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The Effect of Instructional Guidelines about Sexually Transmitted Diseases on the Knowledge and Practice among Childbearing Women

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Abstract:
Background: *Sexually Transmitted Diseases (STDs) are a major health problem that affects mostly young people, not only in developing but also in developed countries.* ***The aim of this study*** *was to evaluate the effect of instructional guidelines about sexually transmitted diseases on the knowledge and practice among childbearing women.* ***Design:*** *A Quasi experimental design (one group pre and post-test) was used.* ***Sample:*** *A purposive sample composed of 100 women married and in childbearing age from the obstetrics and gynecological outpatient clinic at El- Fayoum University Hospital.* ***Tools:*** *three tools were used (I) Structured Interviewing Questionnaire, (II) Knowledge assessment tool and (III) Practice assessment tool.* ***Results:*** *findings of the presenting study revealed that there was a highly statistical significant improvement in women's total satisfactory knowledge and practices regarding STDs after applying the instructional guidelines program as shown by more than three quarters of the studied women at post and follow-up test* ***Conclusion:*** *According to the findings of the present study, the women's knowledge and practices about STDs improved after applying the instructional guidelines and there were statistical significant differences pre, post and follow-up program.* ***Recommendations:*** *Providing educational programs about STDs to women in MCH centers and outpatient obstetrics clinics and regular training of the healthcare personnel, especially female ones, to become counselor at each health facility to discuss the STIs problem among women.*

Key words: *Instructional guidelines, Sexually transmitted diseases, Knowledge, Practice, Childbearing women.*

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I. Introduction:

Sexually Transmitted Diseases (STDs) are a major health problem that affects mostly young people, not only in developing but also in developed countries. It refers to a variety of clinical syndromes and infections caused by pathogens that can be acquired and transmitted mainly through sexual activity from one person to another **(Ahmed & Farouk, 2018).**

STIs have a profound impact on sexual and reproductive health worldwide. More than 1 million new curable sexually transmitted infections are acquired every day among people aged 15-49 years. Each year, there are estimated 499 million new infections with one of four STIs: chlamydia, gonorrhea, syphilis and trichomoniasis (**WHO, 2019).**

Women of childbearing age have health-care needs related to sexuality. The health-care needs that are most obvious are the need for contraception and the need for prevention and treatment of vaginal and sexually transmitted infections. Although providers may have questions related to sexual activity, sexual orientation, sexual practices, sexual satisfaction, they often offer little discussion on issues related to sexuality unless the patient raises the issues **(Judith & Jennifer, 2015).**

STDs prevention is a fundamental component of global sexual and reproductive health. Insufficient knowledge about health hazards of STDs and issues around accessing health services are among the major impediments to successfully prevent STDs among women in developing countries, so the primary prevention of STDs and improving knowledge and practice through effective guidelines needs to be given high priority and education especially for childbearing women because they are more vulnerable than men to infection with STDs and to its complications because of the greater mucosal surface exposed to a greater quantity of pathogens during sexual intercourse **(Gamal, 2018).**

Nurses play an integral role in identifying and preventing STDs. They have a unique opportunity to educate the clients about this serious public health issue by communication the methods of transmission and symptoms associated with each condition and its health hazards, tracking the updated instructional guidelines, and offering clients with strategic preventive measures to reduce the spread of STDs **(Borawski, 2016).**

Significance of the study:

In the developing countries, both the prevalence and incidence of STDs are high, making up the second highest cause of healthy life lost in women aged 15 to 49 years, after maternal morbidity and mortality. Moreover, STDs constitute a substantial health and economic burden, especially for developing countries already strained with other emerging health problems. STIs prevalence in Egypt is up to 3.0% among 15-49 years married females and the commonest diagnosed STIs were candidiasis (38.0%) and scabies (21.0%) **(El-Moselhy et al, 2020).**

Sexually transmitted diseases can occur without symptoms and can thus be passed on without awareness during unprotected sexual intercourse. STDs can have serious consequences beyond the immediate impact of the infection itself. Mother to child transmission of STDs can result in stillbirth, neonatal death, low birth weight and prematurity, sepsis, pneumonia, neonatal conjunctivitis and neonatal deformities. Syphilis in pregnancy leads to approximately 305000 fetal and neonatal deaths every year and leaves 215000 infants at increased risk of dying from prematurity, low birth weight or congenital disease **(Mahmoud, 2016).**

