

The Impact of A Designed Educational Nursing Program For High Risk women on Their Awareness and Health Practices Regarding The Prevention and Management of The Precancerous Lesion of Cancer Cervix.

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Abstract: Cervical cancer is one of the leading causes of death for middle-aged women in the developing world, yet it is almost completely preventable if precancerous lesions identified and treated in a timely manner. The study aims to assess the impact of a designed educational nursing program for high risk women on their awareness and health practices regarding the prevention and management of the precancerous lesion of cancer cervix. **Subjects and methods;** a quasi-experimental design was carried out in the Gynecology clinics at Tanta City. A purposive sample of 130 high risk women attended the study setting, were selected, under the inclusion criteria. The tools used for data collection were; a structured interview, clinical assessment sheet and the educational program was evaluated immediately post-test and then one month later. **Results;** women at risk for cervical cancer were more likely to be >30 years and more, <20 years age of marriage and had positive family history of cancer. They were also multipara, had repeated cervical laceration, exposed to STD especially chlamydia, menorrhagia was present in 33.0% and post-coital bleeding was reported by 20.0% of the participants. Highly statistically improvements of women's awareness about cervical cancer during the different assessment periods as compared to pre-program. A sizable number agreed after counseling for further screening and treatment. **Conclusion;** improvements of women awareness about cervical cancer during the different assessment periods as compared to pre-program with highly statistically significant differences. A sizable number agreed after counseling for further screening and treatment. **Recommendations;** screening and counseling should be actively advocated to improve detection rate of precancerous lesions of cervical cancer so that it should be performed in all the women attending outpatient gynecological clinics.

Keywords:-precancerous lesion, screening, counseling, cervical cancer.

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I. Introduction

Cancer cervix is a malignant uncontrolled growth of epithelium cells in the transformation zone which is the area between the endo-cervix and ecto-cervix (Jhingran, et al., 2014). Cervical cancer is the third most common cancer in women worldwide. An estimated 500,000 new cases of cervical cancer are identified every year worldwide leading to annual mortality of 270, 000 (Farshbaf-Khaliliet al., 2015). In the developing countries, cancer cervix is a common cancer and leading cause of death in females following breast cancer. About 80.0% of involved patients and 88.0% of related mortalities occur in developing countries, where 13.0% of malignancies in women are cancer of cervix (Ferlay et al., 2010). Data from Egyptian studies provide widely varying estimates on the prevalence of pre-invasive cervical lesions ranging from 1.0% to 8.0% with an age range from 20-60 Years. Invasive lesions represented 59.6% of all female genital tract malignancy according to Egyptian National Cancer Institute data (National Cancer Registry, 2002). Although cervical cancer remains a serious problem in developing countries, incidence and mortality rates have decreased significantly in developed countries over the past 50 years; nonetheless, risk of cervical cancer remains high among medically underserved populations. One reason for this elevated risk is underutilization of cervical cancer screening in these populations (Singh G, et al 2012). Cervical cancer has been converted from an oncological disease to an infectious disease, almost certainly caused by a woman's infection with an oncogenic type of the human papillomavirus (HPV) types 16 and 18 which are responsible for approximately 70.0% of all cervical cancers (Abd El-Azim, et al., 2011). The risk factors for cervical cancer are sexual intercourse at younger ages, having multiple sexual partners, smoking, immune deficiency, multiparity, diet lacking fresh fruits and vegetables, herpes simplex virus (HSV) type-2 infection, exposure to diethylstilbestrol (DES) in utero, history of intraepithelial neoplasia, familial history of cervical cancer, history of genital wart infection and consumption of

oral contraceptives for long period (The American Cancer Society, 2013). Although cervical cancer is one of the leading causes of mortality among women worldwide, it is also the most preventable type of human cancer because it has few subjective symptoms, progression to invasive cancer is slow, and early detection of precancerous lesions by screening is important for prevention. It is globally acknowledged that the prevalence of cervical cancer screening programs as a method for early detection of cervical cancer is effective for reducing approximately 40.0% in the incidence and mortality associated with invasive cervical cancer (Jebakumaret al., 2014). Healthcare providers are fundamental in relaying information to patients, particularly nurses who are able to reach a large and diverse population of females who may not normally have access to HPV and cervical cancer information or screening. Maternity Nurses play a crucial role in the development and management of cancer screening program. These include health education, risk assessment, counseling activities, informing clients about the benefits and barriers of screening, and ensure proper follow-up. However, there are few studies on actual cervical cancer screening adherence of nurses (Norma M, et al, 2009). Therefore it is important to conduct this study to increase women awareness about cervical cancer and improve their screening behavior. The aim of the study was to evaluate the impact of a designed educational nursing program for high risk women on their awareness and health practices regarding the prevention and management of the precancerous lesion of cancer cervix. Hypothesis The high risk women who are exposed to the nursing program about the prevention and management of the precancerous lesion of cervical cancer will have significantly higher knowledge and health practices at the post test and at the follow up test than their knowledge before the program.

