

## RESULTS

**The results of this study are presented in the following parts;**

**Part I:** Sociodemographic characteristics of the studied sample, their parents, medical & menstrual history (tables 1-5).

**Part II:** Student's knowledge about premarital counseling, reproductive health, pregnancy and labor, family planning, female genital mutilation, good diet, and self breast examination (Tables 6-13).

**Part III:** The student's level knowledge about premarital counseling, the relation of adequacy level of knowledge and their sociodemographic characteristics (Tables 14-15).

**Table (1): Distribution of studied sample according to their socio economic characteristics      No= 300**

<b>Characteristics</b>	<b>No</b>	<b>%</b>
<b>Age:</b>		
17-	235	78.4
18- 20	65	21.6
<b>Residence:</b>		
- Urban	67	22.4
- Rural	233	77.6
<b>Marital status</b>		
- Engaged	57	19
- Single	243	81
<b>Degree of relatives (No=20):</b>		
- Degree 1	8	2.6
- Degree 2	10	3.3
- Degree 3	2	0.6
<b>Family size:</b>		
2-	27	9.0
3-	48	15.6
5-	225	75.4
<b>Monthly family income:</b>		
- Sufficient	132	44.0
- Insufficient	168	56.0
<b>Type of home:</b>		
- Separated	270	90.0
- Shared	30	10.0
<b>Media apparatus (T.V. radio, dish, comp)</b>		
- All	134	44.6
- Some of them	166	55.4

Table (1) shows that the distribution of students by socioeconomic characteristics. According to the table 78.4% of the students aged 17-18 years and 21.6% of them aged 18-20 years, also 77.6% of them came from rural area, and about one quarter (22.4%) were from urban. The table revealed that 81.0% of the sample were single, 19 % were engaged, and 2.6% of them engaged to first degree relatives. The Table indicated that 75.4% Of the student their family size composed from 5-7members, and 56.0% of the subjects had had insufficient family income, and 90.0%of them lived in separated house. Also 55.4% of them had T.V, Radio, dish and computer at their home.

**Table (2): Distribution of studied sample's parents by their personnel characteristic& social class. No = 300**

<i>Character</i>	<i>No</i>	<i>%</i>
<b><i>Father education :</i></b>		
- Illiterate	40	13.4
- Basic	98	32.6
- Secondary	122	40.6
- University	40	13.4
<b><i>Father occupation:</i></b>		
- Manual	93	31.0
- Clerical	72	24.0
- Professional	135	45.0
<b><i>Mother education</i></b>		
- Illiterate	76	25.4
- Basic	139	46.4
- Secondary	56	18.6
- University	29	9.6
<b><i>Mother occupation (job):</i></b>		
- Working	77	25.6
- House wife	223	74.4
<b><i>Social class:</i></b>		
- High	14	4.7
- Moderate	58	19.3
- Low	228	76.0

Table (2) Demonstrated that 40.6% of fathers had secondary level of education, 45% of them practice professional job. Also the table reveals that 46.4% of the student's mother had basic education, and 74.4% of them were housewives, and 76% of their parents belonged to low social class.

**Table (3): Distribution of studied sample by their medical history****No = 300**

<i>Student's health problems</i>	<i>No</i>	<i>%</i>
<i>No. of students with health problems (56):</i>		
- Diabetes mellitus	6	2.0
- Other health problems	30	10.0
- Surgical (operations)	20	6.7

***Other health problems: Hypertension, anemia, and kidney disease***

Table (3) Illustrated that 2% of the sample had Diabetes Mellitus, 6.7% had past surgical operation, and 10% of them had other health problems.

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**Table (4): Distribution of studied sample regarding their menstrual history      No= 300**

<i>Variables</i>	<i>No</i>	<i>%</i>
<b><i>Age of Menarche:</i></b>		
- 9 -	42	14.2
- 12 -	240	80.0
- 15- 17	18	5.8
<b><i>Menstrual complains</i></b>	149	49.3
<b><i>Vaginal problems</i></b>	135	45.0

Table (4) distribution of studied sample by their menstrual history the table illustrated that 80% of the sample their age at menarche was 12-15 years and 49.3% complains of some menstrual problems in addition 45% suffered from vaginal problems.

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**Table (5): Distribution of studied sample by their family medical history (Health problems) No = 300**

<i>Variables (Health problems)</i>	<i>No</i>	<i>%</i>
<b><i>Family health problems (157):</i></b>		
- Anemia	57	19.0
- Hypertension	38	12.7
- Diabetes mellitus	47	15.7
- Other health problems	13	4.3
- Mental retardation	2	0.6

***Other health problems: heart disease, kidney disease, and hemophilia.***

Table (5) indicated the student's family health problems as mentioned by the studied subjected were anemia, hypertension and diabetes mellitus (19%, 12.7% and 15.7% respectively). Also few of them complain from other health problems and mental retardation. (4.3%, 0.6% respectively).