Unfortunately, lack of public awareness, lack of training of health workers and long standing wide spread stigma around STDs remain barriers to reduce the sexually transmitted diseases. Also, the unavailability of a national plan to provide outreach and educational programs targeting the general population especially women of reproductive age where most of the efforts done for controlling STIs in Egypt focused on providing STIs services for high risk-populations like sex workers. Moreover, most PHC centers in Egypt do not provide any preventive programs for STIs because of lack of human and financial resources **(Amin, Galal, Shaheen& Salem, 2021).**

So, this study is intended to shed a light on the effectiveness of providing instructional guidelines about sexually transmitted diseases on the knowledge and practice among childbearing women.

Aim of the study:

This study aims to evaluate the effect of instructional guidelines about sexually transmitted diseases on the knowledge and practice among childbearing women.

This was accomplished through the following objectives:

(1) Assess the childbearing women's knowledge and practice about sexually transmitted diseases.
(2) Design the instructional guidelines about sexually transmitted diseases.
(3) Implement health educational sessions using the instructional guidelines about sexually transmitted diseases.
(4) Evaluate the effectiveness of the instructional guidelines about sexually transmitted diseases on childbearing women's knowledge and practice.

Research hypotheses:

(1) The childbearing women's knowledge about sexually transmitted diseases will be improved after implementing of the instructional guidelines.
(2) The childbearing women's practices about sexually transmitted diseases will be improved after implementing of the instructional guidelines.

Subjects and Methods:

1-Technical Design:

A. Research design:

A Quasi experimental design (one group pre- posttest) was used in this study**.**

B. Setting:

The study was conducted at the obstetrics and gynecological outpatient clinic at El- Fayoum University Hospital.

C. Subjects of the study:

Sample type & size:

A purposive sample for total of 100 women was determined according to the following sample size equation:

$$N = \frac{P\,(1-p) \times z^2}{D^2}$$

Inclusion criteria:
- Married women.
- Women at reproductive age (14- 49) years.

Exclusion criteria:
- Single females.
- Menopausal women.

D. Tools of Data Collection

Three tools were used for data collection**:**

Tool I: Interviewing Questionnaire sheet: It was designed by the researcher based on reviewing related literatures and consisted of 23 questions. It was divided into 4 parts: Part (1): Socio-demographic characteristics' of women. Part (2): women's obstetrical history Part (3): women's medical history Part (4): History of sexually transmitted diseases.

Tool II: Knowledge assessment tool: This tool is adapted from **(Mahmoud, 2016)** and modified by the researcher to test women's knowledge about STDs pre and post instructional guidelines, it included definition of STDs, causes, types, signs and symptoms, mode of transmission, health hazards of STDs for women in general, during pregnancy and after childbirth, health hazards of STDs for the newborn and prevention of STDs.

Knowledge scoring system:

It composed of 10 questions (total optimal score was 30 points).The answer for this part ranged from: 1- A complete correct answer (3). 2- An incomplete correct answer (2). 3- Wrong answer or don't know (1). The total scores for the women's knowledge regarding STDs divided into three levels: Poor knowledge < 50%; Fair knowledge 50 – < 75%; Good knowledge ≥ 75%.

Tool III: Practice assessment tool: This tool is adapted from **(Fathy, Ahmed, Abd-Elsalam & Refaat, 2018)** and modified by the researcher to test women's practice before and after instructional guidelines such as (actions towards STDs for women and husband, perineal self-care practices, menstrual hygienic practices and good nutrition).

Practice scoring system:

It composed of 27 items (total optimal score was 54 points).The practice has been scored as done = 2 and not done = 1. The total scores for the women's practice regarding prevention of STDs classified into two levels: Unsatisfactory practice < 60%; Satisfactory practice ≥ 60%.

Validity and reliability:

Revision of the tools was done by a panel of expertise composed of 5 professors of Obstetrics and Gynecological Nursing to measure the content validity of the tools and the necessary modifications was done accordingly and test –re test reliability was applied by the researcher for testing the internal consistency of the tool.

Ethical considerations:

The research approval was obtained from Scientific Ethical Committee in the Faculty of Nursing at Helwan University before starting the study. The researcher clarified the objective of the study to the women included in the study to gain their confidence and trust. The researcher obtained oral consent from childbearing women. The researcher assured maintaining anonymity and confidentiality of subjects' data. The women were informed that they are allowed to choose to participate or not in the study and that they have the right to withdraw from the study at any time.