II. Subjects And Methods

A quasi-experimental design was utilized to accomplish the aim of this study. The study was conducted in three outpatient clinics, selected from three hospitals, representing available geographical health zones in Tanta City: TA Tanta University Hospital, El-Menshawy and EL-Mabara Hospitals affiliated to the Ministry of Health. A sample size of 130 high risk women was selected according to statistical equation (Brown and Hollander, 1977): with confidence interval (CI=95%), Power (80%) and odds ratio (OR=1).

2.1 Inclusion criteria:

The study sample was collected according to the following criteria:

- a) Woman aged 20–50 years who complains from the following: vaginal bleeding especially after sex, abnormal bleeding in between periods or after menopause, pain and discomfort during sexual intercourse and foul smelling heavy vaginal discharge
- b) Multiparous women who married very young (less than 20 years with very early sexual contact).
- c) Women who married several times.
- d) Women with positive family history of cancer.
- e) History of long-term use of oral contraceptives.
- f) Heavy smoker women.

2.2 Exclusion criteria:

Women who had undergone a total hysterectomy and previously diagnosed with cancer or pre-cancer, had past history of cervical neoplasia, surgical treatment on the cervix, currently pregnant women and less than 3 months post-partum.

2.3 Tools of Data Collection:

2.3.1 Tool I: A structured Interview Sheet:

A structured interview sheet was developed by the researcher to collect data about:

2.3.1.a Socio-demographic profile of high risk women such as: age, occupation & education level.

2.3.1.b Reproductive and sexual history of the high risk women such as: age at marriage, first sexual intercourse, gravida, para and age at first birth. A detailed medical, family and gynecological history was also taken and the current complaint

2.3.1.c Women knowledge about cervical cancer; risk factors, screening for the precancerous lesion and the importance of early treatment.

2.4 Scoring system:

For each area of knowledge, the scores of the items were represented into number of frequency then converted into a percent score. Knowledge was considered satisfactory if the percent score was 60% or more and unsatisfactory if less than 60%. Official permission was obtained by submission of an official letter from the Faculty of Nursing to the responsible authorities of the study setting to obtain the permission for data collection. All ethical issues were taken into consideration during all phases of the study; the researcher maintained an anonymity and confidentiality of the subjects. She introduced herself to the women and briefly explained the

nature and aim of the study to every woman before participation and women were enrolled voluntarily after the written informed consent process.

2.5 As for the field study this was classified into:

2.5.1 Preparatory phase:

This phase involved reviewing of related literature and theoretical knowledge of various aspects of the study subjects. This was achieved using text books, articles, internet periodicals and other scientific journals. This helped in the selection and preparation of the data collection tools and in writing the review of literature.

2.5.1.a Validity and Reliability:

Tools were reviewed by a panel of five experts in the field of Obstetrics and Gynecological Nursing to test its content validity. Modifications were done accordingly based on their judgment. Cronbach's alpha coefficient was calculated to assess the reliability of the developed tool through their internal consistency.

2.5.1.b Pilot study:

A pilot study was carried out before starting the actual data collection. The purpose of the pilot study was to ascertain the clarity, and applicability of the study tools, and to identify the obstacles and problems that may be encountered during data collection. It also helped to estimate the time needed to fill in the questionnaire. Based on the results of the pilot study, modifications, clarifications, omissions, and rearrangement of some questions were done. It was done on 10% of the participants, and these were not included in the total sample of the research work to ensure stability of the answers. An educational program had been developed for women based on actual assessment of their needs. These have been identified through the baseline testing of their knowledge and practice about cervical cancer (in pre-test). The objective of the program was to improve women's awareness and health practices regarding the prevention and early detection of cervical cancer.

