RESULTS AND ANALYSIS OF DATA

The aim of the present study was to assess psychiatric nurse's knowledge and attitudes toward antipsychotic medications.

The findings of the current study will be represented in the following sequences:

Part (I) Socio-demographic characteristics of the studied nurses is classified into two parts.

A- Personal data of the studied nurses (Table 1).

B- Professional data of the studied nurses (Table 2; figures 1&2).

Part (II) Knowledge about antipsychotic medications as mentioned by the studied nurses (Tables 3-8).

Part (III) Attitudes toward antipsychotic medications as perceived by the studied nurses (Tables 9-11).

Part (IV) Difficulty implementing adherence strategies as mentioned by the studied nurses (Tables 12-15).

Part (V) Comparison between Socio-demographic characteristics, with total knowledge, and total attitudes (Tables 16 &17) and comparison between total knowledge and total attitudes of studied nurses attended and not attended training courses about antipsychotic medications (Table 18).

Part (VI) Correlation between total knowledge and total attitudes, with total difficulty implementing adherence strategies (Table 19).

Part I: Socio-demographic Characteristics of the Studied Nurses`:

Table (1):
Frequency distribution of the studied nurses` according to their socio-demographic characteristics (Personal data) (n=100):

Items	No	%
Age (in years):		
20-	53	53.0
30-	33	33.0
40-	13	13.0
50 +	1	1.0
Mean ±SD	31.03±7.69	
Sex:		
Male	53	53.0
Female	47	47.0
Marital status:		
Single	18	18.0
Married	80	80.0
Divorced	2	2.0

Table (1) reveals that, the studied sample consisted of 100 psychiatric nurses with a mean age of 31.03 ±7.69 years, more than half of them (53%) aged between 20 - < 30 years, an equal percentage of more than half (53%) were males and 80% of them were married.

Work place:		
Male department	59	59.0
Female department	25	25.0
Outpatient	12	12.0
Nursing office	3	3.0
Patients` rights staff	1	1.0
Years of experience in psychiatric nursing:		
2 -	62	62.0
12 -	31	31.0
22-	6	6.0
32 +	1	1.0
Mean ± SD	10.70 ±7.81	
Job:		
Nurse	77	77.0
Department supervisor	19	19.0
Vice nursing	3	3.0
Head nursing	1	1.0
Education:		
Diploma of nursing	78	78.0
Health technical institute	3	3.0
Bachelor of nursing	19	19.0

Table (2):
Frequency distribution of the studied nurses` according to their Socio-demographic characteristics (professional data) (n=100):

Table (2) shows that, 59% of the studied nurses were working in male departments. 77% of the studied nurses' work as a staff nurse, and 78% of them had diploma in nursing. Concerning their years of experience in psychiatric nursing, the mean was 10.70 ± 7.81 years, and 62% of the studied nurses work in psychiatric nursing between 2 - < 12 years.

