RESULTS

Results of the study will be presented in the following parts:

PART I : - Characteristics of the studied nurses.
Table (1)

PART II : - Nurses' knowledge regarding immediate postpartum care before / after teaching. Table (2-10)

PART III :-Standards of nursing care during immediate postpartum period which includes:-

Standard 1: Availability of structural items in postpartum unit Table (11)

Standard 2: Actual practice of nurses during immediate postpartum care before / after training. Table (12-17)

PART IV:-Correlation between nurses' knowledge and practice scores in relation to their age and years of experience. Table (18-20)

* Tables (2, 3, 4, 6, 7, 9, 12, 15 & 20) answer the study hypothesis; nurses' knowledge and practice will be improved after teaching and training.

PART I : - Characteristics of the studied nurses

Table (1) Characteristics of the studied nurses

Characteristics of nurses	n= 40	
	Number	**Percent**
Age (years)		
< 20	5	12.5
20 -	7	17.5
25 -	9	22.5
≥ 30	19	47.5
Mean ± SD	29.5 ± 6.7	
Qualification		
Secondary school diploma	38	95.0
Bachelor degree	2	5.0
Experience (years)		
< 3	7	17.5
3 – 10	9	22.5
>10	24	60.0
Mean ± SD	11.5 ± 6.4	

This table shows that, the total study sample was 40 nurses, (47.5%) of them were over 30 years & the mean ± SD of age was 29.5±6.7 Regarding qualification, majority of nurses (95.0%) had secondary school diploma, while the minority (5.0%) had bachelor degree. As regards years of experience, more than half of the nurses (60.0%) had more than ten years of experience, while (17.5%) had less than 3 years of experience & the mean ± SD was 11.5± 6.4.

PART II : - Nurses' knowledge regarding immediate postpartum care before / after teaching

Table (2) Distribution and mean scores of the studied nurses' knowledge regarding concept of quality of health care and its components before / after teaching

Items	n = 40					
	Before teaching			After teaching		
	Complete correct answer	Incomplete correct answer	Incorrect answer	Complete correct answer	Incomplete correct answer	Incorrect answer
	No %	No %	No %	No %	No %	No %
-Concept of quality of health care	- -	7 17.5	33 82.5	7 17.5	23 57.5	10 25.0
Mean ± SD	0.18 ± 0.38			0.93± 0.66		**t** =8.062 **p**<0.001
-Components of quality	- -	4 10.0	36 90.0	- -	15 37.5	25 62.5
Mean ± SD	0.10 ± 0.30			0.38± 0.49		**t** =2.905 **p** <0.006

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (2) illustrates that, there was highly statistically significant difference before / after teaching in relation to the studied nurses' knowledge regarding concept of quality of health care and its components (t= 8.062, p= <0.001 and t= 2.905, p= <0.006) respectively.

Table (3) Distribution and mean scores of the studied nurses' knowledge regarding definition of postpartum period and objectives of care before / after teaching

Items	n = 40					
	Before teaching			After teaching		
	Complete correct answer	Incomplete correct answer	Incorrect answer	Complete correct answer	Incomplete correct answer	Incorrect answer
	No %	No %	No %	No %	No %	No %
-Definition of postpartum period	2 5.0	38 95.0	- -	12 30.0	28 70.0	- -
Mean ± SD	1.05± 0.22			1.30± 0.46		**t**=3.204 **p**<0.003
-Objectives of care	4 10.0	26 65.0	10 25.0	16 40.0	23 57.5	1 2.5
Mean ± SD	0.85± 0.58			1.38± 0.54		**t**=3.787 **p**<0.001

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (3) reveals that, there was highly statistically significant difference before / after teaching regarding the studied nurses' knowledge about definition of postpartum period (t= 3.204, p= <0.003) and objectives of immediate postpartum care (t= 3.787, p= <0.001).