2.5.2. Assessment phase:

In this phase the women's needs in knowledge and practice were identified (pre-test) through analysis of the baseline data from the filled questionnaire. Women was greeted respectfully and with kindness and asked about the last menstrual period to rule out pregnancy. The researcher checks that instruments, supplies, and light source are available and ready for use and that the woman has emptied her bladder and washed and rinsed her genital area if necessary. The woman was undressed from the waist down and helped to get on to examining table and draped. The woman was first counseled about the P/V examination then assisted to lie on the examining table in the dorsal recumbent position. The procedure was carried out by the researcher with the assistance of the on duty physician. Before the examination, a non-lubricated sterile Cusco's speculum was gently introduced in the vagina to expose the cervix under the light source. Naked-eye visualization was done prior to the screening test. The examination was done with women lying down in the modified lithotomy position. The perineum and external genitalia are inspected for lesions and the urethral opening and Skene's and Bartholin's glands was checked. The speculum was inserted and the light source was adjusted in order to get the best view of the cervix. The cervix is exposed by sterile speculum in good light, torch, or halogen lamp. The external os, columnar epithelium, squamous epithelium, squamocolumnar junction, and transformation zone are identified. The cervix was checked for cervicitis, ectropion, tumors, nabothian cysts, or ulcers; and a cotton swab was used to remove any discharge, blood or mucus from the cervix. Abnormal signs and symptoms were recorded in the clinical assessment sheet.

III. Developing The Program

First Phase; Planning phase

The women's needs were set into priorities, goals, and objectives which derived from the assessed needs of the women. These objectives were categorized into specific objectives and tasks were ordered in sequential order consistent with teaching and learning process. Then the content of the educational program was prepared. Before the screening proper the women in the study group were educated as a group on cervical cancer screening and the importance of keeping follow-up appointment if found positive. The content of the program addressed the following issues;

- a) What is cervical cancer, risk factors and its premalignant phase.
- b) Various strategies for the prevention of cervical cancer.
- c) What is cervical screening and why they need to do the screening?
- d) Who should have the test?
- e) The Egyptian cervical cancer screening Program and the step in arriving at a definitive diagnosis?
- f) How reliable is cervical screening?

- g) Who will carry out the test and how it will be conducted?
- h) Follow up schedules after screening.
- i) The importance of treating the genital tract infections especially chlamydia and HPV

The program was set in four sessions, teaching methods used include; lecture and group discussion, demonstration and interactive presentation and brain storming. Data-show, handouts and different normal & abnormal cervical models were used. Additionally, the researcher prepared a guide handbook for the women, which covered all items related to cervical cancer based on their identified needs and in view of the pertinent literature.

Second Phase; implementation phase:

The program was conducted in waiting area of the gynecological clinics and the researcher ensured a learning environment that is most convenient to the studied subjects. The time scheduling of educational activities gave considerations to time of sessions that best suit the studied subjects. The researcher set schedule of appointments to meet the women three times/week after dividing them into six subgroups ranged from 18 to 23 women. The educational program was divided into sessions lasting about 60 minutes. Participants were informed about the schedule, and curriculum of the program. The study was done during the period from September 2016 to end of March 2017.

Third phase: Evaluation phase “follow up”

The study tools used in the assessment phase was used as posttest: immediately after the program, one month following the program, to evaluate the effect of the program on the women’s awareness and health practices regarding the prevention and early detection of cervical cancer. The proper diagnosis was confirmed by the on duty physician, medical treatment for infection was prescribed by the doctor and women were counseled about the treatment and the necessity for follow up after 2weeks. Referral for cauterization, conization or cryosurgery or for surgical removal of polyp was also done. Woman accepted further investigation such as colposcopy and guided biopsy were counseled about these important screening tests.

2.6 Limitation of the study:

The most important limitation in this study was the number of women with positive screening tests who were lost to follow up before colposcopy and treatment. Women had to return one week later for a second visit, which many of them did not do and so never received special counseling about the significance of any positive result.

2.7 Statistical Design:

Data entry and statistical analysis were performed using computer software and the statistical package for social sciences (SPSS), version 20. Suitable descriptive statistics were used such as; frequency, percentage, median, range, mean and standard deviation. One-way analysis of variance (ANOVA) and t-test were used to detect the relation between the variables. In addition, correlation coefficient (r) test was used to estimate the closeness association between variables. For all the tests used, statistical significance was considered at p-value < 0.05.