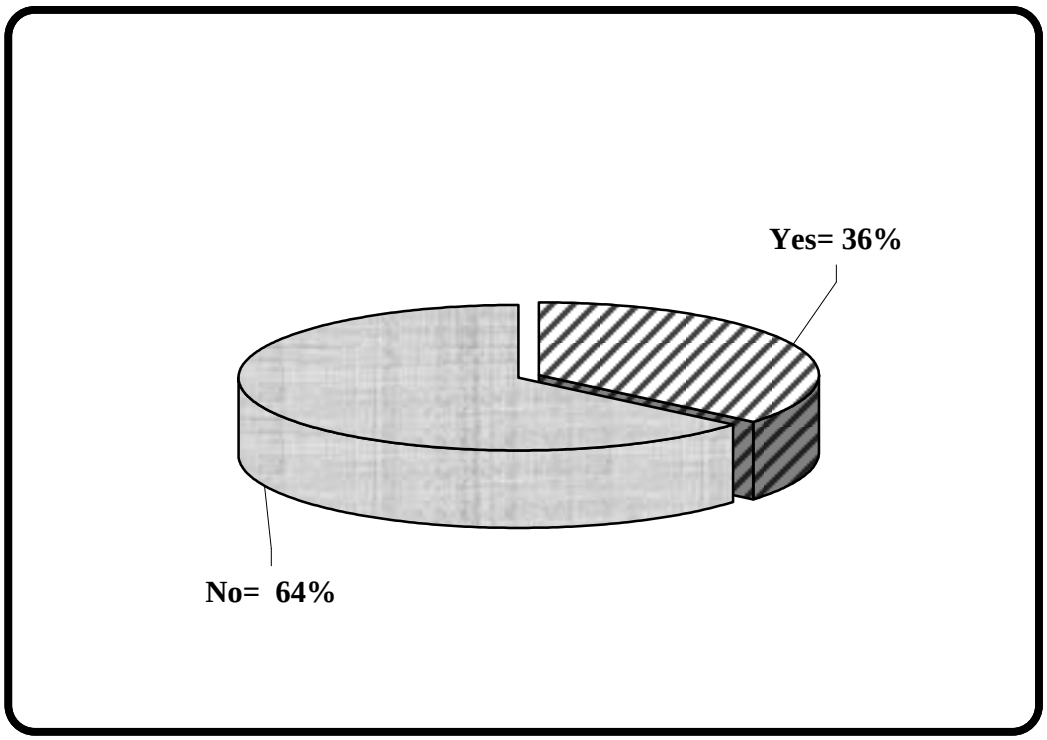

Figure (1):

Frequency distribution of the studied nurses according to attending training courses about antipsychotic medications (n=100).

It is clear from figure (1) that slightly less than two thirds (64%) of the studied nurses did not attend training courses about antipsychotic medications.

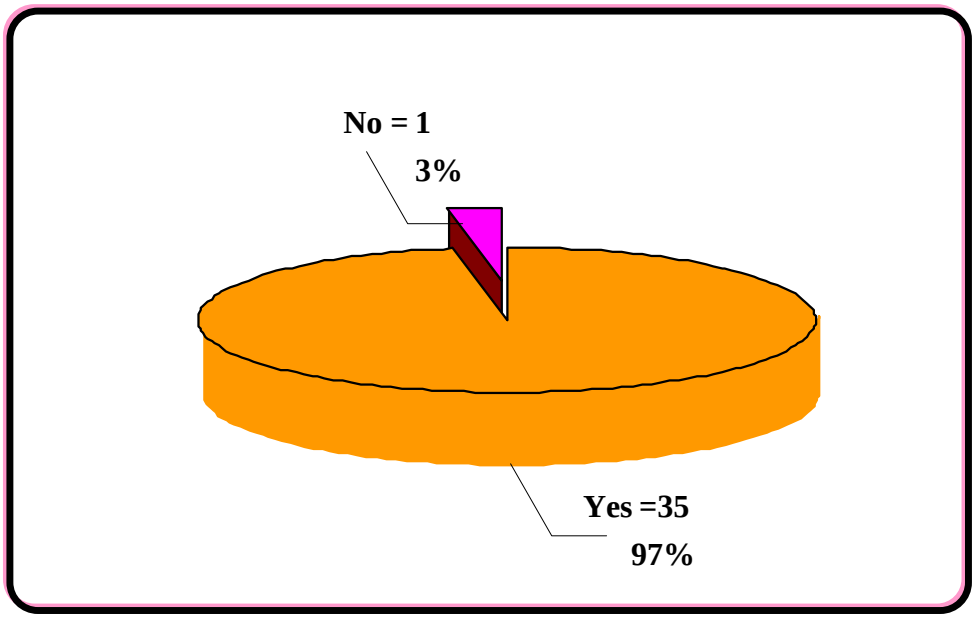

Figure (2):

Benefits from training courses about antipsychotic medications as perceived by the studied nurses (n=36).

It is clear from figure (2) that most (97%) of the studied nurses, who attended training courses about antipsychotic medications benefited and were satisfied from this training courses.

Part II: Nurses` Knowledge about Antipsychotic Medications:

Table (3):

Knowledge about antipsychotic medications in general as mentioned by the studied nurses (n=100).