Table (4) Distribution and mean scores of the studied nurses' knowledge about importance of immediate postpartum care before / after teaching

Items	n = 40					
	Before teaching			After teaching		
	Complete correct answer No %	Incomplete correct answer No %	Incorrect answer No %	Complete correct answer No %	Incomplete correct answer No %	Incorrect answer No %
-Importance of the first two hours after delivery	8 20.0	28 70.0	4 10.0	19 47.5	20 50.0	1 2.5
Mean ± SD	1.10± 0.55			1.45 ± 0.55		**t** =3.163 **p**<0.003
-Nursing care for woman in immediate postpartum period	18 45.0	14 35.0	8 20.0	26 65.0	12 30.0	2 5.0
Mean ± SD	1.25± 0.78			1.60± 0.59		**t**=3.819 **p**<0.001

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

As shown in table (4), there was highly statistically significant difference before / after teaching regarding the studied nurses' knowledge related to importance of the first two hours after delivery and nursing care for woman in immediate postpartum period (t= 3.163, p= <0.003 and t= 3.819, p= <0.001) respectively.

Table (5) Distribution and mean scores of the studied nurses' knowledge regarding protocols of taking vital signs and breastfeeding encouragement before / after teaching

Items	n = 40					
	Before teaching			After teaching		
	Complete correct answer	Incomplete correct answer	Incorrect answer	Complete correct answer	Incomplete correct answer	Incorrect answer
	No %	No %	No %	No %	No %	No %
-Protocols of taking vital signs	3 7.5	9 22.5	28 70.0	7 17.5	11 27.5	22 55.0
Mean ± SD	0.38± 0.63			0.63± 0.77		**t** =1.657 **p**>0.05
-Breastfeeding encouragement	7 17.5	18 45.0	15 37.5	9 22.5	30 75.0	1 2.5
Mean ± SD	0.80± 0.72			1.20± 0.46		**t** =3.569 **p**<0.001

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (5) clarifies that, there was no statistically significant difference before / after teaching in relation to the studied nurses' knowledge regarding protocols of taking vital signs (t= 1.657, p >0.05). While there was highly statistically significant difference in relation to the studied nurses' knowledge regarding breastfeeding encouragement (t= 3.569**,** p <0.001).

Table (6) Mean scores of nurses' knowledge about physical assessment during immediate postpartum period before / after teaching

Items of physical assessment	Before teaching Mean ± SD	After teaching Mean ± SD	Paired t-test	p-Value
General assessment				
- Vital signs	0.93 ± 0.66	1.28 ± 0.68	2.270	< 0.05
- Lower extremities	0.50 ± 0.59	1.23 ± 0.69	5.414	< 0.001
- Urination	0.78 ± 0.62	1.38± 0.70	4.356	< 0.001
Local assessment				
- Uterus	0.95 ± 0.78	1.45 ± 0.50	3.204	< 0.003
- Lochia	0.73 ± 0.59	1.35 ± 0.62	3.934	< 0.001
- Perineum	0.93 ± 0.62	1.20± 0.69	1.984	< 0.05

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (6) indicates that, there was statistically significant difference before / after teaching in relation to nurses' knowledge about physical assessment in immediate postpartum period. As regards items of general assessment {vital signs (t= 2.270, p= < 0.05), lower extremities (t= 5.414, p= < 0.001), urination (t= 4.356, p=<0.001),}. Moreover, items of local assessment {uterus (t= -3.204, p=<0.003), lochia (t= 3.934, p=< 0.001), perineum (t= 1.984, p=< 0.05).

Table (7) Distribution and mean scores of the studied nurses' knowledge about physical and psychological needs of woman in immediate postpartum period before / after teaching

Items	n = 40					
	Before teaching			After teaching		
	Complete correct answer	Incomplete correct answer	Incorrect answer	Complete correct answer	Incomplete correct answer	Incorrect answer
	No %	No %	No %	No %	No %	No %
-Physical needs of postpartum woman immediately after delivery	2 5.0	26 65.0	12 30.0	7 17.5	27 67.5	6 15.0
Mean ± SD	0.75± 0.54			1.03± 0.58		**t** =2.218 **p**<0.05
-Psychological needs of postpartum woman immediately after delivery	1 2.5	29 72.5	10 25.0	12 30.0	25 62.5	3 7.5
Mean ± SD	0.78± 0.48			1.23± 0.58		**t** =3.636 **p**<0.001

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (7) illustrates that, there was statistically significant difference before / after teaching in relation to the studied nurses' knowledge regarding physical and psychological needs of postpartum woman immediately (t= 2.218, p= <0.05 and t= 3.636, p= <0.001) respectively.