2- Operational Design:

Pilot study:

It was carried out on 10% (10 of childbearing women under the study) to test the applicability, clarity and the efficiency of the tools. Women in the pilot study were excluded from the study sample later. There were no major modifications found after the pilot study. The pilot showed very high levels of reliability.

Field work:

- After attaining the approval to conduct the study, sample was collected during the period of working of the obstetric outpatient clinic 3 days weekly from 9a.m to 2p.m.
- Actual field work was carried out in the period from October 2020 up to March 2021.
- At the beginning, the researcher introduced herself and explain the purpose of study to women to gain their confidence and trust to convince them to participate in the study, then the verbal consent was obtained from them.
- Then the researcher started the assessment process individually.
- The researcher used tool (I) to assess women's socio-demographic data, obstetrical history, medical history and history of sexually transmitted diseases.

- Then the researcher assessed women's knowledge and practices regarding sexually transmitted diseases by using tool II and III.
- The women were interviewed in the reception of the obstetrics and gynecological outpatient clinic.
- The tool took about 15- 20 minutes to be filled by the researcher from each woman individually.

The instructional guidelines construction:

It consists of four phases:

First: Preparatory phase:

The instructional guidelines program was designed by the researcher based on reviewing of the related recent, national and international literature and theoretical knowledge of various aspects of the study using books, articles, scientific journal and internet with the aim of acquiring in-depth knowledge about the study. The content of the instructional guidelines program was validated by a panel of expertise in obstetrics and gynecological nursing.

Second: Assessment phase:

This phase involved the pre-intervention data collection for baseline assessment. In this phase the researcher collecting the following data:

- Structured interviewing questionnaire for assessing women's socio-demographic characteristics, obstetric history, medical history and sexually transmitted diseases history.
- Assessment of women's knowledge about STDs (pre, post and follow up instructional guidelines).
- Assessment of women's practices regarding prevention of STDs (pre, post and follow up instructional guidelines).

Third: Implementation phase:

- The instructional guidelines was implemented for a period of 6 months, it carried out in 4 sessions (time allowed 2 hours distributed on 4 sessions, each session took 30 minutes).
- First session included an orientation about the program and its objectives, and the women were informed about the time.
- Second session included information about (definition of sexually transmitted disease, causes, types, signs and symptoms of each disease and mode of transmission).
- Third session included information about health hazards of STDs and prevention.
- Fourth session about proper practices and actions if any women suspected or have any type of STDs.
- Each session started by explaining the objectives of it taking into consideration using simple and clear language to all levels of women.
- Each session was followed by summary of essential points.
- The teaching media included audio visual and posters while the teaching methods included lectures and group discussion.
- In the last of session every woman took one of guided booklets which aimed to provide accurate knowledge and practice regarding prevention of STDs in Arabic language.
- The researcher and the studied women shared for telephone numbers to be in contact and follow up with them.

Fourth: Evaluation phase:

Evaluation was applied through post and follow up test by using the same tools in order to identify differences, similarities and areas of improvement as well as defects and estimate the effect of the instructional guidelines to improve women's knowledge and practices regarding prevention of STDs and observe the change in the women's behavior related to STDs.

- **Post-test:** was done for each woman immediately after implementing the instructional guidelines for assessing their acquisition of knowledge and practice.
- **Follow- up test**: after 3 months another test was done after post-test by calling the woman to assess the retention of knowledge and assess the effectiveness of developed instructional guidelines on the knowledge and practice regarding prevention of STDs.

3-Administrative Design:

An official letter from the Dean of the Faculty of Nursing, Helwan University was directed to the administrators of El- Fayoum University Hospital to obtain an official approval to carry out the study after explanation of the aim of the study. The permission was obtained before the initiation of the data collection.

4-Statistical design:

The data was collected, coded and entered to a personal computer. It was analyzed with the program statistical package for social science (SPSS) version 19. The collected data was organized, revised, analyzed and presented in numbers and percentage in tables, figures and diagram. Proper and suitable statistical tests were used to test the significance of results obtained. The following statistical techniques were used (percentages, mean value, standard deviation, chi-square(X2), proportion probability (p-value) and T test.

