RESULTS

Presentation and Analysis of Data

The results of the current study are classified into the following:

First:

Assessment of nurses' knowledge about diabetic foot this consists of the following part:

Part (A):

Demographic data for studied nurses (table, 1) & (figure, 14)

Part (B):

- Assessment of nurses' knowledge related to diabetes mellitus disease (tables, 2 : 4)
- Assessment of nurses' knowledge about diabetic foot (tables, 5 & 6) and (figure, 15).
- Assessment of problems that face the nurses during providing nursing care for patients with diabetic foot (table, 7).

Second:

Assessment of nurses practice regarding diabetic foot care procedure (tables, 8 : 10), and (figure, 16).

Relationship between variables of the study nurses (table, 11: 15).

Tool one Part (A): general and demographic characteristics of the study sample.

Table (1): Number and percentage distribution of the study sample according to their demographic characteristics.

Demographic characteristics	N = 60	
1- nurses age	**No.**	**%**
19-24	20	33.3
25-30	22	36.7
>30	18	30
Mean ± SD	1.96 ± 0.80	
2- level of education		
Diploma (secondary school)	43	71.7
Diploma + specialty	3	5
Technical nursing institute	8	13.3
Bachelor degree	6	10
Master degree	0	0
3- years of experience		
<1year	9	15
1<5year	24	40
5-10year	12	20
>10year	15	25
Mean ± SD	2.55 ± 1.03	

As shown in table (1), the demographic characteristics of the present study among nurses included age, level of education and years of experience. As regards age, more than one third of the study group (36.7%) were implemented care for diabetic foot patients are in the age category (25-30 years) with a mean age of (1.96 ± 0.80 years). Concerning educational level, more than two thirds of the study groups (71.7%) were diploma degree of nursing education. And more than one third of studied nurses (40%) were experienced from (1<5 years) with a mean years of (2.55 ± 1.03).

Figure (14): Number and percentage distribution of study nurses according to their previous attendance of training courses related to nursing care for patients with diabetic foot.

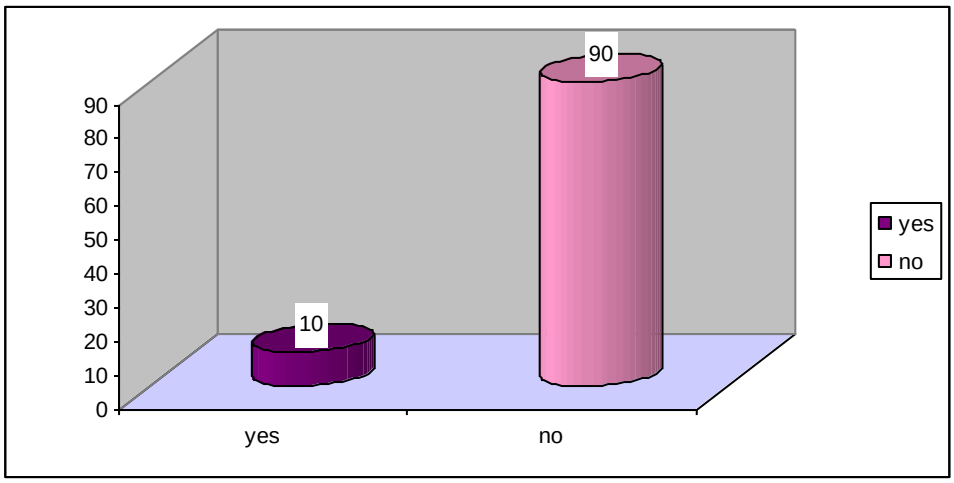


Figure (14): revealed that the majority of study nurses (90%) didn't attend previous training courses, while the minority of them (10%) were attended.

Tool one Part (B): assessment of knowledge related to diabetes mellitus and diabetic foot of the study sample.

Table (2): Number and percentage distribution of nurses' knowledge about definition, types, risk factors, and causes of diabetes mellitus

Items	N = 60					
	good		average		poor	
	No	%	No	%	No	%
Definition of diabetes mellitus	38	63.3	12	20	10	16.7
Types of diabetes mellitus	54	90	6	10	0	0
Risk factors of diabetes mellitus	25	41.7	21	35	14	23.3
Causes of diabetes mellitus	29	48.3	21	35	10	16.7

Table (2) Showed that the majority of the study group (63.3 % and 90%) respectively were have good knowledge about definition and types of diabetes mellitus, while about one third (35% and 35%) of them were have average knowledge about risk factors and causes of diabetes mellitus.