Items	Yes		No	
	No	%	No	%
1- Antipsychotic medications are called major tranquilizers.	39	39.0	61	61.0
2- Antipsychotic medications are divided into typical and atypical antipsychotic medications.	46	46.0	54	54.0
3- Antipsychotic medications are used for treating mental illness disorders as schizophrenia.	58	58.0	42	42.0
4- Antipsychotic medications are treating symptoms of psychosis not psychotic disorders.	47	47.0	53	53.0
5- Effect of antipsychotic medications begins to work from 3-6 weeks from taking drug.	42	42.0	58	58.0

As regards the studied nurses knowledge about antipsychotic medications, table (3) reveals that, 58%, 47%, and 46% of them mentioned that, antipsychotic medications are used for treating mental illness disorders as schizophrenia, treating symptoms of psychosis not psychotic disorders and they are divided to typical and atypical antipsychotic medications respectively. However, 61% and 58% of them didn't know that antipsychotic medications are called major tranquilizers and their effects begin to work at 3 to 6 weeks from taking drug, respectively.

Table (4):
Knowledge about atypical and typical antipsychotic medications as mentioned by the studied nurses (n=100).

Items	Yes		No	
	No	%	No	%
Atypical antipsychotic medications				
1- Atypical antipsychotics are treating negative and positive symptoms.	51	51.0	49	49.0
2- Atypical antipsychotics give more effect to treat psychosis than typical drugs.	36	36.0	64	64.0
3- Olanzapine shouldn't be taken with meals.	31	31.0	69	69.0
4- Patients starting on Risperidone are susceptible to postural hypotension.	49	49.0	51	51.0
5- Patients who have an initial dysphoric response to medication aren't more likely to adhere to medication.	35	35.0	65	65.0
6- In case of the use of clozapine white blood cells count should be weekly measured.	63	63.0	37	37.0
Typical antipsychotic medications				
1- Typical antipsychotics are treating positive symptoms only.	28	28.0	72	72.0
2- Drugs such as Haldol and Mellaril are given through intramuscular injections.	53	53.0	47	47.0

As regards knowledge about atypical antipsychotic medications table (4) reveals that, 63% of the studied nurses mentioned that in case of the use of Clozapine, white blood cells count should be weekly measured, while 69% of them didn't know that Olanzapine shouldn't be taken with meals.

Concerning knowledge about typical antipsychotic medications table (4) reveals that, 53% of the studied nurses mentioned that drugs such as Haldol and Mellaril are given through intramuscular injections, while 72% of them didn't know that typical antipsychotics are treating positive symptoms only.

Table (5):
Knowledge about names of atypical and typical antipsychotic medications as perceived by the studied nurses (n=100).

Items	Correct Complete		Correct Incomplete		Incorrect	
	No	%	No	%	No	%
1- What are the names of atypical antipsychotic medication	32	32.0	39	39.0	29	29.0
2- What are names of typical antipsychotic medications?	12	12.0	55	55.0	33	33.0

Table (5) reveals that, around two fifths (39%) of studied nurses mentioned correct incomplete answer about names of atypical antipsychotic medications, while, more than half of them (55%) mentioned correct incomplete answer about names of typical antipsychotic medications.

Table (6):
Knowledge about side effects of antipsychotic medications as mentioned by the studied nurses (n=100).

Items	Yes		No	
	No	%	No	%
1-Antipsychotic medications do not lead to relapse.	46	46.0	54	54.0
2-The most important side effects of antipsychotic medications are extra-pyramidal side effects as sever colic, unusual muscle postures and involuntary movements in body and limbs.	75	75.0	25	25.0
3-There is an increased risk of TD with depot typical than oral typical.	35	35.0	65	65.0
4-Local inflammation at the injection site is a rare event.	63	63.0	37	37.0
5-Fear of injection isn't a common reason for patients rejecting depots.	35	35.0	65	65.0
6-From side effects of antipsychotic medications is weight gain.	56	56.0	44	44.0
7-From side effects of antipsychotic medications is occurrence of Diabetes Mellitus.	24	24.0	76	76.0

It is clear from table (6) that, 75% and 63% of studied nurses mentioned that the most important side effects of antipsychotics are extrapyramidal side effects and that local inflammation at the injection site is a rare event respectively, while slightly more than three quarters (76.0%) didn't know that from side effects of antipsychotic medications is occurrence Diabetes Mellitus. However, an equal percentage of 65% of the studied nurses mentioned 'no'' for increased risk of TD with depot typical than oral typical, and fear of injection isn't a common reason for patients rejecting depots.