IV. Result

Table 1. Distribution of Socio-Demographic Characteristic among High Risk Studied Women (N=130)

Items	No	%
Age (years)		
<30	22	16.9
30-40	52	40.0
>40	56	43.1
Mean ±SD	38.9 ±7.3	
Educational level		
Illiterate and Read / write	40	30.8
Primary and Preparatory	38	29.2
Secondary and above	52	40.0
Age at Marriage		
<20	36	27.7
20-25	77	59.2
>25	17	13.1
Mean ±SD	21.5 ±2.9	
Family history of cancer		
No	108	83.0
Uterine cancer	4	3.1
Cervical cancer	8	6.2

Breast cancer	7	5.4
Ovarian cancer	3	2.3
Regularity of the menstrual cycle		
Regular	87	67.0
Irregular	43	33.0
Exposure to STD		
No	104	80.0
Yes	26	20.0
Type of STD (n=26)		
Chlamydia	6	23.1
Genital herpes	6	23.1
Genital warts	6	23.1
Human papillomavirus infection	8	19.0
Repeated cervical laceration during previous deliveries (n=190)		
No	74	57.0
Yes	56	43.0

Table:1 shows that the mean age of the respondents more likely to be older than 40 years (43.1%). Majority of the study participants had secondary or higher level of education (40.0%). About one-half of the participants was married at 20-25 years (59.2%) years. The same table also shows that women in the study group had more positive family history of uterine, cervical, breast and ovarian cancer (3.1%,6.2%,5.4%,2.3% respectively), Meanwhile, they were not exposed to STD and having low exposed to human papillomavirus infection (80.0%&19.0 respectively). Moreover, more women were exposed to repeated cervical laceration during previous deliveries 43.0%

Table:2 Distribution of abnormal signs and symptoms of genital tract infection among high risk studied women

Variables	No.	%
Symptoms		
• Excessive vaginal discharge	53	53.0
• External anogenitalia itching	31	31.0
• External anogenitalia ulcers	20	20.0
• Lower abdominal pain	35	35.0
• Dyspareunia	26	26.0
• Post-coital bleeding	19	19.0
• Low back pain	37	37.0
• Chronic pelvic pain	17	17.0
• Vaginal dryness	12	12.0
Signs		
- Vaginal discharge color (n=53)		
▪ Bloody	13	25.0
▪ Dirty/greenish	20	37.5
▪ White/cheesy	20	37.5
- Vaginal discharge odor (n=53)		
▪ No odor	18	33.9
▪ Offensive	35	66.1
- Appearance of cervix		
▪ Normal cervix	37	37.0
▪ Hypertrophy	39	37.0
▪ Redness/congestion	36	36.0
▪ Irregular surface	30	30.0
▪ Distortion	35	35.0
▪ Cervical erosion	35	35.0
▪ Cervical polyp		
▪ Nabothian follicles	33	33.0
▪ Cervicitis	40	40.0
▪ Condyloma	17	17.0
▪ Friable or bleeds on touch erosion	14	14.0
▪ Growth	15	15.0
▪ Nonspecific appearance	12	12.0

Total is not exclusive

As regard the symptoms of genital tract infection (table 2) 53.0% of women were exposed to excessive vaginal discharge. Meanwhile, they were significantly more likely to suffer from lower abdominal pain, low back pain and external anogenitalia itching (37.0% 35.0% and 31.0% respectively). Regarding manifestation of genital tract infection more than one half 66.1% of them have offensive vaginal discharge odor. Moreover, more than one third (40.0%, 37.5%, 37.0%, 37.0%, and 36.0% respectively) of women had cervicitis, greenish or white vaginal discharge color, hypertrophy or congestion and irregular surface.

Table 3. Distribution of High Risk Women According to Their General Knowledge about Cervical Cancer during The Intervention Program Phases (N=130).

