RESULTS

PRESENTATION AND ANALYSIS OF DATA

Findings of this study will be presented in 2 different sections.

Section (I): deals with description of the study subjects on sociodemographic variables. **(Table 1).**

Section (II): deals with findings related to stated research questions the first question states, what do the health team know about infection control? **(Table 2, 3, 4,5).**

The second question states, what do the health team do to control spread of infection? **(Table 6-27).**

The third question states, what are the different obstacles that affect the implementation of infection control measures in ICU? **(Table 28).**

The fourth question states, what are the suggested measures to over come such obstacles? **(Figure 1)**

Section (I)

Table (1): Distribution of the study groups subjects according to age, marital status, category of job, years of experience, education and previous training.

Frequency / Socio demographic data	No n = 52	Percentage % 100.0
Aging groups:		
20-25 years	2	3.8
25 – 35 years	47	90.4
36 – 47 years	3	5.8
$\overline{X}$ = 29.2308± 4.30055 SD		
Marital status:		
Single	12	23.1
married	40	76.9
Job		
Physicians	6	11.5
Nurses	29	55.8
Nursing supervisors	11	21.2
Auxiliary workers	6	11.5
Experience:		
< 5 years	12	23.1
5 – 10 years	22	42.3
11 – 14 years	18	34.6
$\overline{X}$ 8.1923 ± 3.72048 SD		
Education:		
Secondary school of nursing	27	52. 0
Technical school of nursing	2	3.8
Bachelor of medicine degree	6	11.5
Bachelor of nursing	11	21.2
Secondary school	1	1.9
Illiteracy	5	9.6
* **Previous training:**		
Yes	7	13.5
No	45	86. 5

Table (1): Illustrates that majority of studied subjects (76.9%) were married. Majority of nurses (52%), have secondary school education, and their ages ranged between (25-35) years old with a mean = (29.2308±4.30055 SD). As well the highest percentage (42.3%) their years of experience were between (5-10) years with A mean= (8.1923±3.72048 SD), and (86.5%) not received any previous training

Section (II)

Table (2): Total and subtotal Mean knowledge scores of physicians about infection control measures.

Items	Physicians n = 6		
	$\overline{X}$	±	SD
Basic knowledge about infection	19.333	±	.51640
Personal hygiene	1.833	±	.40825
Protective clothes	1.833	±	.40825
Cleaning and disinfection	5.833	±	.40825
Waste disposal	1.833	±	.40825
Notification & isolation	2.833	±	.40825
Specific measures	13.833	±	.40825
Total knowledge	51.833	±	2.562

Table (2): illustrate the highest mean score was 19.333 ±.5164 in basic knowledge about infection and the lowest mean was 1.8333 ± .40825 in Protective clothes among physicians.

Table (3): Total and subtotal mean knowledge scores of nursing supervisors about infection control measures.

Items	nursing supervisors n = 11		
	$\overline{X}$	±	SD
Basic knowledge about infection	10.000	±	.6324
Personal hygiene	1.9091	±	.30151
Protective clothes	.9091	±	.3015
Environmental cleaning	9.9091	±	.30151
Notification & isolation	1.9091	±	.30151
- polices and supplies	3.8182	±	.40452
Total knowledge	31.2727	±	3.635

Table (3) : illustrates that the highest mean score was 10.0000 ±.6324 in basic knowledge about infection and the lowest mean score was .9091± .3015 in Protective clothes among nursing supervisor.

Table (4): Total and subtotal mean knowledge scores of nurses about infection control measures.

Items	Nurses n=29		
	$\overline{X}$	±	SD
Basic knowledge about infection	17.9310	±	1.03272
Personal hygiene	1.9310	±	.25788
Protective clothes	1.9655	±	.18570
Cleaning and disinfection	5.8966	±	.30993
Waste disposal	2.9655	±	.18570
Notification & isolation	2.9655	±	.18750
Specific measures	13.9655	±	.18570
Total knowledge	52.0690	±	2.18650

Table (4): illustrate the highest mean score was17.9310 ± 1.03272 in basic knowledge about infection and the lowest mean score was 1.9655 ± .18570 in Protective clothes among nurses.

Table (5): Total and subtotal mean knowledge scores of auxiliary workers about infection control measures.