Table (7):
Knowledge about nursing role in administering antipsychotic medications as perceived by the studied nurses (n=100).

Items	Yes		No	
	No	%	No	%
1-Decrease patient fears before giving drugs and informing about benefits & side effects of treatment.	94	94.0	6	6.0
2- Insure that patient takes medications.	94	94.0	6	6.0
3- Measurement of patient vital signs.	78	78.0	22	22.0
4- Observing side effects on patient.	95	95.0	5	5.0
5- Consulting doctor when observing any complications on patient.	89	89.0	11	11.0
6- In case of patient refusing medication should be notifying doctor.	86	86.0	14	14.0

It is clear from table (7) that**,** most of the studied nurses 95%, 94%, and 94% were aware about their role is observing side effects of patient**,** decreasing patient fears before giving drugs and informing patient about benefits and side effects of treatment**,** and insuring that patient takes medications respectively. However, 22% of them didn't know that from their role is measurement of patient vital signs.

Table (8):
Total score of studied nurses` knowledge about antipsychotic medications (n =100).

Total Score of Nurses` Knowledge					
Poor		**Average**		**Good**	
< 60%		60 - <75%		≥ 75%	
No	%	No	%	No	%
2	2.0	40	40.0	58	58.0

Table (8) reveals that, less than three fifths of the studied nurses (58%) had good knowledge about antipsychotic medications, and 40% had average knowledge about antipsychotic medications, while only 2% of them had poor knowledge about antipsychotic medications.

Part III: Nurses` Attitudes toward Antipsychotic Medications.

Table (9):

Attitudes toward antipsychotic medications in general as perceived by the studied nurses (n =100).

Items	Agree		To Some Extent		Disagree	
	No	%	No	%	No	%
1- Antipsychotic drugs treatment is the most effective way to treat mental illness.	70	70.0	14	14.0	16	16.0
2- Antipsychotic drug treatment carries a high risk of dependency.	10	10.0	31	31.0	59	59.0
3- The benefits of antipsychotic drug treatment far outweigh the risk associated with it.	61	61.0	26	26.0	13	13.0
4-Treatment with antipsychotic medications sedating patient only.	30	30.0	25	25.0	45	45.0
5- In the long run, antipsychotic drugs make patient even more ill than before.	24	24.0	19	19.0	57	57.0
6- Since the introduction of antipsychotic drugs, the duration of stay in psychiatric hospitals has become much shorter.	59	59.0	19	19.0	22	22.0
7- Medication is important in the treatment of psychiatric disorders.	79	79.0	17	17.0	4	4.0
8- Mostly, patients are taking their medications voluntarily.	59	59.0	32	32.0	9	9.0
9- Oftentimes, patients are taking their medications only when they feel sick.	41	41.0	34	34.0	25	25.0
10- Only by staying on medication patients can prevent getting sick.	73	73.0	17	17.0	10	10.0

Table (9) shows that, 79 % and 73 % of the studied nurses agree that medication is important in the treatment of psychiatric disorders, and that only by staying on medication patients can prevent getting sick respectively. However, 59% and 57% disagree that antipsychotic drug treatment carries a high risk of dependency; and that in the long run, antipsychotic drugs make patient even more ill than before, respectively.

Table (10):
Attitudes toward advantages and disadvantages of depot antipsychotic medications as perceived by the studied nurses (n =100).

