevailed of high temperature & Jaundice, hepato splenomegally, dark urine, ascites & having no manifestations is significantly higher among nurses with good k. than with poor k. ($p< 0.05$).

This table shows that Regarding signs of HCV carries the prevalence of nurses who know that he looks normal, discover accidentally & can transmitted infection is significantly higher among nurses with good k. than those with poor k.($p< 0.001$) & Regarding transmission of infection by the carrier via blood & semen it is significantly higher among nurses with good k than those with poor k ($p< 0.001$).

Table(8): Studied nurses regarding Health care workers exposure to health care workers :

N = 56						
health care workers exposure to HCV	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
Dental clinic	8	18.6	0	0	2.82	> 0.05
Haemodialysis	9	20.9	0	0	3.24	> 0.05
Laboratory	6	14	0	0	2.03	> 0.05
Anaesthesia	6	14	0	0	2.03	> 0.05
Surgery	13	30.2	0	0	5.12	< 0.05*
All	1	2.3	13	100	50.79	< 0.001*

* Significant change ** Highly significant

This table shows that the prevalence of all ways for exposure of HCW to HCV is significantly higher among nurses with good knowledge than those with poor knowledge ($p< 0.001$). However, surgery is significantly more frequent among poor knowledge nurses than those with good knowledge ($p< 0.05$).

Table(9): Studied nurses knowledge regarding investigations for HCV case:

N= 56						
Investigations	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
PCR	5	11.6	0	0	1.66	> 0.05
Abdominal ultra sound	19	44.1	0	0	8.69	< 0.001**
Skin test ?!	11	25.58	0	0	4.14	< 0.05*
All	8	18.6	13	100%	28.22	< 0.001**

* Significant change ** Highly significant

This table shows that the percentage of nurses who report that PCR, abdominal ultrasound & skin test are the investigations for HCV cases is significantly higher among good k nurses than those with poor k (P< 0.001).

Table (10): Studied nurse's knowledge regarding instruction towards infection control with Wastes and blood.

N= 56						
Wastes and blood	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
Stool & urine	10	23.2	0	0	3.68	> 0.05
Blood	7	16.2	0	0	2.42	> 0.05
Semen	3	69.7	0	0	0.96	> 0.05
Vomitus	10	23.2	0	0	3.68	> 0.05
Amniotic fluid	3	69.7	0	0	0.96	> 0.05
All	10	23.2	13	100	24.29	< 0.001**

* Significant change ** Highly significant

This table reveals that regarding instruction taken towards infection control of patient fluid, the percentage of all patient fluid is significantly higher among nurses with good k than those with poor k (P< 0.001).

Table(11): Nurses regarding health habits to deal with HCV patient's Wastes and blood :

N = 56						
health habits to deal with patients Wastes and blood	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
- Hand washing	9	20.9	0	0	3.24	> 0.05
- Wear gloves	13	30.2	0	0	5.12	< 0.05*
- Wear mask	8	18.6	0	0	2.82	> 0.05
- Wear gown	3	7	0	0	0.96	> 0.05
- Vaccination	5	11.6	0	0	1.66	> 0.05
- All	5	11.6	13	100	35.74	< 0.001**
Hand washing can kill:						
- No microbes	3	7	0	0	0.96	> 0.05
- 70% of microbes	17	39.5	11	84.6	8.11	< 0.001
- Cleaning only	5	11.6	0	0	1.66	> 0.05*
- All microbes	18	41.9	2	15.4	3.05	> 0.05
If nurse is HCV case she must wear gloves for all except						
- During wound care	11	25.6	0	0	4.14	< 0.05*
- Exposure to patient mucous membrane	13	30.2	0	0	5.12	< 0.05*
- During feeding of patient	3	7	12	92.3	37.06	< 0.001**
- During injections	16	37.2			4.11	< 0.05*

* Significant change ** Highly significant

This table shows that the percentage of nurses who know that all instructions must be taken to deal with patient discharge & that hand washing can kill only 70% of microbes is significantly higher among nurses with good k than those with poor k (P< 0.001).