Table (8) Mean scores of the studied nurses' knowledge about discharge health education and infection control measures before / after teaching

Items	Before teaching Mean ± SD	After teaching Mean ± SD	Paired t-test	p-Value
-Discharge postpartum care for mother and newborn	0.65 ± 0.58	1.20 ± 0.61	4.444	<0.001
-Warning signs of postpartum for mother and newborn	0.65± 0.53	0.88 ± 0.52	2.467	<0.05
-Infection control measures	0.68 ± 0.47	0.88 ± 0.52	1.842	>0.05

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (8) displays that, there was highly statistically significant difference before / after teaching in relation to the studied nurses' knowledge about discharge postpartum care and warning signs of postpartum for mother and newborn (p= <0.001, p= <0.05) respectively. Except the knowledge related to infection control measures, there was no statistically significant difference before / after teaching (p >0.05).

Table (9) Distribution and mean scores of the studied nurses' knowledge regarding objectives and components of immediate newborn care before / after teaching

Items	n = 40									
	Before teaching						After teaching			
	Complete correct answer		Incomplete correct answer		Incorrect answer		Complete correct answer		Incomplete correct answer		Incorrect answer	
	No	%	No	%	No	%	No	%	No	%	No	%
-Objectives of immediate newborn care	-	-	17	42.5	23	57.5	-	-	27	67.5	13	32.5
Mean ± SD	0.43± 0.50						0.68± 0.47				**t**=2.912 **p**<0.006	
-Components of immediate newborn care	-	-	15	37.5	25	62.5	1	2.5	26	65.0	13	32.5
Mean ± SD	0.38± 0.49						0.70 ± 0.52				**t**=3.340 **p**<0.002	

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (9) indicates that, there was highly statistically significant difference before / after teaching regarding the studied nurses' knowledge related to objectives of immediate newborn care (t= 2.912, p= <0.006) and components of immediate newborn care (t= 3.340, p= <0.002).

Table (10) Mean scores of the studied nurses' knowledge regarding postpartum complications before / after teaching

Items	Before teaching Mean ± SD	After teaching Mean ± SD	Paired t-test	p-Value
-Different kinds associated with postpartum complications	0.68± 0.47	1.03 ± 0.48	3.009	<0.005
-Causes of postpartum complications	0.88 ± 0.33	0.98 ± 0.16	1.669	>0.05
-Prevention of postpartum complications	0.43 ± 0.50	0.88 ± 0.61	3.984	<0.001

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (10) denotes that, there was highly statistically significant difference before / after teaching regarding the studied nurses' knowledge related to different kinds associated with postpartum complications (t=3.009, p= <0.005) and prevention of postpartum complications (t=3.984, p= <0.001).While there was no statistically significant difference before / after teaching regarding the studied nurses' knowledge related to causes of postpartum complications (t= 1.669, p= >0.05).

PART III:-Standards of nursing care during immediate postpartum period

Standard 1: Availability of structural items in postpartum unit

Table (11) Mean scores of availability of structural items in postpartum unit

Items	Shifts			F ANOVA	p-Value
	Morning	Afternoon	Night		
	Mean ± SD	Mean ± SD	Mean ± SD		
-Physical structure	1.80± 0.45	1.60± 0.55	1.60± 0.55	0.250	>0.05
- Furniture	0.89± 0.78	0.89± 0.78	0.89± 0.78	0.00	>0.05
- Equipment and supplies	0.81± 0.79	0.70 ± 0.67	0.63± 0.69	0.457	>0.05
- Drugs	2.00± 0.00	1.57± 0.53	1.57± 0.53	2.250	>0.05
- Logistics	1.00± 1.41	1.00± 1.41	1.00± 1.41	0.00	>0.05

Table (11) illustrates that, there was no statistically significant difference related to availability of structural items in postpartum unit (p= >0.05).

Standard 2: Actual practice of nurses during immediate postpartum care before / after training

Table (12) Mean scores of actual practice of nurses regarding admission procedure and explanation of care in immediate postpartum care before / after training

Nursing Procedures	Before training Mean ± SD	After training Mean ± SD	Paired t-test	p-Value
- Admission procedure	1.28 ± 0.72	1.63 ± 0.59	3.557	< 0.001
- Explanation of care	0.13 ± 0.33	0.83 ± 0.45	8.573	< 0.001

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

As shown in table (12), there was highly statistically significant difference before / after training in relation to actual practice of nurses regarding admission procedure (t= 3.557, p = < 0.001) and explanation of care (t = 8.573, p= < 0.001).