Items	Auxiliary worker. n = 6		
	$\overline{X}$	±	SD
Basic knowledge about infection	3.6667	±	1.21106
Personal hygiene	1.6667	±	.51640
Protective clothes	1.333	±	.51640
waste disposal	1.5000	±	.54772
Environmental cleaning	6.5000	±	.54772
clean and Solid linen	.8333	±	.40825
Total knowledge	15.000	±	2.000

Table (5): illustrate the highest mean score was 6.5000± .54772 in environmental cleaning and the lowest mean .8333± .40825 clean and Solid linen among auxiliary workers.

Table (6): Correlation coefficient between education, knowledge, practices, and marital status of nurses.

r-p value variable	Nurses n = 29 r	 P
***Education** - knowledge	-.118	>0.05
***Education** - practices	-.754**	<0.01
***Practice** -marital status	-.754**	<0.01
***Marital status** - knowledge	- . 118	>0.05

Table (6): illustrates that negative correlation between practices and marital status among nurses r = (-.754), p <0.01 as well as between education and practices r = (-.754) , (p <0.01)**.**

Table (7): Total and subtotal mean practices scores of physicians about infection control measures.

Items	Physicians n = 6		
	$\bar{X}$	±	**SD**
Hand washing	3.333	±	.81650
Personal hygiene	7.000	±	3 .28634
Protective clothes	2.6667	±	.51640
Cleaning and disinfection	5.333	±	.51640
Notification and isolation	1.9091	±	.30151
Control of respiratory tract infection	8.833	±	.40825
Control of urinary tract infection	12.833	±	.40825
Control of intravascular device infection	9.833	±	.40825
Total practices	51.1667	±	9.51665

Table (7): illustrates that the mean total &subtotal practices scores physicians about infection control measures was high12.833 ± .40825 in control of urinary tract infection and the lower 1.9091 ± .30151in Notification &isolation

Table (8): Total and subtotal mean practices scores of nurses about infection control measures.

Items	Nurses n = 29		
	±		SD $\overline{X}$
- Hand washing	3.8966	±	.55709
-Protective clothes	4.000	±	.26726
-Personal hygiene	6.3103	±	1.03866
- Handling needle	1.10434	±	.40925
- Cleaning &disinfection	5.8966	±	.40925
-Sterilization	2.9310	±	25788
-Aseptic technique	6.2414	±	.68727
-Disposing clinical waste	6.8966	±	.40925
-Notification &isolation	1.9655	±	.18570
- Specimen collection	7.8621	±	.58089
- respiratory tract infection	8.3445	±	.18570
- Endo tracheal suction	9.4828	±	.54967
- Medication &fluid	5.966	±	.40952
- urinary tract infection	13.5862	±	1.50041
- intravascular device	9.6552	±	.48373
Total practices	85.8276	±	3.37077

Table (8) illustrates that the highest mean score was 13.5862 ± 1.50041 in urinary tract infection and the lowest mean score was 1.10434 ±.40925in handling needle among nurses.

Table (9): Total and subtotal mean practices scores of nursing supervisors about infection control measures.

Items	Nursing supervisors N = 11		
	$\bar{X}$	± SD	
Hand washing	4.2727	±	.46710
Protective clothes	3.7273	±	.90453
Personal hygiene	2.7273	±	.90453
Environmental cleaning	9.2727	±	1.00905
Polices &supplies	11.2727	±	.46710
Notification& isolation	1.6364	±	.30452
Total practices	35.0909	±	1.81409

Table (9): illustrates that the highest mean score was 4.2727± .46710 in hand washing and the lowest was .30452±1.6364 in Notification& isolation among nursing supervisors.

Table (10) Total and subtotal mean practices scores of auxiliary workers about infection control measures.

Items	**auxiliary workers. n = 6**	
	± **SD** $\overline{X}$	
- hand washing	2.333	.51640
- Protective clothes	5.333	.51640
- personal hygiene	4.833	.75277
- waste disposal	6.5000	1.22474
-Environmental cleaning	13.000	.89443
- clean and Solid linen	5.6667	1.03280
Total practices	35.1667	1.94079

Table (10) illustrates that the highest mean score was 13.000± .89443 in environmental cleaning and the lowest was 2.333 ± .51640 in hand washing among auxiliary worker .

Table (11):correlation coefficient between age &subtotal practice scores about infection control measures among auxiliary workers

Items	auxiliary workerS n = 6	
	r	P
Hand washing	.824 *	< 0.05
Protective clothes	.824 *	< 0.05
Personal hygiene	.677	> 0.05
Deposing clinical waste	-.188	> 0.05
Environmental cleaning	-.188	>0.05
Clean linen	.423	>0.05
soiled linen	-.155	>0.05

Table (11) illustrate a positive correlation between age and hand washing(r = .824 , p <0.05) , and positive correlation was found between age and wearing protective clothes(r = .824 , p <0.05) among auxiliary workers .