**Table (6): Distribution of the studied sample by their knowledge about premarital counseling No = 300**

Items	Nursing education No=150				Commercial education No=75				Industrial education No=75				Z	P
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<b>1-Definition of premarital Counseling</b>														
-Complete answer	11	7.4	107	71.4	0	0	5	6.7	0	0	2	2.6	9.11	<0.001
-Incomplete answer	58	38.6	37	24.6	8.0	10.6	57	76.0	4.0	5.4	55	73.4	5.34	<0.001
-Wrong answer or don't know	81	54.0	6.0	4.0	6.7	89.4	13	17.4	71	94.6	18	24.0	11.2	<0.001
<b>2-Importance of premarital Counseling</b>														
-Complete answer	2	1.4	102	68.0	0	0.0	3	4.0	0	0.0	1	1.4	10	<0.001
-Incomplete answer	74	49.3	40	26.0	3	4.0	53	70.6	6	8.0	62	82.6	4.78	<0.001
-Wrong answer or don't know	74	49.3	8	6.0	72	96.0	19	25.4	69	92.0	12	16.0	11	<0.001
<b>3-Services provided in premarital counseling</b>														
-Complete answer	1	0.6	102	68.0	0	0.0	0	0.0	0	0.0	1	1.4	9.95	<0.001
-incomplete answer	66	44.0	40	26.6	24	32.0	56	74.6	15	20.0	62	82.6	3.78	<0.001
-Wrong or don't know	83	55.4	8	5.4	51	68.0	19	25.4	60	80.0	12	16.0	12.5	<0.001
<b>4-Investigationsin premarital counseling</b>														
-Complete answer	5	3.4	110	73.3	0	0	7	9.4	0	0	0	0	10.1	<0.001
-Incomplete answer	78	52.0	35	23.3	17	22.6	59	78.6	3	4.0	55	73.4	3.25	<0.001
-Wrong answer or don't know	67	44.6	5	3.4	58	77.4	9	12.0	72	96.0	20	26.6	10.7	<0.001
<b>5- Settings of premarital Counseling</b>														
-Complete answer	3	2.0	105	70.0	0	0.0	3	4.0	0	0.0	1	1.4	9.94	<0.001
-In complete answer	83	55.4	37	24.0	4	5.4	56	74.6	3	4.0	61	81.3	4.15	<0.001
-Wrong answer or don't know	64	42.6	8	6.0	71	94.6	16	21.4	72	96.0	13	17.3	10.9	<0.001
<b>6-Components of premarital Counseling</b>														
-Complete answer	5	3.4	89	59.4	0	0.0	3	4.0	0	0.0	0	0.0	8.83	<0.001
-Incomplete answer	81	54.0	55	36.6	8	10.6	61	81.4	3	4.0	57	76.0	4.98	<0.001
-Wrong answer or don't know	64	42.6	6	4.0	67	89.4	11	14.6	72	96.0	18	24.0	10.9	<0.001

Table 6 illustrated the studied sample knowledge about premarital counseling. The table revealed that nearly none of the study subjects reported correct answers about all items of premarital counseling before distribution the instruction guide line about the premarital counseling. But after dissemination the booklets the student's nurse had better knowledge than both commercial and industrial students. As regard definition of premarital counseling 71.4% of student's nurse, reported correct answers and 24.6% of them reported incomplete correct answers while few of commercial students gave complete correct answers (6.6%), and 73.4% of industrial are reported incomplete answer, As regarded the important of premarital counseling 86% of the student nurse reported complete correct answer compared to 70.6% of commercial school student and 82.6% of those belonged to industrial school reported incomplete answers. Concerned services provided during premarital counseling 68% of the student nurse reported complete answers compared to 74.6% and 82.6% of both commercial and industrial students reported incomplete correct answer. Also 73.3% of nurse students reported complete answers about the investigation done for couple before marriage compared 78.6% and 73.4% of both commercial and industrial students mentioned incomplete correct answers. As regard places provided premarital counseling 70% of student nurse mentioned complete correct answer compared to 74.6% and 81.3% of both commercial and industrial students reported incomplete correct answers. Concerned settings that offer premarital services 70% of nurse students reported complete answers compared to 74.6% and 81.3% of both commercial and industrial students mentioned incomplete answers. On the other hand 59.4% of student's nurse gave complete

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answers about the components of premarital counseling and 36.6% mentioned incomplete answers. Compared to 81.4% of commercial students and 76% of industrial students reported incomplete answers. The finding of all items of premarital counseling between pre and post instruction guide line distribution were statistically significance  $P < 0.001$ .

**Table (7) Distribution of the studied subject by their knowledge about target group, hazards & present low for premarital counseling. No= 300**

Students, answers	Nursing education. (150)				Commercial education.(75)				Industrial education (75)				Z	P - Value
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<b><i>Target needs premarital Counseling</i></b>														
-Complete answer	42	28.0	125	83.4	2	2.6	20	26.6	0	0	5	6.6	7.61	<0.05
-Incomplete answer	82	54.6	24	16.0	24	32.0	53	70.8	7	9.4	60	80.0	1.52	<0.05
-Wrong answer or don't know	26	17.4	1	0.6	49	65.4	2	2.6	68	90.6	10	13.4	10.4	<0.05
<b><i>Hazard Of consequences marriage:</i></b>														
-Complete answer	33	22.0	123	82.0	2	2.6	18	24	0	0	1	1.4	8.04	<0.001
-Incomplete answer	89	59.4	25	16.6	26	34.6	55	73.4	5	6.6	62	82.6	1.36	<0.05
-wrong answer or don't know	28	18.6	2	1.4	47	62.8	2	2.6	70	93.4	12	16.0	10.2	<0.001
<b><i>Presence of a low for Premarital Counseling</i></b>														
-Yes	53	35.4	130	86.6	15	20.0	62	82.6	7	9.4	62	82.6	9.87	<0.001
-No	97	64.6	20	13.4	60	80.0	13	17.4	68	90.6	13	17.4	10.9	<0.001