II. Results

Table (1) reveals that there was highly statistical difference between pre, post and follow up test score in all answers regarding women's knowledge about definition, causes, types, symptoms and the modes of transmission, health hazards and the ways of prevention of STDs. In pre intervention only less than one quarter of the studied women (17%, 21%, 19%, 24% and 14%) identified the definition, causes, types, symptoms and the modes of transmission, health hazards and prevention of STDs compared to (81%, 78%, 83%,83%, 86%) and (73%,75%,80%,81%,84%) at post and follow up test respectively.

Figure (1) shows that there was a highly statistically significant difference between women's total satisfactory knowledge about STDs pre, post and follow up implementation of instructional guidelines program.

Table (2) illustrates that there was a highly statistical difference between women's practices in case of having STDs pre, post and follow up instructional guidelines ($p<0.001$)

Table (3) illustrates that there was a highly statistical difference between women's practices regarding perineal hygiene pre, post and follow up instructional guidelines ($p<0.001$).

Table (4) illustrates that there was a highly statistical difference between women's practices regarding menstrual hygiene pre, post and follow up instructional guidelines ($p<0.001$).

Figure (2) shows that there was a highly statistically significant difference between women's total satisfactory practice about STDs pre, post and follow up implementation of instructional guidelines program.

Table (5) shows a highly significant relation between women's knowledge regarding STDs and their age, women who were more than 30 years old were more knowledgeable than women who were under 30 years old. In addition, there was a highly significant relation between women's knowledge regarding STDs and their educational level, women who had university education were more knowledgeable than women who had secondary education, read and write or illiterate.

Table (6) shows a highly significant relation between women's practice regarding STDs and their age, women who were 25 years and older were more practicable and have more satisfactory practices than women who were under this age.

Table (7) represents a highly significant positive correlation between women's total satisfactory knowledge and their total satisfactory practices ($p <0.001$).

III. Discussion

Since early eighties, the sexually transmitted diseases (STDs) are a great public health concern in the world particularly in developing countries as it enhances the transmission of Human Immune deficiency Virus (HIV). Besides, sexually transmitted diseases can have serious consequences on reproductive health and well-being of both men and women. Both short- and long-term squeals of untreated Sexually transmitted diseases cause profound biomedical, social and economic impact on individuals and communities. Thus, the control of Sexually transmitted diseases is now recognized as a global priority **(Tareq, 2020).**

The increasing knowledge about STDs is considered the first line of defense to minimize the STDs incidence rate and maintain the wellbeing of the population. Also, knowledge about STIs is very significant for preventing the adverse outcomes of young adult reproductive health. Therefore, this present study was designed to evaluate the effect of instructional guidelines about sexually transmitted diseases on the knowledge and practice among childbearing women.

Regarding women's total satisfactory knowledge regarding STDs, the current study showed that there was a great increase and improvement in the women's total satisfactory knowledge at post and follow-up test after applying the program where there was a highly statistically significant difference between women's total satisfactory knowledge about STDs pre, post and follow up implementation of instructional guidelines program.

The researcher believes that this improvement may be related to that all women in the sample share in the program and become more equipped by the important information about STDs and the instructional guidelines included the needed information about STDs in simple, concise and clear language as well as the written booklet supported with pictures which they considered as a reference at any time even the illiterate women.

This finding was congruent with a study by **(Hashwani, 2018)** that entitled " Awareness of sexually transmitted diseases in a selected sample Pakistan medical association" who reported that almost three quarters of the participants indicated either inadequacy or lack of knowledge about meaning, causes, mode of

transmission and complication of STDs and this knowledge level improved after education program**.** Also, this result was supported by a study by **(Abo Bakr, 2014)** that entitled "Nursing intervention for women suffering from common sexually transmitted diseases by applying an epidemiological model" in Egypt, who reported improvement in women's total knowledge about STDs at post and follow-up intervention of the program .

Concerning women's practices regarding self perineal hygiene, the result of the present study showed that there was a highly statistical difference between women's practices regarding perineal hygiene pre, post and follow up instructional guidelines. This result is consistent with a study by **(Pete, Biguioh, Izacar, Adogaye, & Nguemo, 2019)** that entitled " Genital hygiene behaviors and practices: A cross-sectional descriptive study among antenatal care attendees" who reported that good genital hygiene practices had positive effects on vaginal infection prevention including sexual transmitted infections (STIs) and the use of antiseptic solutions and synthetic underwear's are risky practices that can have an outcome on the incidence of infections in gestational women and therefore constitute a danger for the fetus and newborn..