Table (12) Correlation coefficient between years of experience &subtotal practice scores about infection control measures among auxiliary workers .

Items	auxiliary workers n = 6	
	r	P
-Hand washing	.824 *	< 0.05
-Protective clothes	.824 *	< 0.05
-Personal hygiene	.659	> 0.05
-Deposing clinical waste	-.058	> 0.05
-Environmental cleaning	-.211	>0.05
- Clean linen	.405	> 0.05
-Soiled linen	-.155	> 0.05

Table (12) illustrates a positive correlation between years of experience and hand washing(r = .824 , p <0.05) as well as between years of experience and wearing protective clothes(r = .824 , p <0.05) among auxiliary workers .

Table(13) correlation coefficient between age and subtotal practice scores about infection control measures among nursing supervisors.

Items	nursing supervisors n = 11	
	r	P
- Hand washing	.216	>0.05
-Protective clothes	.036	>0.05
-Personal hygiene	-.383	>0.05
-Environmental cleaning	-.164	>0.05
-Polices &supplies	-.164	>0.05
-Notification& isolation	-.032	>0.05

Table (13) showed no correlation between age and subtotal practice scores among nursing supervisors

Table(14) correlation coefficient between years of experience and subtotal practice about infection control measures among nursing supervisors.

Items **years of experience with subtotal practice**	**nursing supervisors** **n = 11**	
	r	**p**
-Hand washing	.216	>0.05
-Protective clothes	.036	>0.05
-Personal hygiene	-.383	>0.05
-Environmental cleaning	.164	>0.05
-Polices &supplies	-.164	>0.05
-Notification& isolation	-.032	>0.05

Table (14) showed no correlation between year of experience and subtotal practice scores among nursing supervisors

Table (15): correlation between age, knowledge, practices of infection control measures, and experience among physicians.

Variable	Physicians n= 6	
	r	P
- Age with Practices	.393	> 0.05
-Age with Knowledge	-.554	> 0.05
- Age with Experience	.870*	< 0.05
-Knowledge with Practices	-.581	> 0.05
-Experience with Practices	.738	> 0.05
- Experience with Knowledge	-.828**	< 0.05

Table (15) Shows that positive correlation between age and experience (r= .870 , p<0.05) negative correlation between experience and knowledge (r = -.828 . p < 0.05) among physicians .

Table (16): Correlation between age , knowledge , practices of infection control measures , experience among nursing supervisors**.**

Variable	**Nursing supervisors n = 11**	
	r	**P**
Age with Practices	-.242	> 0.05
Age with Knowledge	.223	>0.05
Age with Experience	1.000**	< 0.01
Knowledge with Practices	-.034	>0.05
Experience with Practices	-.242	>0.05
Experience with knowledge	.223	>0.05

Table (16)illustrates that positive correlation between age and experience (r= 1.000, p<0.01) the relation between age and practice of infection control measures , age and knowledge, knowledge & practice, experience & practice and experience & knowledge are statistically not significant among nursing supervisors .

Table (17):Correlation between age, knowledge, practices, about infection control measures experience among nurses.

Variable	Nurses n= 29	
	r	**P**
Age with Practices	-.669**	< 0.01
Age with Knowledge	-.279	>0.05
Age with Experience	.982**	< 0.01
Knowledge with Practices	.2000	>0.05
Experience with Practices	-.740**	<0.01
Experience with Knowledge	-.306	>0.05

Table (17)illustrates that negative correlation between age & practice about infection control measures s(r= -.669 , p< 0.01), positive correlation between , age& experience(r =.982 , p<0.01), and negative correlation between experience and practices (r = -.740 , p <0.01) among nurses.

Table (18): Correlation between age , knowledge , practices , about infection control measures and experience among auxiliary workers .

Variable	Auxiliary workers n = 6	
	r	**P**
- **Age with** Practices	.532	>0.05
- Age with Knowledge	.566	>0.05
- Age with Experience	.993**	<0.01
- Knowledge with Practices	.412	>0.05
- Experience with Practices	.499	>0.05
Experience with Knowledge	.473	>0.05

Table (18)illustrate positive correlation between age and experience(r= .993 , p< 0.01) among auxiliary workers.