Table (12): Studied nurses knowledge regarding complications of HCV:

N - 56						
complications of HCV except	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
Chronic case	11	25.6	0	0	4.14	< 0.05*
Liver cirrhosis	9	20.9	0	0	3.24	> 0.05
Hepato cellular carcinoma	10	23.3	0	0	3.68	> 0.05
All	1	2.3	0	0	0.31	> 0.05
Cholecystitis	12	27.9	13	100	20.99	< 0.001**

* Significant change ** Highly significant

This table shows that the complication of HCV on all except choleecystitis is significantly more frequent among good k nurses than those with poor k (P< 0.001).

Table(13): Studied nurses knowledge regarding re–sterilization of operative instruments if not used:

N = 56						
Re-sterilization with in	**Poor K(n=43)**		**Good K(n=13)**		**X2**	**p-value**
	No	**%**	**No**	**%**		
8 hours	7	16.3	0	0	2.42	> 0.05
24 hours	11	25.6	11	84.6	14.58	< 0.001**
72 hours	7	16.3	2	15.4	0.01	> 0.05
One week	18	41.9	0	0	8.02	< 0.001**

* Significant change ** Highly significant

This table shows that nurses who know that re-sterilization of operative instrument if not used must be done with in 24h is significantly higher among good k nurses than poor k. (P< 0.001) However, the % of nurses who chose within one week is significantly higher among poor knowledge nurses than good k ones (P< 0.001).

Fig. (2): Level nurses practice about infection control

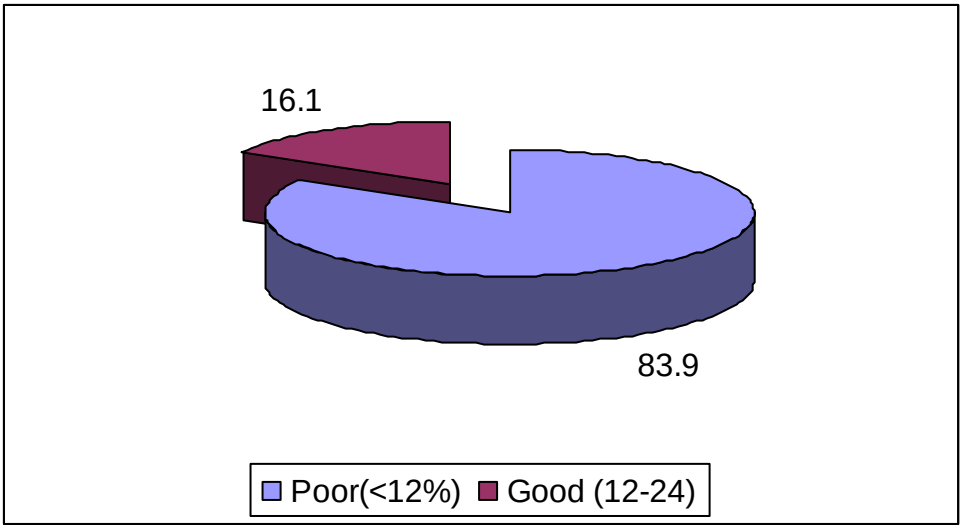


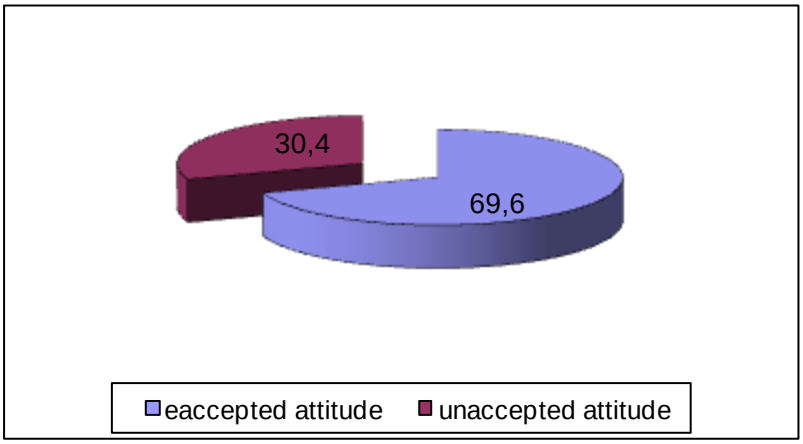
Table (14): Studied nurses knowledge regarding their practice to infection control:

Nurse's practice	N = 56				X2	p-value
	Not done (n=47)		Done (n=9)			
	No	%	No	%		
Hand washing	40	85.1	9	100	11.62	< 0.001**
Gowning	33	70.21	7	77.77	20.3	< 0.001**
Gloving	30	63.8	6	66.66	19.4	< 0.001**
Masking	41	87.23	6	66.66	3.71	> 0.05
Eyewear, face shield	37	78.7	9	100	1.22	> 0.05
Vein puncture	42	89.36	7	77.77	0.0	> 0.05
Intramuscular injection	23	48.93	6	66.66	1.41	> 0.05
Recapping of needles	20	42.55	5	55.55	0.1	> 0.05
Disposal of needles & sharp instruments	30	63.8	7	77.77	1.22	> 0.05
Perineal care	43	91.48	8	88.88	1.67	> 0.05
Vaginal examination	40	85.1	9	100	2.82	> 0.05
Preparing and maintaining sterile field	23	48.93	7	77.77	2.39	> 0.05
Decontaminatitm	30	63.8	6	66.66	1.41	> 0.05
Cleaning	37	78.7	8	88.88	1.67	> 0.05
Sterilization by autoclave	33	70.21	7	77.77	2.39	> 0.05

* Significant change ** Highly significant

This table show that the percentage of nurses with poor practice regards infection control is significantly higher among nurses with good practice than those with poor practice (P< 0.001).

Fig. (3): Nurses attitude towered infection control measures



This figure shows that the majority of nurses attitude regarding infection control was unaccepted attitude the rate is higher (69%) than those with accepted attitude (30.4%).

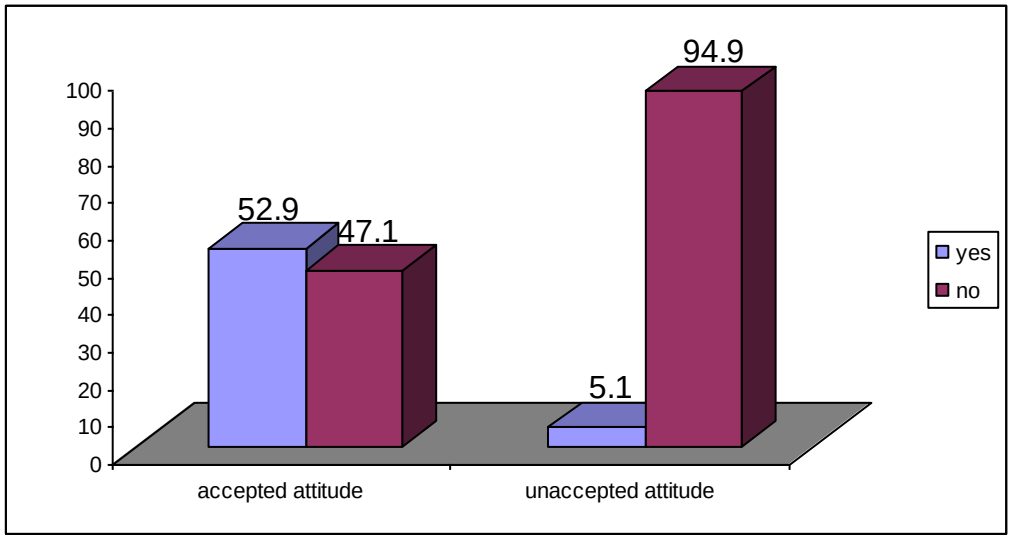
Table (15): Studied nurses knowledge regarding likert scale