Table 7 illustrated the studied sample knowledge about target and present low for premarital counseling in Egypt, the table revealed that nearly none of the study subjects reported correct answers about all items of premarital counseling target pre distribution the instruction guide line about the premarital counseling. But after dissemination the booklets the student's nurse had better knowledge them both commercial and industrial students. As regard target group that need premarital counseling 83.4% of nurse's students had complete answers while few of commercial and industrial gave complete correct answers (26.6% and 6.6% respectively) and 70.6% of commercial students and 80% of industrial one reported incomplete answers. Concerned hazards of marriage of relatives 82% of the student nurse reported complete answers compared to 73.4% and 82.6% of both commercial and industrial students reported incomplete answers. Also 86.6% of nurse's students reported right answer about presence of premarital low in Egypt compared to 82.6% and 82.6% of both commercial an industrial students reported right answer. The finding of all items of premarital counseling between before and after instruction guide line distribution were statistically significance  $P < 0.001$ ,  $P < 0.05$

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**Figure (1) Sources of information about premarital counseling among the studied students:**

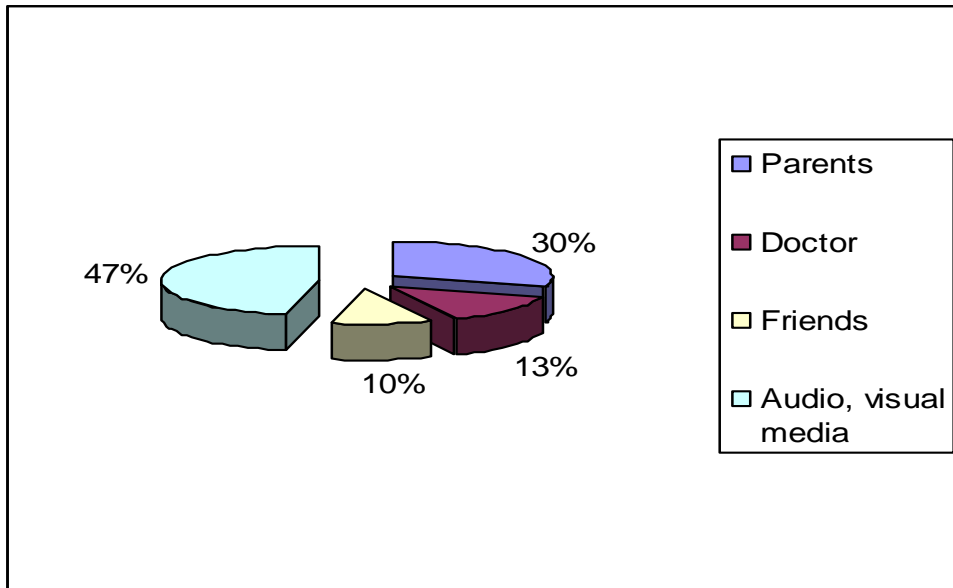


Figure 1 displays the main source of students knowledge about premarital counseling was; mass media (47%) followed by parents 30%, and lastly doctors and friends (13%, and 10% respectively).

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**Table (8): Distribution of the studied sample knowledge about reproductive organs No = 300**

Group education items	Nursing education (150)				Commercial ed. (75)				Industrial (75)				Z	P
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<b><i>Reproductive male organs:</i></b>														
-Complete answer	125	83.4	145	96.6	5	6.6	9	2.0	1	1.4	0	0	1.36	<0.001
-Incomplete answer	20	13.3	2	1.4	11	14.6	55	73.4	3	4.0	59	78.6	6.7	<0.001
-Wrong answer or don't know	5	3.3	3	2	59	78.6	11	14.6	71	94.6	16	21.4	8.17	<0.001
<b><i>Female organs</i></b>														
-Complete answer	98	65.3	145	96.6	0	0	5	6.6	2	2.6	5	6.6	3.58	<0.001
-Incomplete answer	44	29.3	3	2.0	18	24.0	64	85.4	3	4.0	53	70.8	4.42	<0.001
-Wrong answer	8	5.4	2	1.4	57	76.0	6	8.0	70	93.4	17	22.6	9.16	<0.001
<b><i>Source of menses blood</i></b>														
-Correct answer	105	70.0	140	93.4	8	10.6	25	33.4	15	20.0	30	40.0	8.87	<0.001
-Incorrect answer	45	30.01	10	6.6	67	89.4	50	66.6	60	80.0	45	60.0	4.98	<0.001
<b><i>The cause of menstruation</i></b>														
-Correct answer	125	83.4	145	96.6	1	1.4	61	81.4	1	1.4	62	82.6	7.09	<0.00
-Incorrect answer	25	16.6	5	3.4	74	98.6	14	8.6	74	98.6	13	7.4	9.85	<0.001

Continued Table (8): Distribution of the studied sample knowledge about reproductive organs No = 300