Table (19) The relation between knowledge about infection control measures and level of the respondents among (physician , nursing supervisor, nurses and auxiliary worker) .

Groups	Unsatisfactory < 60%		Satisfactory 60% to 80%		Good > 80 %	
	N	%	N	%	N	%
Physicians n = 6	-	-	1	16.7	5	83.3
Nursing Supervisors n =11	1	9.1	1	9.1	9	81.8
Nurses n =29	1	3.4	1	3.4	27	93.2
Auxiliary workers n =6	4	66.7	-	-	2	33.3

Table (19)illustrate the majority (93.2) % among nurses were have good level of responding and (83. 3)% among physicians were good level of knowledge about infection control measures responding and (81 . 8) % of nursing supervisors.

Table (20) Correlation coefficient between age and subtotal knowledge about infection control measures among auxiliary workers.

Items **age and subtotal knowledge**	**auxiliary workers** **N = 6**	
	r	p
Basic knowledge about infection	.404	>0.05
Personal hygiene	-.462	>0.05
Protective clothes	-.264	>0.05
Environmental cleaning	-.594	>0.05
Waste disposal	.286	>0.05
Clean linen	-.264	>0.05
Solid linen	.155	>0.05

Table (20) showed no correlation between age and subtotal knowledge about infection control measures among auxiliary workers.

Table (21) Correlation coefficient between experience and subtotal knowledge about infection control measures among auxiliary workers.

Items **experience and subtotal knowledge**	**auxiliary workers n = 6** **r**	**p**
Basic knowledge about infection	.312	>0.05
Personal hygiene	-.405	>0.05
Protective clothes	-.366	>0.05
Environmental cleaning	-.647	>0.05
Waste disposal	.302	>0.05
Clean linen	-.366	>0.05
Solid linen	.183	>0.05

Table (21) showed no correlation between experience and subtotal knowledge about infection control measures among auxiliary workers.

Table (22) Correlation coefficient between age and subtotal knowledge about infection control measures among nursing supervisors

Items	**nursing supervisors n = 11**	
age and subtotal knowledge	**r**	**p**
Basic knowledge about infection	-.070	>0.05
Personal hygiene	.134	>0.05
Protective clothes	-.160	>0.05
Environmental cleaning	-.601	>0.05
Notification isolation	-.013	>0.05
Polices &supplies	.090	>0.05

Table (22) showed no correlation between age and subtotal knowledge about infection control measures among nursing supervisors.

Table (23) Correlation between years of experience &subtotal knowledge about infection control measures among nursing supervisors.

Items **years of experience &subtotal knowledge**	**nursing supervisors n = 11**	
	r	**p**
Basic knowledge about infection	-.070	>0.05
Personal hygiene	.134	>0.05
Protective clothes	-.160	>0.05
Environmental cleaning	-.601	>0.05
Waste disposal	-.013	>0.05
Policies &supplies	.090	>0.05

Table (23) showed no correlation between years of experience and subtotal knowledge about infection control measures among nursing supervisor.

Table(24) Correlation coefficient between years of experience and subtotal of practice about infection control measures among nurses and physicians.

Items years of experience and subtotal of practice	Nurses **n =29**		**Physicians n = 6**	
	r	p	r	p
Hand washing	.316	>0.05	.264	>0.05
Protective clothes	.082	>0.05	.000	>0.05
Personal hygiene	.189	>0.05	.375*	<0.05
Handling needle	-.108	>0.05	-.203	>0.05
Cleaning &disinfection	.108-	>0.05	.047	>0.05
Sterilization	.114	>0.05	.132	>0.05
Aseptic technique	.357	>0.05	.437*	<0.05
Disposing clinical waste	-.080	>0.05	.008	>0.05
Notification &isolation	.257	>0.05	.350	>0.05
Specimen collection	.007	>0.05	.090	>0.05
Prevention &control of respiratory tract infection	.039	>0.05	.252	>0.05
Endo tracheal suction	-.020	>0.05	.258	>0.05
Medication &fluid	.081	>0.05	.242	>0.05
Prevention &control of urinary tract infection	-.65	>0.05	.318	>0.05
Prevention of intravascular device	.169	>0.05	-.043	>0.05

Table (24)illustrates positive correlation between personal hygiene and years of experience among physicians (r =.375 , p <0.05) as well as between aseptic technique and years of experience (r =.437, p <0.05) ,and showed no correlation between experience and practices among nurses

Table(25) Correlation coefficient between ,years of experience and subtotal of knowledge about infection control measures among physicians & nurses.