Table (3): Number and percentage distribution of nurses' knowledge about normal range of blood glucose

Normal range of blood glucose	N = 60			
	yes		No	
	No	%	No	%
Fasting blood glucose	57	95	3	5
Post prandial blood glucose (after 2hr of eating)	54	90	6	10
Random blood glucose	28	46.7	32	53.3

Table (3) illustrated that the most of the study group (95%, and 90%) respectively were know normal range of fasting and post prandial blood glucose correctly, while more than one half of them (53.3%) were not know normal range of random blood glucose.

Table (4): Number and percentage distribution of nurses' knowledge about symptoms of diabetes mellitus, signs of high blood sugar, complications, and treatment of diabetes mellitus

Items	N = 60					
	good		average		poor	
	No	%	No	%	No	%
Symptoms of diabetes mellitus	49	81.7	8	13.3	3	5
Signs of high blood sugar	46	76.7	12	20	2	3.3
Complications of diabetes mellitus	43	71.7	5	8.3	12	20
Treatment of diabetes mellitus	48	80	5	8.3	7	11.7

Table (4) This table revealed that the majority of nurses (81.7%, 80%, 76.7% and 71.7%) respectively had good knowledge about symptoms of diabetes mellitus, treatment of diabetes mellitus, signs of high blood sugar and complications of diabetes mellitus.

Table (5): Number and percentage distribution of Nurses' knowledge about definition, risk factors, and causes of diabetic foot

Items	N = 60					
	good		average		poor	
	No	%	No	%	No	%
Definition of diabetic foot	35	58.3	13	21.7	12	20
Risk factors of diabetic foot	31	51.7	23	38.3	6	10
Causes of diabetic foot	37	61.7	18	30	5	8.3

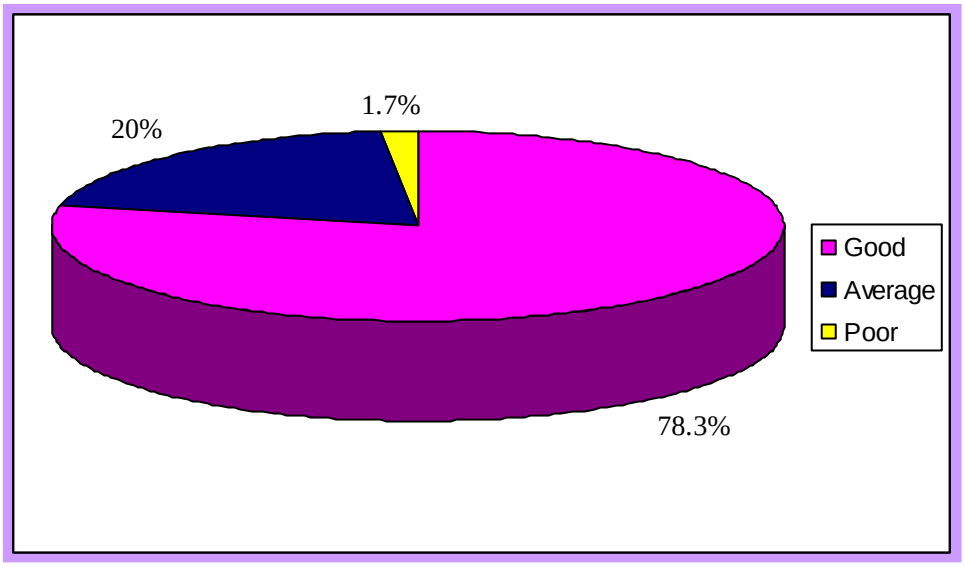
Table (5) showed that more than one half and less than two third of the study group (58.3% and 61.7%) respectively were having good knowledge about definition and causes of diabetic foot, while more than one third of them were having average knowledge about risk factors of diabetic foot.