Group education items	Nursing education (150)				Commercial ed. (75)				Industrial (75)				Z	P
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<i>Time of ovum excreted</i>														
-Correct answer	65	43.4	142	94.6	5	6.6	55	73.4	4	5.4	48	64.0	8.08	<0.001
-Incorrect answer	85	56.6	8	5.4	70	93.4	20	26.6	71	94.6	27	36.0	12.6	<0.001
<i>Duration of ovum still ready for fertilize:</i>														
-Correct answer	67	44.6	143	95.4	4	5.4	62	82.6	9	12.0	60	80.0	9.96	<0.00
-Incorrect answer	83	55.4	7	4.6	71	94.6	13	7.4	66	88.0	15	20.0	11.6	<0.00
<i>Signs&amp; symptoms of ovulation</i>														
-Complete answer	75	50.0	136	90.6	6	8.0	30	40.0	0	0.0	7	9.4	5.77	<0.00
-Incomplete answer	39	26.0	6	4.0	1	1.4	35	46.6	0	0.0	54	72.0	6.99	<0.00
-wrong answer or don't know	36	24.0	8	5.4	68	90.6	10	13.4	75	100.0	14	18.6	11.0	<0.001
<i>Days of ovulation</i>														
-Correct answer	70	47.6	136	90.6	5	6.6	66	88.0	1	1.4	56	74.6	9.96	<0.001
-Incorrect answer	80	53.4	14	9.4	70	93.4	9	12.0	74	98.6	19	25.4	14.0	<0.001
<i>Duration of Sperm still ready to fertilize the ovum:</i>														
-Correct answer	46	30.6	142	94.6	2	2.6	63	84.0	0	0.0	60	80.0	12.3	<0.001
-Incorrect answer	104	69.4	8	5.4	73	97.4	12	16.0	75	100.0	15	20.0	12.8	<0.001

Table 8 illustrated the studied sample knowledge about reproductive organs. The table revealed that nearly none of the study subjects reported correct answers about all items of reproductive organs before distribution the instruction guide line about the premarital counseling. But after dissemination the booklets the student's nurse had better knowledge than both commercial and industrial students. As regard male reproductive organs, 96.6% of student nurse reported correct answers, while few of commercial and industrial students gave complete correct answers (2.0%, and 1.4% respectively) and 73.4% and 78.6% of them reported incomplete answer. On the other hand 96.6% of the studied nurse mentioned correct answers and 2% incomplete answer about female reproductive organs, compared to 85.4% of commercial school reported incomplete answers. Concerned from their knowledge about the source of menses blood 93.4% of the student nurse reported correct answer compared to 33.4% and 40 % of both commercial and industrial student reported correct answers. Also 96.6% of student nurse reported correct answer about causes of menstruation compared to 81.4% and 82.6% of both commercial and industrial students reported correct answers. Also 94.6% of nurse's students reported correct answer about when the ovum excreted compared 73.4% and 64% of both commercial and industrial students mentioned correct answers. As regard duration of ovum still ready for fertilize, 94.6% of student's nurse mentioned correct answers compared to 82.6% and 80% of commercial and industrial students reported correct answers. On the other hand 90.6% of the student's nurse mentioned correct answers about signs and symptoms of ovulation compared to 46.6% and 72% of commercial and industrial students reported incomplete answers. As

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regard the number of days of the ovulation 90.6% of nurse's students reported correct answers compared to 88% and 74.6% of both commercial and industrial students mentioned correct answers. Concerned the days still the sperm ready to fertilize the ovum 94.6% of nurse students reported correct answers. Also 84% and 80% of both commercial and industrial students mentioned correct answers. The findings of all items of reproductive organs between before and after instruction guideline distribution were statistically significance  $P < 0.001$

**Table (9): Distribution of the studied sample by their knowledge about pregnancy No = 300**

Knowledge	Nursing (150)				Commercial (75)				Industrial(75)				Z	P - Value
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<b><i>Proper age of reproduction.</i></b>														
- Correct answer	96	64.0	127	84.6	2	2.6	66	88.0	5	6.6	63	83.4	9.35	<0.001
- Incorrect answer	54	36.0	23	15.4	73	97.4	9	12.0	70	93.4	12	6.6	10.8	<0.001
<b><i>Hazards of early pregnancy</i></b>														
- Complete answer	15	10.0	99	66.0	0	0	0	0	0	0	0	0		<0.001
- Incomplete answer	75	50.0	48	32.0	2	2.6	65	86.6	1	1.4	57	76.0	5.92	<0.001
- Wrong answer or don't know	60	40.0	3	2.0	73	97.4	10	13.4	74	98.6	18	24.0	12	<0.001
<b><i>Causes of mother mortality</i></b>														
- Complete answer	0	0	93	62.0	0	0	5	6.6	0	0	3	4.0		<0.001
- Incomplete answer	47	31.4	48	32.0	5	6.6	57	76.0	5	6.6	54	72.0	6.94	<0.001
- Wrong answer or don't know	103	68.6	9	16.0	70	93.4	13	17.4	70	93.4	18	24.0	12.1	<0.001
<b><i>Space between pregnancy and other.</i></b>														
- Know	103	68.6	142	94.6	9	12.0	57	76.0	11	14.6	63	84.0	10.38	<0.05
- Don't know	47	31.4	8	5.4	66	88	18	24.0	64	85.4	12	16	2.43	<0.05