Regarding women's practices regarding self-menstrual hygiene, the finding of the current study showed that there was a highly statistical difference between women's practices regarding menstrual hygiene pre, post and follow up instructional guidelines. This result is consistent with a study by **(Das et al, 2015)** that entitled " Menstrual Hygiene Practices, WASH Access and the Risk of Urogenital Infection in Women from Odisha, India" who reported that women who used reusable absorbent pads were more likely to have symptoms of urogenital disease than women using disposable pads and also provided support for the hypothesis that some menstrual hygiene practices can increase the risk of urogenital infections including STDs.

Focusing on women's total satisfactory practice regarding STDs, the current study showed that there was a great increase and improvement in the women's total satisfactory practice at post and follow-up test after applying the program where there was a highly statistically significant difference between women's total satisfactory practice about STDs pre, post and follow up implementation of instructional guidelines program. This may be due to the women become more knowledgeable about STDs and become aware of the ways of prevention of STDs because the study showed that there was a positive correlation between woman's total knowledge and practice. This result supported by a study by **(Zin, Ishak, & Manoharan, 2019)** that entitled" Knowledge, attitude and practice towards sexually transmitted diseases amongst the inmates of women shelters homes at Klang Valley" who reported the same finding.

According to the statistical relation among study variables: the current study showed that there was a highly significant relation between women's knowledge regarding STDs and their educational level, women who had university education were more knowledgeable than women who had secondary education, read and write or illiterate. This result supported by a study by **(Hossain, Mani, Sidik, Shahar & Islam, 2014)** that entitled" Knowledge and awareness about STDs among women in Bangladesh" who reported that the secondary educated female garment workers have more knowledge and awareness about HIV/AIDS, including STDs, than illiterate female garment workers.

Regarding the relation between women's total satisfactory practice and socio-demographic characteristics, this present study showed that there was a highly significant relation between women's practice regarding STDs and their age, women who were more than 30 years old were more practicable and have more satisfactory practices than women who were under 30 years old. This finding comes in line with a study by by **(Abo Bakr, 2014)** that entitled "Nursing intervention for women suffering from common sexually transmitted diseases by applying an epidemiological model" in Egypt, who reported the same result.

Concerning the correlation between women's knowledge and practice, this present study showed that there was a highly significant correlation between women's total satisfactory knowledge and their total satisfactory practices. This result supported by a study by **(Zin, Ishak, & Manoharan, 2019)** that entitled" Knowledge, attitude and practice towards sexually transmitted diseases amongst the inmates of women shelters homes at Klang Valley" who reported the same finding.

IV. Conclusion

The present study concluded that there was a highly statistical significant improvement in women's knowledge and practices about sexually transmitted diseases after applying the instructional guidelines and this evidence that these guidelines were effective in raising women's knowledge about sexually transmitted diseases and improving their practices regarding prevention of STDs.

V. Recommendations

In the light of the present study findings, the following were recommended:

- Providing educational programs about the sexually transmitted diseases to women in MCH centers and outpatient obstetrics clinics.
- Regular training of the healthcare personnel, especially female ones, to become counselor at each health facility to discuss the STIs problem among women.

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Table (1): Distribution of the Study Group According to Their Knowledge about Sexually Transmitted Diseases (n=100)

Items of knowledge	Pre		Post		Follow up		Chi-square			
							Pre &post		post &follow	
	N	%	N	%	N	%	X^2	P-value	X^2	P-value
1- Definition of sexually transmitted diseases (STDs).										
Correct& complete	17	17	81	81	73	73	89.796	<0.001*	2.091	0.351
2- Causes of STDs.										
Correct& complete	21	21	78	78	75	75	68.030	<0.001*	0.254	0.881
3- Types of STDs.										
Correct& complete	19	19	83	83	80	80	88.144	<0.001*	2.976	0.226
4- Symptoms of STDs.										
Correct& complete	24	24	83	83	81	81	71.208	<0.001*	0.155	0.925
5- Modes of transmission of STDs.										
Correct& complete	14	14	86	86	84	84	104.866	<0.001*	0.205	0.902
6- Health hazards of STDs for women in general.										
Correct& complete	26	26	85	85	83	83	73.560	<0.001*	2.190	0.334
7- Health hazards of STDs for women during pregnancy.										
Correct& complete	21	21	90	90	88	88	97.233	<0.001*	1.099	0.577
8- Health hazards of STDs for women after childbirth.										
Correct& complete	25	25	78	78	75	75	59.245	<0.001*	0.316	0.854
9- Health hazards of STDs for the newborn.										
Correct& complete	16	16	87	87	82	82	106.322	<0.001*	2.191	0.334
10- Ways for prevention from STDs.										
Correct& complete	18	18	85	85	82	82	90.041	<0.001*	1.578	0.454

<0.001* means highly statistically significant.