Variables	Pre		Post		Follow up		Chi square	
	No.	%	No.	%	No.	%	X ²	P
The meaning of cervical cancer								
I don't know	130	100.0	22	16.9	34	26.2		
Unsatisfactory	0	0.0	30	23.1	38	29.2		
Satisfactory	0	0.0	78	60.0	58	44.6	216.300	<0.001
The meaning of pre-invasive cancer and its types and risk factors								
I don't know	130	100.0	13	10.0	19	14.6		
Unsatisfactory	0	0.0	31	23.8	46	35.4		
Satisfactory	0	0.0	86	66.2	65	50.5	289.0404	<0.001
Precancerous lesion could be prevented and easily treated without metastasis								
I don't know	128	98.5	11	8.5	22	16.9		
Unsatisfactory	1	0.8	23	17.7	22	16.9	267.068	
Satisfactory	1	0.8	96	73.8	86	66.2		
Total score								
Unsatisfactory	130	100.0	41	31.5	59	45.4		
Satisfactory	0	0.0	89	68.5	71	54.6	181.544	<0.001

Table 3 demonstrates statistically significant improvements in the post-intervention knowledge of women in all tested elements about cervical cancer ($p < 0.001$). In total, none of the women had satisfactory knowledge at pre the intervention phase, and this increased to 68.5% at the posttest and 54.6% at the follow up phase of the program ($p < 0.001$).

Table 4: Distribution of High Risk Women According to Their Knowledge about The Diagnosis and Screening of Cervical Cancer During The Intervention Program Phases (N=130).

Variables	Pre		Post		Follow up		Chi square	
	No.	%	No.	%	No.	%	X ²	P
Pap smear test								
I don't know	130	100.0	11	8.5	22	16.9		
Unsatisfactory	0	0.0	34	26.2	48	36.9		
Satisfactory	0	0.0	85	65.4	60	46.2	282.729	<0.001
Schiller's iodine and VIA test								
I don't know	130	100.0	19	14.6	28	21.5		
Unsatisfactory	0	0.0	15	11.5	22	16.9		
Satisfactory	0	0.0	96	73.8	80	61.5	239.516	<0.001
Colposcopy								
I don't know	127	97.7	13	10.0	26	20.0		
Unsatisfactory	1	0.8	23	17.7	32	24.6		
Satisfactory	2	1.5	94	72.3	72	55.4	250.348	<0.001
Biopsy								
I don't know	128	98.5	17	13.1	22	16.9		
Unsatisfactory	0	0.0	15	11.5	22	16.9		
Satisfactory	2	1.5	98	75.4	86	66.2	249.954	<0.001
Total score								
Unsatisfactory	130	100.0	29	22.3	56	43.1		
Satisfactory	0	0.0	101	77.7	74	56.9	170.056	<0.001

The comparison of the satisfactory knowledge about the diagnosis and screening of cervical cancer among the studied women after implementation of the study intervention (Table 4) revealed statistically significant differences in all tested modalities of the diagnosis ($p < 0.001$). Moreover, more than three quarters (77.7%) of women had acquired total score of satisfactory knowledge post intervention and 56.9% retained the information at the follow up phase. The difference observed is statistically significant ($p < 0.001$).

Table 5: Distribution of High Risk Women According to Their Knowledge about Vaccination of Cervical Cancer during The Intervention Program Phases (N=130).

Variables	Pre		Post		Follow up		Chi square	
	No.	%	No.	%	No.	%	X ²	P
Importance of the vaccine in the prevention of cervical cancer								
I don't know	129	99.2	4	3.1	15	11.5		
Unsatisfactory	0	0.0	22	16.9	23	17.7		
Satisfactory	1	0.8	104	80.0	92	70.8	318.503	<0.001
Types, route and dose of vaccination								
I don't know	129	99.2	12	9.2	29	22.3		
Unsatisfactory	1	0.8	22	16.9	25	19.2		
Satisfactory	0	0.0	96	73.8	76	58.5	251.910	<0.001
Indications and contraindications of vaccination								
I don't know	129	99.2	17	13.1	23	17.7		
Unsatisfactory	1	0.8	18	13.8	18	13.8		
Satisfactory	0	0.0	95	73.1	89	68.5	248.838	<0.001
Total score								
Unsatisfactory	130	100.0	33	25.4	50	38.5		
Satisfactory	0	0.0	97	74.6	80	61.5	166.527	<0.001

Table:5 shows that almost none of the entire sample before the study intervention had satisfactory knowledge about the role of HPV vaccine in the prevention of cervical cancer. After the implementation of the program the vast majority of the sample recognized its importance and the detailed information about vaccination against HPV. Not only that but also 61.5% of them had retained satisfactory total score of knowledge concerning this important aspect. Differences observed are highly significant (p<0.001).