Table (9) illustrated the studied sample knowledge about pregnancy. the table displays that nearly none of the study subjects reported correct answers about all items of pregnancy before distribution the instruction guide line about pregnancy. But after dissemination the booklets the student's nurse had better knowledge than both commercial and industrial students. As regard proper age of reproduction 84.6% of the student's nurse reported complete answers, compared to 88% and 83.4% of both commercial students and industrial students were gave right answers. On the other hand 66% of the student's nurse mentioned complete answers about the hazards of early pregnancy compared to 86.6% of commercial students and 76% of industrial students reported incomplete answers. Concerned causes of mothers' mortality 62% of the students nurse reported complete answers compared to 76% and 72% of both commercial and industrial students reported incomplete correct answers. Also 94.6% of nurses students reported that they know the proper space between pregnancy compared to 76% and 84% of both commercial and industrial students mentioned that they know the proper space between pregnancies. The findings of all items of pregnancy between before and after instruction guideline distribution were statistically significance  $P < 0.001$  &  $P < 0.05$

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**Table (10) distribution of the studied subject by there types of school and their knowledge about care given to pregnant women throughout maternity cycle. No=300**

Knowledge	Nursing (150)				Commercial (75)				Industrial				Z	P - Value
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<b>1-Antenatal care</b>														
-Complete answer	8	9.4	109	72.6	0	0	2	2.6	0	0	1	1.4	9.49	<0.001
-Incomplete answer	94	62.6	37	24.0	3	4.0	63	84.0	2	2.6	54	72.0	3.46	<0.001
-Wrong answer or don't know	48	28.0	4	2.6	72	96.0	10	13.3	73	97.4	20	26.6	10.6	<0.001
<b>2-Natal care</b>														
- Complete answer	6	4.0	110	73.0	0	0	5	6.6	0	0	0	0	9.91	<0.001
- Incomplete answer	72	48.0	35	23.4	9	12.0	57	76.0	1	5.4	55	73.4	4.3	<0.001
-Wrong answer or don't know	72	48.0	5	3.6	66	88.0	13	17.4	74	94.6	20	26.6	11.9	<0.001
<b>3-Postnatal care</b>														
- Complete answer	6	4.0	108	72.0	0	0	3	4.0	0	0	1	1.4	9.76	<0.001
- Incomplete answer	74	49.4	36	24.0	6	8.0	60	80.0	1	1.4	50	66.6	4.31	<0.001
- Wrong answer or don't know	70	46.6	6	4.0	69	92.0	12	16.0	74	98.6	24	32.0	107	<0.001
<b>4- Benefits of breast feeding</b>														
- Complete answer	15	10.0	105	70.0	0	0	5	6.6	0	0	1	1.4	10.4	<0.001
- Incomplete answer	78	52.0	41	29.4	22	29.4	64	85.4	11	14.6	63	84.0	3.22	<0.001
- Wrong answer or don't know	57	38.0	4	2.6	53	70.6	6	8.0	64	85.4	11	14.6	11.4	<0.001

Table 10 shows the studied sample knowledge about care given to pregnant women throughout maternity cycle. The table revealed that nearly none of the study subjects reported correct answers about all items of care given to pregnant women throughout maternity cycle before distribution the instruction guide line about care given to pregnant women throughout maternity cycle. But after dissemination the booklets the student's nurse had better knowledge than both commercial and industrial students. As regard antenatal care 72.6% of students nurse reported complete answers, compared to 84% and 72% of both commercial students and industrial students reported incomplete answers, also 73% of nurse's students mentioned complete answers and 23.6% of them reported incomplete answers about natal care while 76% of commercial students and 73.4% of industrial students gave incomplete answers. Concerned postnatal care 72% of student's nurse reported complete answers compared to 80% and 66.6% of both commercial and industrial students reported incomplete answers. On the other hand 70% of the student's nurse gave complete answers about breast feeding and 29.4% of them reported incomplete answers, compared to 85.4% of commercial students and 84% of industrial students mentioned incomplete answers. The findings of all items of care given to pregnant women throughout maternity cycle between before and after instruction guideline distribution were statistically significance  $P < 0.001$

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**Table (11): Distribution of the studied sample knowledge about family planning N = 300**

Knowledge	Nursing (150)				Commercial (75)				Industrial (75)				Z	P
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<i>Methods of contraceptives</i>														
- Complete answer	4	3.6	115	76.6	0	0	7	9.4	0	0	2	2.6	10.6	<0.001
- Incomplete answer	73	48.6	32	21.4	18	24.0	64	85.3	4	5.4	62	82.6	3.96	<0.001
-Wrong answer or don't know	73	48.6	3	2.0	57	76.0	4	5.3	71	94.6	11	14.6	12.4	<0.001

Table 11 illustrated the studied sample knowledge about family planning. The table indicated that nearly none of the study subjects reported correct answers about all items of methods of contraception before distribution the instruction guide line about the methods of contraception. But after dissemination the booklets the student's nurse had better knowledge both commercial and industrial students. As regard methods of contraceptives 76.6% of the nurse students reported complete answers, and 21.4+% of them had incomplete answers, while few of commercial and industrial students gave complete correct answers (9.4% and 2.6% respectively) and 85.3% of commercial students and 82.6% of industrial students reported incomplete answers. The finding of all items of methods of contraception between before and after instruction guide line distribution were statistically significance  $P < 0.001$

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**Figure (2) sources of knowledge about family planning among the studied students**  
**No =300**