Items	Agree		To Some Extent		Disagree	
	No	%	No	%	No	%
Advantages						
1- Depot antipsychotics have more advantages than disadvantages.	63	63.0	25	25.0	12	12.0
2- Depot antipsychotics have more advantages than oral formulations.	61	61.0	27	27.0	12	12.0
3- Depot antipsychotics provide more security to the patient than do oral antipsychotics.	31	31.0	36	36.0	33	33.0
4- With oral medication, it is more likely that patients will forget to take their tablets.	61	61.0	27	27.0	12	12.0
Disadvantages						
1- Depot antipsychotics are more stigmatizing to the patient.	42	42.0	20	20.0	38	38.0
2- Depot antipsychotics constrict the patient's freedom and autonomy.	37	37.0	20	20.0	43	43.0
3- Oral antipsychotics constrict the patient's freedom and autonomy.	29	29.0	32	32.0	39	39.0
4- Depot antipsychotics induce more side effects than oral antipsychotics.	40	40.0	29	29.0	31	31.0

It is clear from table (10) that, 63%, 61% and 61% of the studied nurses agree that depot antipsychotics have more advantages than disadvantages, have more advantages than oral formulations, and with oral medication it is more likely that patients will forget to take their tablets, respectively. However one third (33%) disagree that depot antipsychotics provide more security to the patient than do oral antipsychotics.

In addition, 42% and 40% of studied nurses agree that depot antipsychotics are more stigmatizing to the patient and induce more side effects than oral antipsychotics, respectively, while 43% of them disagree about depot antipsychotics constrict the patient's freedom and autonomy.

Table (11):
Total score of studied nurses` attitudes toward antipsychotic medications (n =100).

Total Score of Nurses` Attitudes					
Negative		**Neutral**		**Positive**	
< 50 %		50 - 65%		≥ 65 %	
No	%	No	%	No	%
40	40.0	46	46.0	14	14.0

Table (11) reveals that, 46% of the studied nurses had neutral attitudes toward antipsychotic medications, while 40% of them had negative attitudes, and only 14% had positive attitudes toward antipsychotic medications

Part IV: Difficulty implementing adherence Strategies:

Table (12):

Difficulty implementing adherence strategies (information/ education subscale) as perceived by the studied nurses (n=100).

A- Information & Education Subscale	Always		Often		Sometime		Never	
	No	%	No	%	No	%	No	%
1-Discussing the way medication works with the patient.	40	40.0	22	22.0	28	28.0	10	10.0
2-Giving the patient written information regarding to the medication he/she is prescribed.	29	29.0	21	21.0	34	34.0	16	16.0
3-Discussing with the patient confusion between symptoms of disease and side effects of medication.	47	47.0	25	25.0	16	16.0	12	12.0
4-Undertaking group education about medication with the patients and their family/carers.	38	38.0	24	24.0	25	25.0	13	13.0
5-Discussing the side effects of medication with the patient.	41	41.0	30	30.0	24	24.0	5	5.0
6-Discussing side effects of the medication with the family/carers of the patient.	45	45.0	29	29.0	20	20.0	6	6.0
7-Discussing the way medication works with the family/carers of the patient.	51	51.0	26	26.0	13	13.0	10	10.0
8-Giving the family/carers of the patient written information about medication.	41	41.0	30	30.0	19	19.0	10	10.0

As regards difficulty implementing adherence strategies (information & education subscale) table (12) reveals that 51% and 47% of the studied nurses reported that, they always have difficulty about discussing the way medication works with the family/carers of the patient, and discussing with the patient confusion between symptoms of disease and side effects of medication respectively. However, 16% and 13% of the studied nurses never have difficulty to give the patient written information regarding to the medication he/she is prescribed, and to undertake group education about medication with the patients and their family/carers, respectively.

Table (13):
Difficulty implementing adherence strategies (behavioral subscale) as perceived by the studied nurses (n =100).