Items **years of experience and subtotal of knowledge**	**Knowledge among physicians and nurses**			
	Physicians n=6		**Nurses n= 29**	
	r	**p**	**r**	**P**
-Basic knowledge about infection	-.171	>0.05	-.099	>0.05
-Personal hygiene	.316	>0.05	-.183	>0.05
- cleaning and disinfection	.108	>0.05	-.037	>0.05
-protective clothes	.108	>0.05	-.039	>0.05
-waste disposal	.759	>0.05	.216	>0.05
-Notification and isolation	-.542	>0.05	-.216	>0.05
-Specific infection control measures in ICU	.795	>0.05	.198	>0.05

Table (25)showed no correlation between , years of experience and subtotal of knowledge about infection control measures among physicians and nurses.

Table(26) Correlation coefficient between ,age and subtotal knowledge about infection control measures among physicians & nurses.

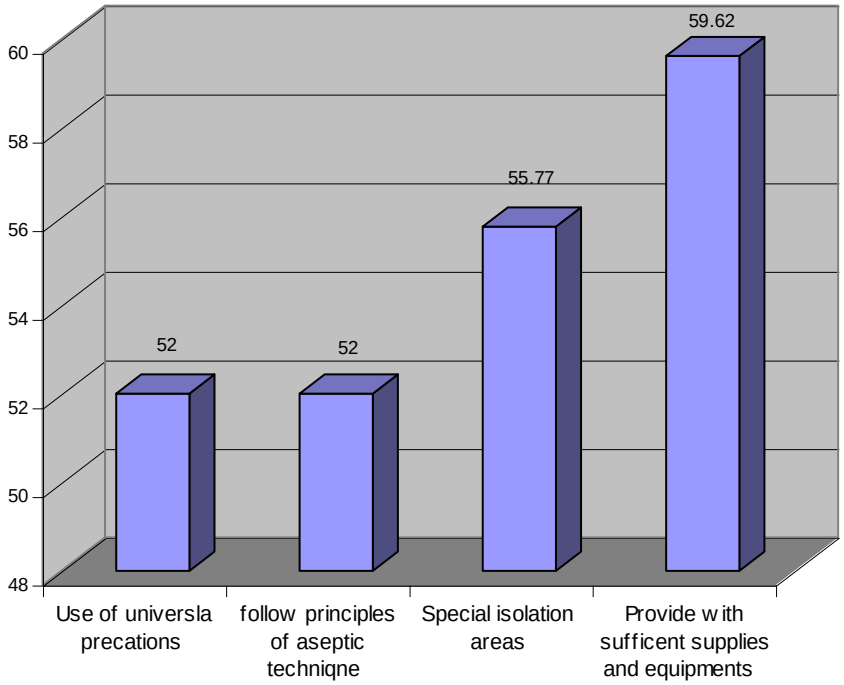
Items age and subtotal knowledge	**Knowledge among physicians and nurses**			
	Physicians n=6		**Nurses n= 29**	
	r	**p**	**r**	**P**
-Basic knowledge about infection	.082	>0.05	-.276	>0.05
-Personal hygiene	.316	>0.05	-.053	>0.05
- cleaning and disinfection	.234	>0.05	.114	>0.05
-protective clothes	.234	>0.05	.092	>0.05
-waste disposal	.701	>0.05	.166	>0.05
-Notification and isolation	-.200	>0.05	-.166	>0.05
-Specific infection control measures in ICU	.701	>0.05	.092	>0.05

Table (26)showed no correlation between ,age and subtotal of knowledge about infection control measures among physicians & nurses .

Table (27): Distribution obstacles for infection control as reported by respondents among physicians, nurses, nursing supervisors and Auxiliary workers.

Frequency / Items	Physicians n= 6		Nurses n= 29		Nursing supervisors n= 11		Auxiliary workers n= 6	
	N	%	N	%	N	%	N	%
1- Shortages of equipments and supplies.	4	66.6	12	41.4	6	54.4	1	16.7
2- Shortages of trained man power	1	16.7	8	27.5	2	18.18	1	1.7
3- Shortages of waste disposal facilities.	1	16.7	9	31.1	3	27.18	4	66.6

Table (27)illustrates that the majority of physicians , nursing supervisors and nurses have listed obstacles for infection control shortages of equipments and supplies as well as the auxiliary workers have listed obstacles of shortages of waste disposal facilities.



Fig(1): Distrubution of suggestion for infection control measures reported by sbuject groups