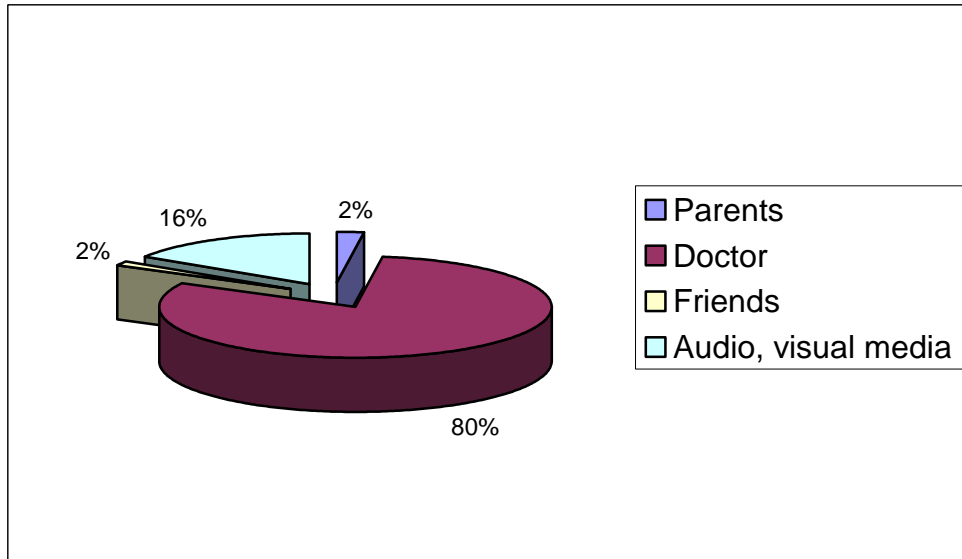


Figure 2 indicated that the main source of students knowledge about family planning was Doctors (80%) followed by Audio, visual media (16%), and lastly parents and friends (2% and 2% respectively).

**Figure (3) Distribution of correct knowledge about female genital mutilation among the student subjects No=300**

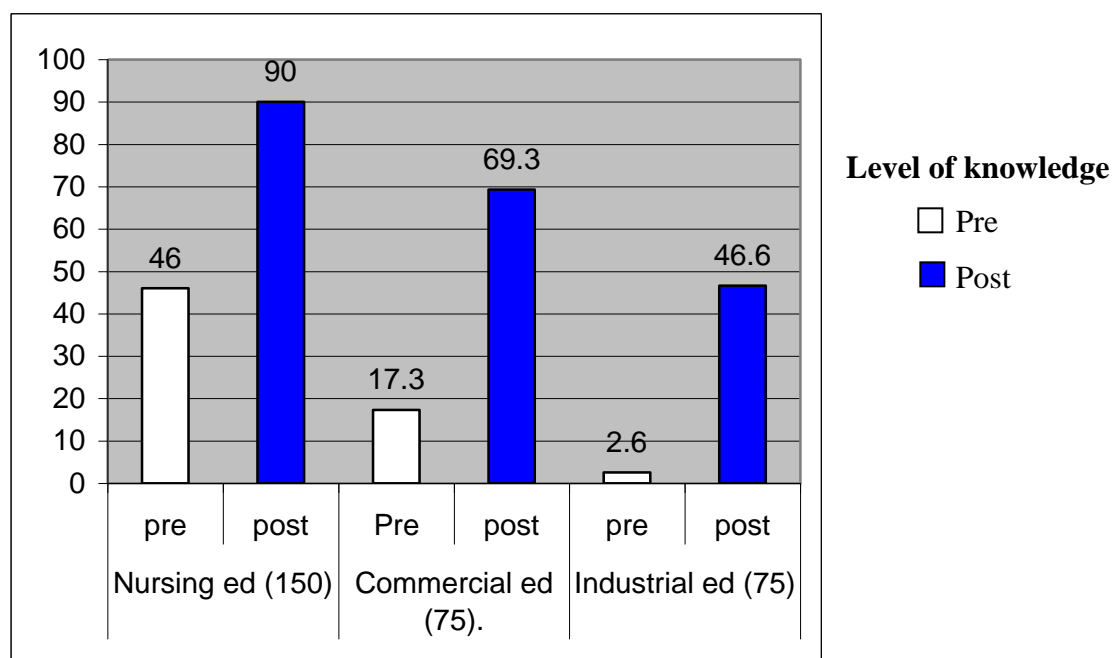


Figure 3 presented the students level of knowledge about female genital mutilation. As figure indicated 46% of the student's nurse had better knowledge about the female mutation than the commercial and industrial students before distribution the instructions guideline (46%, 17.3% and 2.6% respectively). But post dissemination the booklet their knowledge increased to reach 90% among the student's nurse compared to 64.3% and 69.3% among both commercial and industrial students. The finding was statistically significant  $P < 0.001$

**Table (12) Distribution of the studied sample by their knowledge about proper diet No = 300**

Knowledge	Nursing education				Commercial education				Industrial education				Z	P
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<b>1- Components of good diet</b>														
- Complete answer	45	30.0	114	76.0	0	0.0	5	6.6	0	0	1	1.4	5.84	<0.001
- Incomplete answer	51	34.0	25	16.6	14	59.4	64	85.4	8	10.6	52	69.3	4.65	<0.001
- Wrong answer or don't know	54	36.0	11	7.4	61	40.6	6	8.0	67	89.4	22	29.3	9.62	<0.001
<b>2- Examples of nutrients</b>														
- Complete answer	4	2.6	109	72.6	0	0	5	6.6	0	0.0	0	0.0	10.1	<0.005
- Incomplete answer	104	69.4	37	24.8	15	20.0	61	81.4	11	14.6	63	84.0	1.81	<0.005
- Wrong answer or don't know	42	28.0	4	2.6	60	80.0	9	12.0	64	85.4	12	16.0	10.2	<0.005
<b>3- Effect of poor nutrition</b>														
- Complete answer	0	0.0	79	52.6	0	0.0	2	2.6	0	0.0	0	0.0	-	<0.005
- incomplete answer	57	38.0	65	43.4	3	4.0	56	74.8	0	0.0	51	68.0	7.35	<0.005
- Wrong answer or don't know	93	62.0	6	4.0	72	96.0	17	22.6	75	100.0	24	32.0	11.4	<0.005