B- Behavioral Subscale	Always		Often		Sometimes		Never	
	No	%	No	%	No	%	No	%
1-Praising patient, even if they only took some of their medication.	34	34.0	24	24.0	30	30.0	12	12.0
2- Checking to see if the patient has a regular or routine pattern of activity during the day.	44	44.0	37	37.0	16	16.0	3	3.0
3-Getting the patient to keep a record of when he/she takes his/her medication.	19	19.0	31	31.0	22	22.0	38	38.0
4-Praising the patient for taking their medication	34	34.0	33	33.0	27	27.0	6	6.0
5-Having the patient praise themselves for taking their medication.	50	50.0	31	31.0	16	16.0	3	3.0
6-Having the patient associate taking their medication with their daily routine (e.g., breakfast or tooth brushing).	51	51.0	31	31.0	16	16.0	2	2.0
7-Repeating the medication regimen to the patient then having them repeat them back to you.	36	36.0	24	24.0	21	21.0	19	19.0
8-Getting the patient to post reminders to take their medication in prominent places in their home.	31	31.0	27	27.0	30	30.0	12	12.0

As regards difficulty implementing adherence strategies (behavioral subscale), table (13) reveals that 51% and 50% of the studied nurses reported that they always have difficulty to have patient associate to taking their medication with their daily routine and allow patient to praise themselves for taking their medication respectively, while 38% of them they never have difficulty to get the patient to keep a record of when he/she takes his/her medication.

Table (14 a**):**

Difficulty implementing adherence strategies (cognitive & motivational subscale) as perceived by the studied nurses (n=100).

C- Cognitive & Motivational Subscale.	Always		Often		Sometimes		Never	
	N	%	N	%	N	%	N	%
1-Dispelling myths about medication with the patient.	52	52.0	24	24.0	15	15.0	9	9.0
2-Asking the patient what they expect from medication and from nurse as a mental health worker.	35	35.0	24	24.0	27	27.0	14	14.0
3-Discussing with the patient about his/her attitude towards taking the medication.	41	41.0	22	22.0	23	23.0	14	14.0
4-Discussing with the patient about the good and not so good things about medication.	42	42.0	25	25.0	14	14.0	19	19.0
5-Discussing with the patient the link between disruptions in their life and the need to take medication.	38	38.0	28	28.0	30	30.0	4	4.0
6-Discussing with the patient (pt's with insight) what they think is wrong with them.	39	39.0	30	30.0	29	29.0	2	2.0
7-Discussing with the patient the link between ceasing medication and becoming unwell.	41	41.0	38	38.0	18	18.0	3	3.0
8-Having a written agreement from the patient about taking his/her medication.	49	49.0	24	24.0	18	18.0	9	9.0
9-Indicating to the patient the common misgivings about taking medication.	43	43.0	30	30.0	22	22.0	5	5.0

Table (14b): (continued).

Cognitive & Motivational Subscale.	Always		Often		Some times		Never	
	No	%	No	%	No	%	No	%
10-Emphasizing to the patient the threat of illness because of not taking medication.	62	62.0	22	22.0	11	11.0	5	5.0
11-Discussing with the patient their worries or concerns about their illness.	42	42.0	26	26.0	26	26.0	6	6.0
12-Providing the patient with examples of famous people who have had to take medication.	44	44.0	23	23.0	25	25.0	8	8.0
13-Discussing with the patient how the need for medication in mental illness is like the need for medication in physical illness.	53	53.0	21	21.0	22	22.0	4	4.0
14-Engaging the patient in counseling around medication compliance issues.	46	46.0	5	5.0	26	26.0	28	28.0
15-Discussing with the patient the meaning medication has for them.	47	47.0	28	28.0	20	20.0	5	5.0

Tables (14a &14b) reveal that, 62% of the studied nurses always are having difficulty about emphasizing to the patient the threat of illness because of not taking medication, while 38% of them often are having difficulty about discussing with the patients the link between ceasing medication and becoming unwell. Moreover, 28 % of the studied nurses never engage the patient in counseling around medication compliance issues.

Table (15):
Total score of the studied nurses` about difficulty implementing adherence strategies (n =100).

Total Score of Difficulty Implementing Adherence Strategies					
Mild		**Moderate**		**High**	
<50 %		50 - 65%		≥ 65 %	
No	%	No	%	No	%
6	6.0	16	16.0	78.0	78.0

Table (15) reveals that, more than three quarters (78%) of the studied nurses had high difficulty for implementing adherence strategies, while 16% of them had moderate difficulty for using the strategies, and only 6% of the studied nurses had mild difficulty for using the strategies.