Figure (1): Distribution of the Study Group According to Their Total Knowledge Score Regarding STDs Pre, Post and Follow up Instructional Guidelines (n=100)

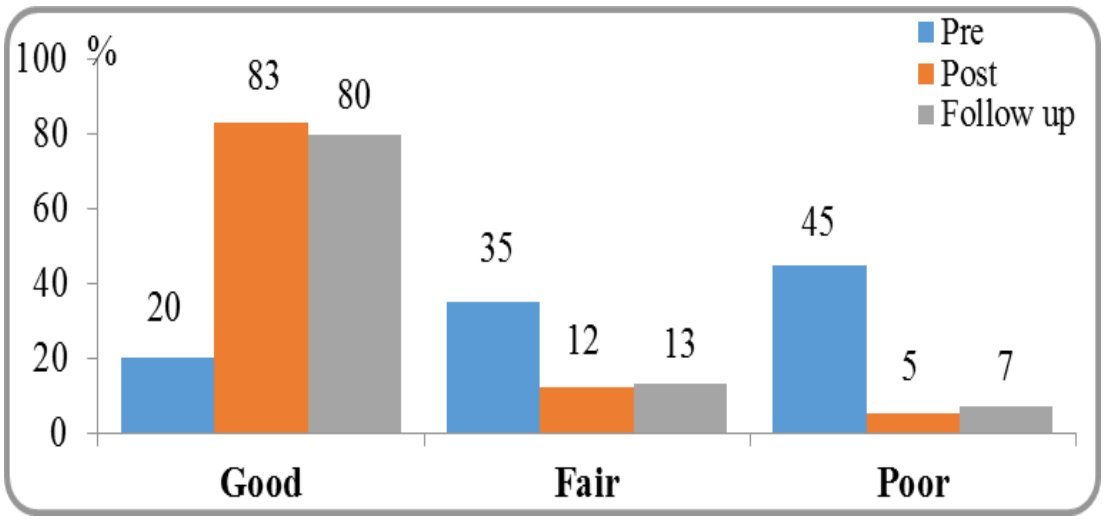

Table (2): Distribution of the Study Group According to Their Actions Taken by Them In Case of Having STDs (n=100).

Actions taken by women towards having STDs.		Pre		Post		Follow up		Chi-square			
								Pre &post		post &follow	
		N	%	N	%	N	%	X^2	P-value	X^2	P-value
1- I tell my husband that I am infected so that the infection is not transmitted to him.	Done	27	27	84	84	87	87	65.776	<0.001*	0.363	0.547
	Not done	73	73	16	16	13	13				
2- Avoid having sex during this period.	Done	42	42	77	77	81	81	25.418	<0.001*	0.482	0.487
	Not done	58	58	23	23	19	19				
3- Use the female condom frequently or ask my husband to use a male condom.	Done	35	35	85	85	88	88	52.083	<0.001*	0.385	0.535
	Not done	65	65	15	15	12	12				
4- I go to the doctor for medical advice and treatment.	Done	29	29	88	88	92	92	71.692	<0.001*	0.889	0.346
	Not done	71	71	12	12	8	8				
5- I ask my husband to take the treatment also to avoid cross-infection.	Done	31	31	78	78	81	81	44.541	<0.001*	0.276	0.599
	Not done	69	69	22	22	19	19				
6- Go for getting the free hepatitis B vaccination.	Done	42	42	86	86	86	86	42.014	<0.001*	0.000	1.000
	Not done	58	58	14	14	14	14				
7- Go for a routine check-up to discover these diseases.	Done	37	37	82	82	83	83	42.017	<0.001*	0.035	0.852
	Not done	63	63	18	18	17	17				

<0.001* means highly statistically significant.