Table (13) Mean scores of actual practice of nurses regarding postpartum assessment during immediate postpartum care before / after training

Postpartum assessment	Before training Mean ± SD	After training Mean ± SD	Paired t-test	p-Value
-Observe general appearance	0.25 ± 0.44	0.65 ± 0.48	5.099	< 0.001
-Assessing vital signs	0.05 ± 0.22	0.10 ± 0.30	1.433	>0.05
-Assessing the uterine fundus and uterine massage	8.23 ± 1.88	9.13 ± 2.13	3.250	< 0.002
- Assessing lochia	0.55 ± 0.59	0.80 ± 0.56	2.687	< 0.05
-Assessing bladder elimination	0.18 ± 0.38	0.58 ± 0.51	5.099	< 0.001
-Lower extremities assessment	0.00 ± 0.00	0.25 ± 0.44	3.606	< 0.001
-Comfort level assessment	0.95 ± 0.71	1.28 ± 0.55	2.962	< 0.005
-Evaluate psychological status	0.98 ± 0.62	1.08 ± 0.53	0.941	>0.05

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (13) illustrates that, there was highly statistically significant difference before / after training in relation to actual practice of nurses regarding postpartum assessment items except, assessment vital signs and evaluating of psychological status, there was no statistically significant difference before / after training (p = >0.05).

Table (14) Mean scores of actual practice of nurses about providing comfort and supportive measures during immediate postpartum care before / after training

Comfort and supportive measures	Before training Mean ± SD	After training Mean ± SD	Paired t-test	p-Value
- Perineal care	1.55 ± 2.15	1.78 ± 2.22	1.297	>0.05
- Breast care	2.65 ± 1.56	2.93 ± 1.67	2.562	< 0.05
- Pain management	1.40 ± 0.90	1.83 ± 1.01	3.306	< 0.002

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (14) shows mean scores of actual practice of nurses about providing comfort and supportive measures during immediate postpartum care. The results revealed that, there was statistically significant difference before / after training in relation to breast care and pain management, while there was no statistically significant difference before / after training in relation to perineal care (p = >0.05).

Table (15) Mean scores of actual practice of nurses about providing discharge health education during immediate postpartum period before / after training

Components of discharge education	Before training Mean ± SD	After training Mean ± SD	Paired t-test	p-Value
- Nutrition	0.85 ± 0.53	1.23 ± 0.48	4.050	< 0.001
-Perineal cleansing and episiotomy care	0.65 ± 0.48	1.00 ± 0.32	3.819	< 0.001
-Breast care and counseling about breastfeeding	0.73 ± 0.51	1.03 ± 0.42	3.122	< 0.003
-Counseling about sexual activity and contraception	0.00 ± 0.00	0.40 ± 0.49	5.099	< 0.001
- Newborn care	0.60 ± 0.49	0.95 ± 0.22	4.149	< 0.001
-Warning signs for mother and newborn during puerperium	0.25 ± 0.16	0.43 ± 0.51	4.639	< 0.001
-Follow up	0.53 ± 0.51	0.88 ± 0.33	3.343	< 0.002

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (15) illustrates that, there was highly statistically significant difference before / after training in relation to actual practice of nurses regarding components of discharge health education during immediate postpartum period. As regards nutrition (t= 4.050, p= < 0.001), perineal cleansing and episiotomy care (t= 3.819, p=< 0.001), breast care and counseling about breast feeding (t= 3.122, p=< 0.003), counseling about sexual activity and contraception (t= 5.099, p=<0.001), newborn care (t= 4.149, p=< 0.001), warning signs for mother and newborn during puerperium (t= 4.639, p=< 0.001), follow up (t= 3.343 , p= < 0.002).

Table (16) Mean scores of actual practice of nurses regarding infection control measures during immediate postpartum care before / after training

Infection control measures	Before training Mean ± SD	After training Mean ± SD	Paired t-test	p-Value
-Supervision of room cleanliness	0.68 ± 0.47	0.95 ± 0.39	3.439	< 0.001
-Disinfection of the room	0.35 ± 0.48	0.50 ± 0.51	1.964	< 0.05
- Hand washing before any procedure	0.00 ± 0.00	0.00 ± 0.00	-	-
-Hand washing after any procedure	0.00 ± 0.00	0.20 ± 0.41	3.122	< 0.003
-Wearing disposable gloves	0.80 ± 0.41	0.83 ± 0.55	0.240	>0.05
-Wearing sterile gloves	0.00 ± 0.00	0.00 ± 0.00	-	-
-Skin disinfection	0.00 ± 0.00	0.00 ± 0.00	-	-
-Cleaning, disinfecting equipment	0.00 ± 0.00	0.00 ± 0.00	-	-
- Supervision of waste disposal	0.15 ± 0.36	0.20 ± 0.41	0.628	>0.05