Table (6): Number and percentage distribution of nurses' knowledge about signs and symptoms, methods of prevention of diabetic foot, and purpose from diabetic foot care

Items	N = 60					
	good		average		poor	
	No	%	No	%	No	%
Signs and symptoms of diabetic foot	40	66.7	18	30	2	3.3
Methods of prevention of diabetic foot	55	91.7	5	8.3	0	0
Purpose from diabetic foot care	48	80	12	20	0	0

Table (6) illustrated that most of the study group (91.7%, and 80%) respectively had good knowledge about methods of prevention of diabetic foot, and purpose from diabetic foot care, while the minimum of them (30%) had average knowledge about signs and symptoms of diabetic foot.

Figure (15): Number and percentage distribution of nurses' total knowledge



This figure demonstrated that, the majority of the study group (78.3%) had good knowledge about diabetes mellitus disease and diabetic foot, while the minority of them (1.7%) had poor knowledge.

Table (7): Number and percentage distribution of the Problems that face the study nurses to provide care for patients with diabetic foot

problems	N = 60			
	Present		Not present	
	No	%	No	%
1- Lack of medical supplies needed to provide foot care	48	80	12	20
2- Continuous changes in the treatment plan provided to diabetic foot patients	0	0	60	100
3- Lack of advice and guidance during the work	12	20	48	80
4- Lack of training before joining the Unit of General Surgery	21	35	39	65
5- Lack of continuous educational programs on how to provide nursing care for diabetic foot patients	47	78.3	13	21.7
6- The existence of conflicts between nurses with different specialty	2	3.3	58	96.7
7-Lack of experience years in the work unit of General Surgery	16	26.7	44	73.3
8- Fear of dealing with diabetic foot patients	18	30	42	70
9- Feeling anxious as a result of dealing with such kind of diseases	24	40	36	60

Table (7) revealed that the majority of the study nurses (80% and 78.3%) respectively had a lack of medical supplies and educational programs, while more than one third of them (40%)were anxious as a result of dealing with such kind of diseases.

Tool two: assessment of nurses' practice regarding diabetic foot care that done for diabetic foot patients by the study sample.

Table (8): Number and percentage distribution of the nurses' Practice related to diabetic foot care, and diabetic foot wound care procedures that done for diabetic foot patients

Procedure	N = 60					
	Done complete		Done incomplete		Not done	
	No	%	No	%	No	%
Diabetic foot care	0	0	0	0	60	100
Diabetic foot wound care	14	23.3	40	66.7	6	10

Table (8) showed that all of nurses (100%) didn't do the procedure of diabetic foot care, however slightly less than quarter of them (23.3%) were completely done procedure of diabetic foot wound care.

Table (9): Number and percentage distribution of nurses' instructions that given for patients with diabetic foot

Instructions	N = 60					
	Done complete		Done incomplete		Not done	
	No	%	No	%	No	%
Foot care	22	36.7	18	30	20	33.3
Foot wear	25	41.7	15	25	20	33.3
Maintain blood flow	37	61.7	9	15	14	23.3
General instructions	28	46.6	16	26.7	16	26.7

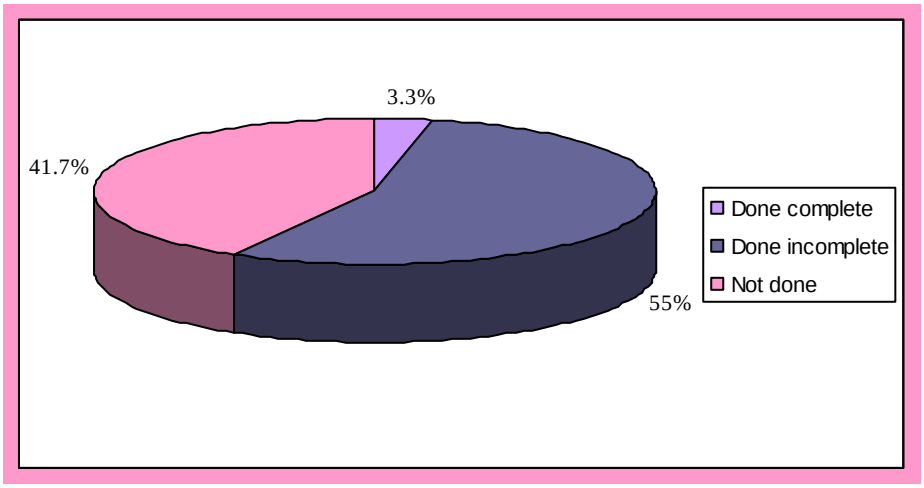
This table revealed that, less than two third of the study nurses (61.7%) were completely done maintain feet blood flow instructions for patients with diabetic foot, however around one third of them (33.3%, and 33.3%) were didn’t done foot care, and foot wear instructions.