Table (3): **Distribution of the Study Group According to Their Practices Regarding Perineal Hygiene during Pre, Post and Follow up Program (n=100).**

Maintain constant self perineal hygiene by		Pre		Post		Follow up		Chi-square			
								Pre &post		post &follow	
		N	%	N	%	N	%	X^2	P-value	X^2	P-value
1- Washing the perineal area from front to back.	Done	34	34	80	80	82	82	43.166	<0.001*	0.130	0.718
	Not done	66	66	20	20	18	18				
2- Wear cotton underwear.	Done	45	45	79	79	80	80	24.533	<0.001*	0.031	0.861
	Not done	55	55	21	21	20	20				
3- Keep this area well-dry continuously.	Done	35	35	76	76	82	82	34.032	<0.001*	1.085	0.298
	Not done	65	65	24	24	18	18				
4- Avoid vaginal douching frequently.	Done	32	32	84	84	86	86	55.501	<0.001*	0.157	0.692
	Not done	68	68	16	16	14	14				
5- Washing hands before using the toilet.	Done	33	33	83	83	87	87	51.314	<0.001*	0.627	0.428
	Not done	67	67	17	17	13	13				
6- Washing hands after using the toilet.	Done	38	38	77	77	84	84	31.120	<0.001*	1.561	0.212
	Not done	62	62	23	23	16	16				
7- Avoid wearing underwear of others.	Done	42	42	79	79	80	80	28.643	<0.001*	0.031	0.861
	Not done	58	58	21	21	20	20				
8- Continuous Change to underwear to not be media for infection.	Done	40	40	84	84	86	86	41.087	<0.001*	0.157	0.692
	Not done	60	60	16	16	14	14				

<0.001* means highly statistically significant.

Table (4): Distribution of the Study Group According to Their Practices Regarding Menstrual Hygiene during Pre, Post and Follow up Program (n=100).

Maintain good personal hygiene during the menstruation by		Pre		Post		Follow up		Chi-square			
								Pre &post		post &follow	
		N	%	N	%	N	%	X^2	P-value	X^2	P-value
1- Use sanitary pads during the menstruation.	Done	35	35	85	85	88	88	52.083	<0.001*	0.385	0.535
	Not done	65	65	15	15	12	12				
2- Change the pad frequently every 4 hours.	Done	37	37	83	83	85	85	44.083	<0.001*	0.149	0.700
	Not done	63	63	17	17	15	15				
3- Washing the vagina after changing the sanitary pad.	Done	42	42	84	84	86	86	37.838	<0.001*	0.157	0.692
	Not done	58	58	16	16	14	14				
4- Don't reuse the sanitary pad.	Done	36	36	82	82	84	84	43.737	<0.001*	0.142	0.707
	Not done	64	64	18	18	16	16				
5- Disinfect or clean toilet before and after use.	Done	35	35	80	80	83	83	41.432	<0.001*	0.298	0.585
	Not done	65	65	20	20	17	17				
6- Bathing during the menstrual period in the standing position.	Done	43	43	82	82	86	86	32.448	<0.001*	0.595	0.440
	Not done	57	57	18	18	14	14				

<0.001* means highly statistically significant.

Figure (2): Distribution of the Study Group According to Their Total Satisfactory Practice Regarding STDs Pre, Post and Follow up Instructional Guidelines (n=100)