Table 6: Distribution of High Risk Women According to Their Knowledge about The Management of The Precancerous Lesion during The Intervention Program Phases (N=130).

Variables	Pre		Post		Follow up		Chi square	
	No.	%	No.	%	No.	%	X ²	P
The use of ablation in the treatment of CIN								
I don't know	130	100.0	10	7.7	22	16.9		
Unsatisfactory	0	0.0	14	10.8	17	13.1		
Satisfactory	0	0.0	106	81.5	91	70.0	297.426	<0.001
The use of excision and hysterectomy for the treatment of CIN								
I don't know	130	100.0	9	6.9	18	13.8		
Unsatisfactory	0	0.0	14	10.8	27	20.8		
Satisfactory	0	0.0	107	82.3	85	65.4	308.455	<0.001
Follow up patients treated by repeated pap smears, colposcopy and HPV-DNA testing every 3-6 months for 2 years								
I don't know	130	100.0	19	14.6	21	16.2		
Unsatisfactory	0	0.0	18	13.8	33	25.4		
Satisfactory	0	0.0	93	71.5	76	58.5	249.891	<0.001
Total score								
Unsatisfactory	130	100.0	35	26.9	51	39.2		
Satisfactory	0	0.0	95	73.1	79	60.8	161.068	<0.001

Table 5 shows that the entire studied sample knew nothing before the intervention about the management of the precancerous lesion of cervical cancer. After implementation of the study intervention, almost three quarters (73.1%) of them obtained total satisfactory score of knowledge about this important protocol of management and 60.8% retained the satisfactory information during the follow up phase, The differences observed were statistically significant (p<0.001).

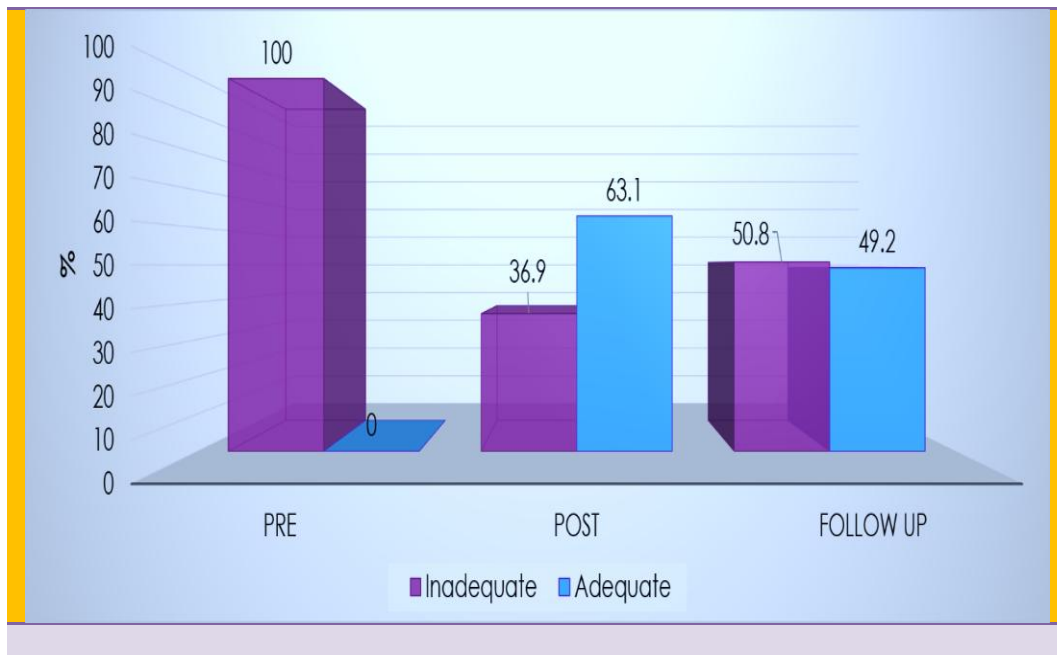


Figure 1: Distribution of high risk women according to their total score of the knowledge about cervical cancer during the intervention program phases (n=130). Fig (1) showed that pre-program all of the study subjects didn't have any satisfactory knowledge about cervical cancer, but immediately post-program most of them (63.1%) had adequate total knowledge score. Regarding the follow-up phase the adequate total knowledge percent decreased to reach 50.8%.