Table 11 illustrated the studied sample knowledge about proper diet. The table showed that nearly none of the study subjects reported correct answers about all items of proper diet before distribution the instruction guide line. But after dissemination the booklets the student's nurse reported better knowledge than both commercial and industrial students. As regard components of healthy diet 76% of the student's nurse reported complete answers, compared to 85.4% of commercial students and 69.3% of industrial students reported incomplete answers. On the other hand 72.6% of the student's nurse mentioned complete answers, about the examples of nutrients compared to 81.4% of commercial school students and 84% of these belonged to industrial students reported incomplete answers. Concerned the effect of poor nutrition on the girl 52.6% of the nurse's students reported complete answers and 43.4% mentioned incomplete answers compared to 74.6% of commercial students and 68% of industrial one reported incomplete answers. The finding of all items of proper diet between before and after instruction guide line distribution were statistically significance  $P < 0.001$  &  $P < 0.005$ .

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***Figure (4) Sources of knowledge about proper diet among the studied sample. No= 300***

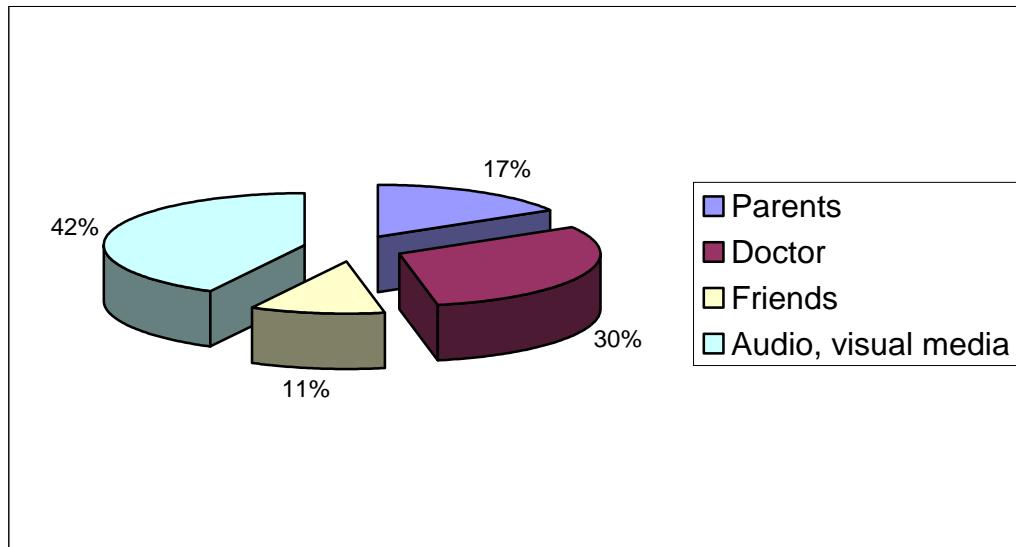


Figure 4 illustrated the main sources of knowledge about healthy diet were mass media, doctors, parents, and friends (42 %, 30 %, 17% and 11% respectively).

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**Table (12) Distribution of the studied sample by their knowledge about breast self examination N0 = 300**

Knowledge	Nursing (150)				Commercial (75)				Industrial (75)				Z	P
	pre		post		Pre		post		pre		post			
	No	%	No	%	No	%	No	%	No	%	No	%		
<b>1- Hearing about breast self examination</b>														
- Yes	101	67.4	144	96.0	0	0.0	57	76.0	0	0	52	69.4	8.8	<0.001
- No	49	32.6	6	4.0	75	100.0	18	24.0	75	100.0	23	30.6	9.69	<0.001
<b>2- Definition of breast self examination:</b>														
- Complete answer	14	9.4	106	70.6	0	0.0	1	1.4	0	0.0	0	0	8.45	<0.001
- Incomplete answer	75	50.0	40	26.8	0	0.0	54	72.0	0	0.0	53	70.6	4.83	<0.001
- Wrong answer or don't know	61	40.6	4	2.6	75	100.0	20	26.6	75	100.0	22	29.4	10.3	<0.001
<b>3-practice of breast self examination monthly</b>														
- Yes	54	36.0	141	94.0	0	0.0	70	93.4	0	0.0	65	86.6	12.0	<0.005
- No	96	64.0	9	6.0	75	100.0	5	6.6	75	100.0	10	13.4	13.2	<0.005