Table (10): Number and percentage distribution of nurses' total instructions that given for patients with diabetic foot.

Total instruction	***No***	***%***
Done complete	18	30
Done incomplete	22	36.7
Not done	20	33.3

This table showed that more than one third (36.7%) of the study nurses had done instructions for patients with diabetic foot incompletely while, around one third (33.3%) of them didn't do it.

Figure (16): Number and percentage distribution of nurses' total practice that given for patients with diabetic foot



This figure illustrated that, more than one half (55%) of the study nurses were incompletely done actual procedure of diabetic foot care, while the minority of them (3.3%) were completely done.

Table (11): Relationship between demographic data and nurses' total knowledge

Nurses knowledge / Demographic data	good n = 47		average n = 12		poor n = 1		Total	Chi-square χ^2	P value
	No.	%	No.	%	No	%			
Nurses age (years)									
19-24	9	45	10	50	1	5	20	72.285	<0.05*
25-30	20	90.9	2	9.1	0	0	22		
>30	18	100	0	0	0	0	18		
Educational level									
Diploma nursing (secondary school)	30	69.8	12	27.9	1	2.3	43	71.422	<0.05*
Diploma nursing + specialty	3	100	0	0	0	0	3		
Technical nursing institute	8	100	0	0	0	0	8		
Bachelor degree	6	100	0	0	0	0	6		
years of Experience									
<1 year	4	44.4	4	44.4	1	11.2	9	103.931	<0.05*
1< 5 year	18	75	6	25	0	0	24		
5-10 year	11	91.7	1	8.3	0	0	12		
> 10 year	14	93.3	1	6.7	0	0	15		
Attendance of training courses about diabetic foot nursing care									
Yes	6	100	0	0	0	0	6	25.741	<0.05*
No	41	75.9	12	22.2	1	1.9	54		

**** = Statistically significant at ≤ 0.05***

As presented in ***Table (11):*** the results revealed that there were statistical significant relationship ($p<0.05$) between nurses demographic data (age, level of education, years of experience, and attendance of training courses about diabetic foot nursing care) and nurses' total knowledge, the higher percentage of the studied group (100%, 93.3%, and 100%) had good knowledge especially those who were more than 30 years in age group, experienced from more than ten years, and had pervious attendance of training courses regarding diabetic foot nursing care, while less than one third (27.9%) of nurses were secondary school education and had average knowledge.

Table (12): Relationship between demographic data and nurses' practice related to diabetic foot wound care

Nurses practice / Demographic data	Done complete n = 14		Done incomplete n = 40		Not done n = 6		Total	Chi-square χ^2	P value
	No	%	No	%	No	%			
Nurses age (years)									
19-24	2	10	14	70	4	20	20	38.863	<0.05*
25-30	8	36.4	13	59.1	1	4.5	22		
>30	4	22.2	13	72.2	1	5.6	18		
Educational level									
Diploma nursing (secondary school)	3	7	34	79.1	6	13.9	43	108.071	<0.001**
Diploma nursing + specialty	0	0	3	100	0	0	3		
Technical nursing institute	5	62.5	3	37.5	0	0	8		
Bachelor degree	6	100	0	0	0	0	6		
years of Experience									
<1 year	2	22.2	4	44.4	3	33.4	9	51.026	>0.05
1< 5 year	6	25	17	70.8	1	4.2	24		
5-10 year	3	25	8	66.7	1	8.3	12		
> 10 year	3	20	11	73.3	1	6.7	15		
Attendance of training courses about diabetic foot nursing care									
Yes	2	33.3	4	66.7	0	0	6	15.106	<0.05*
No	12	22.2	36	66.7	6	11.1	54		

**** = Statistically significant at ≤ 0.05***

***** = highly statistically significant at ≤ 0.001***

No statistically significant at > 0.05

This table demonstrated that there was a statistical significant relations ($p<0.05$) between nurses' practice related to diabetic foot wound care and their age, less than quarter (22.2%) of the study group were more than 30 year of age had complete done procedure of diabetic foot wound care in comparison with (10%) of them were aged from 19 to 24 years. As well as this table clear that there was highly statistical significant relation ($p<0.001$) between nurses' practice and their level of education, while all of the study nurses (100%) were bachelor degree had done the procedure of diabetic foot wound care complete in comparison with the minority (7%) of them were diploma (secondary school) education respectively.