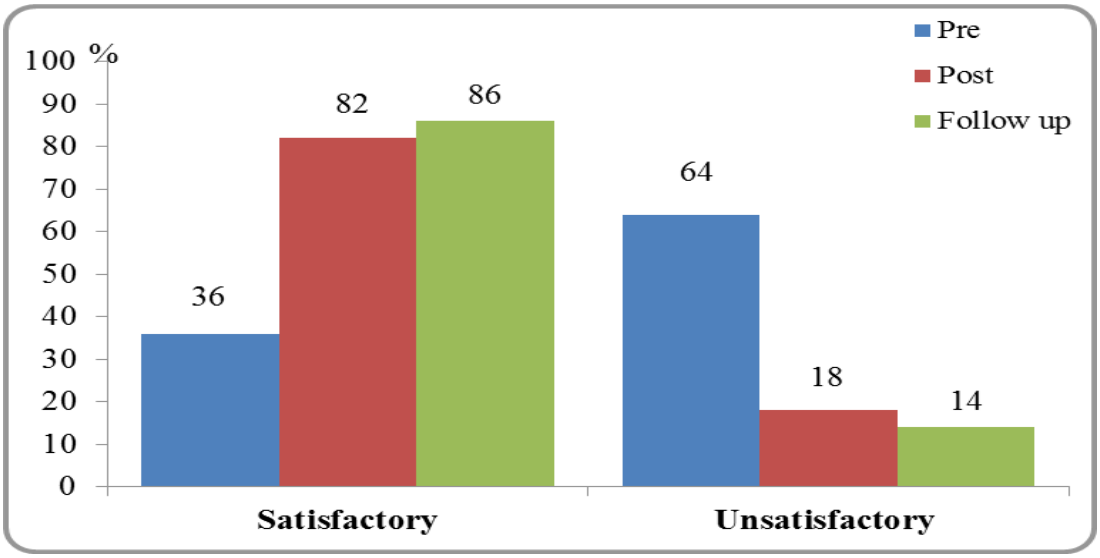

Table (5): Relation between Women's Total Satisfactory Knowledge and Socio-demographic Characteristics

	Total knowledge								
	Pre	Test		Post	Test		Follow up	Test	
	Mean±SD	t/f	P-value	Mean±SD	t/f	P-value	Mean±SD	t/f	P-value
Age (years)									
<25	18.33±4.14	5.837	<0.001*	27.17±2.42	3.702	0.014*	25.90±2.06	10.577	<0.001*
25- <30	18.76±3.77			28.24±3.17			28.03±1.57		
30- <35	21.11±4.32			29.21±1.72			28.00±1.41		
35 or more	22.65±3.37			29.18±1.29			27.82±1.47		
Residence									
Rural	20.28±3.98	2.615	0.010*	28.29±2.41	0.214	0.831	27.19±2.01	1.710	0.091
Urban	17.60±4.52			28.15±3.15			28.00±1.38		
Job									
Employee	17.77±4.19	1.831	0.070	28.92±1.93	1.001	0.319	27.46±1.13	0.224	0.824
Housewife	20.03±4.16			28.16±2.64			27.33±2.02		
Education									
Doesn't read or write	18.58±3.75	7.501	<0.001*	26.42±2.14	3.849	0.012*	25.16±1.21	9.076	<0.001*
Read and write	17.56±3.59			27.44±2.22			26.63±2.19		
Secondary education	20.69±4.31			28.19±3.23			27.67±1.92		
University education	23.17±2.55			29.42±0.67			27.58±1.16		

<0.001* means highly statistically significant.

Table (6): Relation between Women's Total Satisfactory Practice and Socio-demographic Characteristics.

	Total practice (satisfactory)											
	Pre		Chi-square		Post		Chi-square		Follow up		Chi-square	
	N	%	X^2	P-value	N	%	X^2	P-value	N	%	X^2	P-value
Age (years)												
<25	2	5.6	43.073	<0.001*	14	17.1	36.618	<0.001*	17	19.8	30.947	<0.001*
25- <30	9	25			34	41.5			34	39.5		
30- <35	8	22.2			18	22			18	20.9		
35 or more	17	47.2			16	19.5			17	19.8		
Residence												
Rural	23	63.9	9.125	0.003*	62	75.6	5.488	0.019*	66	76.7	4.07	0.044*
Urban	13	36.1			20	24.4			20	23.3		
Job												
Employee	8	22.2	4.23	0.040*	13	15.9	3.28	0.07	13	15.1	2.433	0.119
Housewife	28	77.8			69	84.1			73	84.9		
Education												
Doesn't read or write	5	13.9	14.812	0.002*	16	19.5	6.181	0.103	16	18.6	0.982	0.806
Read and write	4	11.1			18	22			22	25.6		
Secondary education	18	50			37	45.1			37	43		
University education	9	25			11	13.4			11	12.8		

<0.001* means highly statistically significant.

Table (7): Correlation between Women's Total Satisfactory Knowledge and Their Practices.

Items of practice	**Total Knowledge**					
	Pre		Post		Follow up	
	r	P-value	r	P-value	r	P-value
Actions taken by women in case of having STDs.	0.427	<0.001*	0.372	<0.001*	0.356	<0.001*
Maintain constant self-perineal hygiene.	0.384	<0.001*	0.425	<0.001*	0.332	<0.001*
Maintain good personal hygiene during the menstruation.	0.198	0.035*	0.169	0.015*	0.230	0.004*
Maintaining good nutrition.	0.430	<0.001*	0.375	0.002*	0.377	<0.001*
Total practice	0.284	<0.001*	0.395	<0.001*	0.323	<0.001*

<0.001* means highly statistically significant.