Nurse's attitude	N = 56				X2	p-value
	Poor K(n=39)		Good K(n=17)			
	No	%	No	%		
Hand washing before & after contact with direct secretion	31	79.48	11	74.7	3.43	> 0.05
Dealing with any blood sample in spite of it is contaminated	23	58.97	16	94.1	1.24	> 0.05
Wearing gloves	33	84.61	17	100	1.31	> 0.05
Wearing one glove for more than one delivery	23	58.97	13	76.47	6.84	< 0.001**
Skin disinfection with alcohol	37	94.87	15	88.23	10.34	< 0.001**
Wearing mask & gown during normal labor	23	58.97	11	74.7	12.17	< 0.001**
The nurse assist in two case of labor at the same time	33	84.61	16	94.1	12.21	< 0.001**
Special container for needles & sharp	35	89.74	17	100	12.12	< 0.001**
Wearing eye wear & face shield	39	100	13	76.47	8.74	< 0.001**
Change suction catheter between baby & another	22	56.41	15	88.23	18/.38	< 0.001**
Use glove in washing instruments	11	28.2	13	76.47	6.45	> 0.05
Discuss infection control with head nurse	23	58.97	11	74.7	3.62	> 0.05**
HCV transmission via blood & semen	33	84.61	16	94.1	5.6	< 0.05
Increase number of personnel at labor unit cause infection	35	89.74	16	94.1	0.08	> 0.05
Instruments source of infection	33	84.61	13	76.47	5.24	< 0.05**
Infection during labor causes post partum infection	17	43.58	11	74.7	2.11	> 0.05

* Significant change ** Highly significant

This table shows that the majority of nurses had unaccepted attitude regarding infection control significantly higher among nurses with unaccepted attitude than those with accepted attitude (P< 0.001).

Fig. (4): Comparison between studied nurses attitude & their attending course about HCV



This figure illustrates that there is a strong positive correlation between level of nurses attitude & their attending course about HCV also it's clears that the rate of poor attitude was higher among nurses with did not attend HCV course.

Table (16): Co relation between level of nurses knowledge and their level of attitude regarding HCV.

Nurses Knowledge	Nurse Attitude				Total No	test
	-ve		+ve			
• Poor	35	897	8	471	43	0.85
• Good	4	10.3	9	52.9	13	
Total	39		17		56	

This table shows that there is a significant strong positive association between decrease the nurses level of knowledge and their negative attitude regarding HCV.

Table (17): Co relation between level of nurses practice and their attitude.

Nurses practice	Nurse Attitude				Total No	test
	-ve		+ve			
• Poor practice	37	94.9	6	35.3	47	0.96
• Good practice	2	5.1	11	64.7	9	
Total	39		17		56	

This table illustrates that, there is a significant strange positive association between nurses practice and their attitude (r=0.96). This result means that nurse who have negative attitude, have. Poor practi

Table (18): Relation Between level of nurse's practice and their attending course about HCV.

Attending course about HCV	Level of nurses practice				Total No	test
	Poor		Good			
• Yes	4	8.5	7	77.8	11	0.97
• No	43	91.5	2	22.2	45	P<0.05
Total	47		9		56	

This table illustrates that there is a strong positive correlation between level of nurses practice and their attending course about HCV also its clears that the rate of poor practice was higher among nurses who did not attend HCV course.

Table (19): Relation Between level of nurse's practice and their attending course about HCV.

Attending course about HCV	Level of nurses practice				Total No	test
	Poor		Good			
• Yes	4	8.5	7	77.8	11	0.97
• No	43	91.5	2	22.2	45	P<0.05
Total	47		9		56	

This table ittustrates that there is a strong positive correlation between level of nurses practice and their attending course about HCV also its clears that the rate of poor practice was higher among nurses who did not attend HCV course.