Table (13): Relationship between demographic data and nurses' practice related to total instructions

Nurses practice / Demographic data	Done complete n = 18		Done incomplete n = 22		Not done n = 20		Total	Chi-square χ^2	P value
	No.	%	No.	%	No	%			
Nurses age (years)									
19-24	3	15	6	30	11	55	20	43.311	>0.05
25-30	7	31.8	9	40.9	6	27.3	22		
>30	8	44.4	7	38.9	3	16.7	18		
Educational level									
Diploma nursing (secondary school)	10	23.2	14	32.6	19	44.2	43	63.601	>0.05
Diploma nursing + specialty	1	33.3	2	66.7	0	0	3		
Technical nursing institute	2	25	5	62.5	1	12.5	8		
Bachelor degree	5	83.3	1	16.7	0	0	6		
years of Experience									
<1 year	2	22.2	2	22.2	5	55.6	9	56.825	>0.05
1< 5 year	5	20.8	9	37.5	10	41.7	24		
5-10 year	6	50	4	33.3	2	16.7	12		
> 10 year	5	33.3	7	46.7	3	20	15		
Attendance of training courses about diabetic foot nursing care									
Yes	3	50	2	33.3	1	16.7	6	18.069	<0.05*
No	15	27.8	20	37	19	35.2	54		

**** = Statistically significant at ≤ 0.05***

No statistically significant at > 0.05

This table revealed that there was statistical significant relation ($p<0.05$) between nurses' practice related to total instructions and their previous attendance of training courses. Around half (50%) of nurses who had attend courses previously were completely done total instructions for diabetic foot patients, while more than one third (35.2%) of them who didn't attend courses were not done this instructions respectively. Also this table donates that, there were no a statistical significant relation ($p>0.05$) between nurses' practice and their age, level of education, and years of experience.

Table (14): Relationship between demographic data and nurses' total practice

Nurses total practice / Demographic data	Done complete n = 2		Done incomplete n = 33		Not done n = 25		Total	Chi-square χ^2	P value
	No.	%	No.	%	No	%			
Nurses age (years)									
19-24	0	0	6	30	14	70	20	74.732	<0.05*
25-30	1	4.5	15	68.2	6	27.3	22		
>30	1	5.6	12	66.7	5	27.7	18		
Educational level									
Diploma nursing (secondary school	0	0	20	46.5	23	53.5	43	122.529	<0.05*
Diploma nursing + specialty	0	0	2	66.7	1	33.3	3		
Technical nursing institute	0	0	7	87.5	1	12.5	8		
Bachelor degree	2	33.3	4	66.7	0	0	6		
years of Experience									
<1 year	0	0	3	33.3	6	66.7	9	121.592	<0.05*
1< 5 year	1	4.2	12	50	11	45.8	24		
5-10 year	1	8.3	8	66.7	3	25	12		
> 10 year	0	0	10	66.7	5	33.3	15		
Attendance of training courses about diabetic foot nursing care									
Yes	1	16.7	5	63.3	0	0	6	35.556	<0.05*
No	1	1.9	28	51.9	25	46.2	54		

**** = Statistically significant at ≤ 0.05***

This table showed that there were statistical significant relations ($p<0.05$) between nurses demographic data and their total practice that done for diabetic foot patients, more than two third (70%) of the studied group were aged from 19 to 24 years didn't do this practice in comparison with less than one third (27.7%) of them those who were aged more than 30 years respectively. As well as this table showed that (16.7%) of study nurses who had attend courses previously were completely done total practice according to (1.9%) of them who didn’t attend this courses.

Table (15): correlation between nurses' total knowledge and their total practice

r / p values variables	r	p
Total knowledge and total practice	0.478	<0.001**

***** = highly statistically significant at ≤ 0.001***

It was noticed from this table that there was a highly statistically significant and positive correlation (r = 0.478, p<0.001) between nurses total knowledge and their practice regarding to diabetic foot.