Part (V): Comparison between Socio-demographic Characteristics, with Total Knowledge and Total Attitudes:

Table (16):

Comparison between socio-demographic characteristics of the studied nurses and total knowledge about antipsychotic medications.

Socio-demographic Characteristics		Total Knowledge
Age (in years)		**Mean ±SD**
20-		41.943 ± 4.361
30-		42.939 ± 3.640
40-		43.385 ± 4.805
50+		53.000 ± 0.000
ANOVA	F-test	2.703
	P-value	< 0.05*
Education		**Mean ±SD**
Diploma of nursing		42.782 ± 4.05
Health technical institute		47 ± 3.464
Bachelor of nursing		41± 4.922
ANOVA	F-test	3.074
	P-value	< 0.05*
Occupation		**Mean ±SD**
Nurse		42.753 ± 4.014
Department supervisor		41.105 ± 5.152
Vice nursing		46.667 ± 4.163
ANOVA	F-test	2.589
	P-value	< 0.05*

* Significant (p< 0.05).

As regards comparison between socio-demographic characteristics of the studied nurses and their total knowledge table (16) reveals that, statistically significant relations were found between age, education, and occupation of the studied nurses` and their total knowledge at p value (< 0.05).

Table (17):

Comparison between socio-demographic characteristics of the studied nurses` and total attitudes toward antipsychotic medications.

Socio-demographic Characteristics		**Total Attitudes**
Age (in years)		**Mean ±SD**
20-		18.717 ± 4.059
30-		19.606 ± 3.944
40-		18.53 ± 84.196
50+		20.000 ± 0.000
ANOVA	F-test	0.411
	P-value	> 0.05(NS)
Education		**Mean ±SD**
Diploma of nursing		18.833 ± 4.182
Health technical institute		20.667± 3.215
Bachelor of nursing		19.421± 3.372
ANOVA	F-test	0.428
	P-value	> 0.05(NS)
Occupation		**Mean ±SD**
Nurse		18.987 ± 4.121
Department supervisor		18.263 ± 3.429
Vice nursing		21.667± 1.155
ANOVA	F-test	0.994
	P-value	> 0.05(NS)

NS = Not Significant (P> 0.05).

As regards comparison between socio-demographic characteristics of the studied nurses and total attitudes, table (17) reveals that, no statistically significant relations were found between age, education, and occupation of the studied nurses and their total attitudes at p value (> 0.05).

Table (18):

Comparison between total knowledge and total attitudes of studied nurses attended and not attended training courses about antipsychotic medications.

Items	Studied nurses according to attending training courses about antipsychotic medication			
	Yes	No	T-test	
	Mean ± SD	Mean ± SD	T	P-value
Total knowledge	43.667 ± 3.780	41.953 ± 4.481	1.938	< 0.05*
Total attitudes	18.194 ± 3.512	19.453 ± 4.212	-1.519	> 0.05(NS)

* Significant (p< 0.05); NS = Not significant (P> 0.05).

As regards comparison between total knowledge and total attitudes of studied nurses attended and not attended training courses about antipsychotic medications, table (18) reveals that, statistically significant relations were found between studied nurses attend training courses and their total knowledge at p value (< 0.05), while no statistically significant relations between total attitudes at p value (> 0.05).

Part (VI): Correlation between total knowledge and total attitudes with total difficulty implementing adherence strategies:

Table (19):
Correlation between total knowledge and total attitudes with total difficulty implementing adherence strategies.

Items	Total knowledge		Total attitudes	
	r-test	P-value	r-test	P-value
Total of difficulty implementing adherence strategies	0.218	< 0.05*	-0.058	>0.05(NS)

* Significant (p< 0.05); NS = Not significant (P> 0.05).

Table (19) shows that, statistically significant positive correlation was found between total knowledge and total of difficulty implementing adherence strategies with r = 0.218 at p value <0.05. However, there was no statistically significant correlation between total attitudes and total difficulty implementing adherence strategies with r = -0.058 at p-value (> 0.05).