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (16) shows mean scores of actual practice of nurses regarding infection control measures during immediate postpartum care before / after training. The results indicated that, there was highly statistically significant difference related to cleansing of the room (t= 3.439, p= < 0.001) and hand washing after any procedure (t= 3.122, p= < 0.003), and statistically significant difference related to disinfection of the room (t= 1.964, p= <0.05). While there was no statistically significant difference related to Wearing disposable gloves (t= 0.240, p= >0.05) and Waste disposal (t= 0.628, p= >0.05).

Table (17) Mean scores of actual practice of nurses regarding immediate newborn care before / after training

Newborn care procedures	Before training Mean ± SD	After training Mean ± SD	Paired t-test	p- Value
-Apgar score at 1 and 5 minutes	0.00 ± 0.00	0.00 ± 0.00	-	-
- Suction to keep clearance of airway passage	1.25 ± 0.63	1.53 ± 0.68	2.905	<0.006
-Keep warmth of newborn	1.28 ± 0.64	1.63 ± 0.49	3.343	< 0.002
-Cord care	0.60 ± 0.71	0.95 ± 0.68	2.211	< 0.05
-Eye care	0.03 ± 0.16	0.15 ± 0.43	1.706	>0.05
-Weighing the baby	0.00 ± 0.00	0.00 ± 0.00	-	-
-Measure chest and head circumference	0.00 ± 0.00	0.00 ± 0.00	-	-
-Complete physical and neurological examination	0.13 ± 0.33	0.28 ± 0.45	1.525	>0.05
-Identification of the baby	0.00 ± 0.00	0.00 ± 0.00	-	-

A statistical significant difference (P ≤ 0.05)
A highly statistical significant difference (P ≤ 0.001)

Table (17) shows mean scores of actual practice of nurses regarding immediate newborn care before / after training. The results revealed that, there was highly statistically significant difference related to suction to keep clearance of airway passage (t= 2.905, p= < 0.006), keep warmth of newborn (t= 3.343, p= < 0.002) and statistically significant difference related to cord care (t= 2.211, p= <0.05). While there was no statistically significant difference related to eye care (t= 1.706, p= >0.05) and complete physical and neurological examination (t= 1.525, p= >0.05).

PART IV: - Correlation between nurses' knowledge and practice scores in relation to their age and years of experience

Table (18) Correlation coefficient between total nurses' knowledge scores regarding immediate postpartum nursing care before /after teaching, age and years of experience

Variable	Knowledge before teaching		Knowledge after teaching	
	r	p	r	P
Age	-0.531	< 0.01	-0.635	< 0.01
Years of experience	-0.528	< 0.01	-0.636	< 0.01

Table (18) shows that, there was negative statistically significant correlation between knowledge before and after teaching and age (r = -0.531, r = -0.635) respectively. Also, there was negative statistically significant correlation between knowledge before and after teaching and years of experience (r = -0.528, r = -0.636) respectively.

Table (19) Correlation coefficient between total nurses' practice scores regarding immediate postpartum nursing care before / after training, age and years of experience

Variable	Practice before training		Practice after training	
	r	p	r	P
Age	-0.436	< 0.01	-0.692	< 0.01
Years of experience	-0.421	< 0.01	-0.635	< 0.01

Table (19) shows that, there was negative statistically significant correlation between practice before and after training and age (r = -0.436, r = -0.692) respectively. Moreover, there was negative statistically significant correlation between practice before and after training and years of experience (r = -0.421, r = -0.635) respectively.

Table (20) Correlation coefficient between total scores of nurses' Knowledge and practice before / after teaching and training

Variable	Knowledge before teaching		Knowledge after teaching	
	r	**p**	**r**	**P**
Practice before training	0.283	>0.05		
Practice After training			0.427	< 0.01

Table (20) reveals that, there was no statistically significant correlation between knowledge before teaching and practice before training (r = 0.283, p = >0.05). On the other hand, there was statistically significant correlation between knowledge after teaching and practice after training (r = 0.427, p = < 0.01).