Table 12 illustrated the studied sample knowledge about breast self examination. It is clear from the table that nearly none of the study subjects reported correct answers about breast self examination before distribution the instruction guide line. But after dissemination the booklets the student's nurse reported better knowledge than both commercial and industrial students. As regard if the studied students hearing about the breast self examination 96% of the student's nurse reported positive answer, compared to 76% and 69.4% of both commercial students and industrial students were gave positive answers else . Concerned the definition of the breast self examination 70.6% of the student's nurse mentioned complete answers and 26.8% of them reported incomplete answers compared to 72% of commercial students and 70.6% of industrial students mentioned incomplete answers. Concerned practice of breast self examination monthly 94% of student nurses mentioned positive answer, compared to 93.4% and 86.6% of both commercial and industrial students reported positive answer. The findings of all items of breast self examination before and after instruction guideline distribution were statistically significance  $P < 0.001$  &  $P < 0.05$

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*Figure (5) the studied subject's sources of knowledge about breast self examination.*

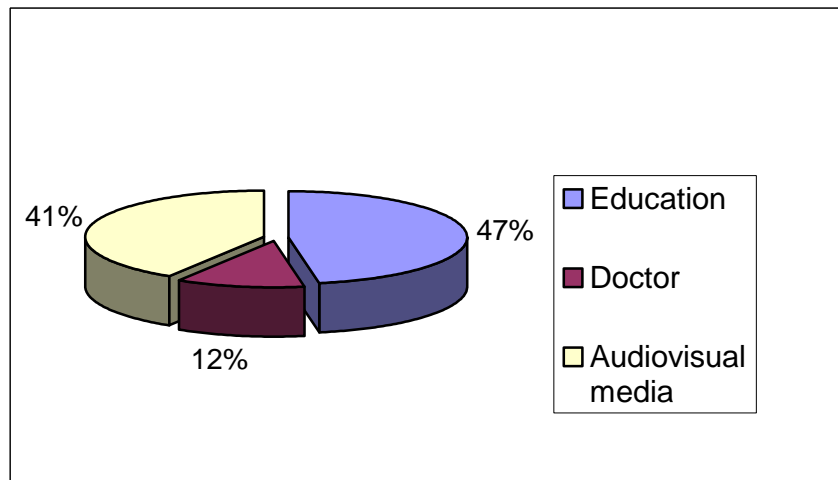


Figure 5 reports that the student's sources of knowledge about breast self examination. According to the figure the study subjects mentioned the sources of their knowledge about breast self examination were, Education, mass media, and doctors. (47%, 41% and 12% respectively).

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**Table (14): Adequacy of students knowledge about all items of premarital counseling No = 300**

Knowledge	Adequate						Inadequate						$\chi^2^*$	p-value
	Nursing(150)		Commercial(75)		Industrial(75)		Nursing(150)		Commercial(75)		Industrial(75)			
	No	%	No	%	No	%	No	%	No	%	No	%		
<i>Premarital counseling</i>	28	9.2	1	0.3	0	0.00	122	40.6	74	24.6	75	25.0	27.9	< 0.001
<i>Reproductive health</i>	89	29.6	0	0.0	0	0.0	61	20.3	75	25.00	75	25.0	126.5	< 0.001
<i>Pregnancy and labor</i>	73	24.3	2	0.6	1	0.3	75	24.0	73	24.3	74	24.6	87.9	< 0.001
<i>Family planning</i>	45	15	2	0.6	1	0.3	105	35	73	24.3	74	24.6	43.8	< 0.001
<i>Female mutation</i>	19	6.3	1	0.3	2	0.6	131	43.6	74	24.6	73	24.3	12.7	< 0.001
<i>Good diet</i>	79	26.3	1	0.3	2	0.6	71	23.6	74	24.6	73	24.3	97.0	< 0.001
<i>Breast self examination</i>	53	17.6	0	0.0	1	0.6	97	32.3	75	25	74	24.6	61.1	< 0.001

\* Adjusted Chi square test

Table (14) presented the studied sample knowledge about all items of premarital counseling. According to the table, all the students that had adequate level of knowledge about all items of premarital counseling were student's nurses, while very few of commercial and industrial students had adequate knowledge. The table also revealed inadequate level of knowledge that presents among both commercial and industrial students, by highly significant relationship between the adequacy of knowledge and all items of premarital counseling ( $p < 0.001$ )

**Table (15): Relation between adequacy and socio demographic characteristics. No: 300**

<i>Socio demographic characteristics</i>	<i>Level of knowledge</i>				$\chi^2$	p-value
	<i>Adequate</i>		<i>Inadequate</i>			
	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>		
<i>Age</i>					96.2	< 0.001
(17: 18) (235)	16	5.3	219	73.00		
(19: 20) (65)	39	13.00	26	8.6		
<i>Residence</i>					66.2	< 0.001
Rural (233)	20	6.6	213	71.00		
Urban (67)	35	11.6	32	10.6		
<i>Social class:</i>					148.1	< 0.001
High	10	3.3	4	1.3		
Moderate	38	12.6	20	6.6		
Low	7	2.3	221	73.6		
<i>Type of Education</i>					44.3	< 0.001
Nursing	60	20.3	90	30.00		
commercial	2	0.6	73	24.0		
Industrial	3	1.00	72	24.0		

Table 15 indicated the relation between socio demographic characteristics of the studied subjects and their knowledge about the premarital counseling. According to the table both students of commercial and industrial had inadequate knowledge (24%). The table also revealed the high prevalence of inadequate knowledge presents among students age 17-18 years, come from rural areas and belonged to low social class (73%, 71%, and 73.6% respectively), with highly significant relationship between adequacy of knowledge and sociodemographic characteristics ( $p < 0.001$ ), where there is more adequacy of knowledge with higher age, urban residence, high social class, and nursing type of education.