Figure 2. Distribution of women according to their acceptance of screening (n=130). At the end of the follow up phase of the program the researcher evaluated the overall success of the intervention program by assessing women acceptance to screening (figure 2). It demonstrates that out of 130 women 80 (61.5%) had performed the screening tests for cervical cancer. And 10 women (7.7%) had positive result and thus referred for further treatment.

V. Discussion

Cervical cancer is one of the most prevalent malignant neoplasms among women in developing countries. Invasive cervical cancer is preceded by a long premalignant phase known as cervical intraepithelial neoplasia (CIN 2). The goal of cervical cancer screening is the detection and treatment of pre-cancerous lesions before cancer develops. To detect cervical intraepithelial neoplasia grades 2 or 3 (CIN 2–3), which are considered to be true precancerous lesions, we need a well implemented secondary prevention system that provides screening for all women at risk as well as treatment of detected abnormalities according to local policy. Screening is a secondary level of prevention which involves testing asymptomatic or symptomatic women in order to detect or exclude disorders at an early stage. Screening for prevention or diagnosis of early stage disease and accurate staging are essential for appropriate and timely treatment so that deaths are prevented and quality life is possible, fertility preserved even after having cervical cancer. Cervical cancer is almost completely preventable. Still it continues to kill globally many women (Chhabra, 2016). Close to 80% of invasive cancer cases occur in developing countries, where either there are no screening programs or the programs are poorly developed and inefficient. Early treatment prevents up to 80% of cervical cancers in these countries. 10 Therefore, the present study was carried out to assess the impact of a designed educational nursing program for high risk women on their awareness and health practices regarding the prevention and management of the precancerous lesion of cancer cervix. According to the present study, the majority of the women were in the age group of 30 years and more. In the same line, Goyal et al., study (2014) in Ludhiana, Punjab, India about

“the role of VIA in cervical cancer screening” found that, the mean age of women presenting to the OPD was 39.4 years. Similarly, Agarwal et al., study(2016) titled “Visual inspection with acetic acid for cervical cancer screening in a tertiary health care” reported that their study sample had a mean age of 38.6 ± 6.7 years. Recently, Abiodun et al., study (2017) in Oyo State, Nigeria which “Assess Comparative efficacy of visual inspection with acetic acid versus cytology for cervical cancer screening” reported that, the mean age of the participants was 42.1 ± 8.8 years and the majority of the subjects (43.4%) were between 40 to 49 years. Conversely Pourasad-Shahrak et al., study (2015) in Alzahra, Therapeutic Educational Centre, Tabriz, Iran titled “comparing the results of Pap smear and Direct Visual Inspection (DVI) with 5% acetic acid in cervical cancer screening” found that their study sample had a lower mean age of 33 ± 7.6 years. Also Shaheen, et al., (2014) in India reported that, the mean age was 34.5 ± 7.4 years. In Egypt, Saleh study (2014) titled “can visual inspection with acetic acid be used as an alternative to Pap smear in screening cervical cancer?” found that the mean age of the subjects was 36.2 ± 6.2 years. The discrepancy among the above mentioned results could be attributed to the difference in sample size and the criteria of sample selection as well as the design used in the research. Concerning women’s age at marriage, the current result revealed that about two thirds of women were married at the age of <25 years with a mean of 21.5 ± 2.9 years. This is in accordance with Goyal et al., (2014) who reported that the mean age of first coitus was 20.7 ± 3.4 years. Meanwhile, Ibrahim study (2013) in Khartoum City, Sudan titled “Cervical cancer, risk factors and feasibility of visual inspection with acetic acid screening methods in Khartoum State-Sudan” revealed that the mean age of sexual initiation was 20.1 ± 2.1 . Moreover, the mean age of women’s sexual debut in the study of Abiodun et al., (2017) was 23.4 ± 4.8 years. Conversely, Desire et al., study (2016) in the general referral hospital Kayembe in Mbuji-Mayi, at Democratic Republic of Congo about “Visual inspection with acetic acid and Lugol’s iodine in cervical cancer screening” reported that the average age for first sexual intercourse was 17.5 ± 0.7 years. Similarly Agarwal et al., (2016) reported that the mean age of sexual life onset had been 19 ± 3.2 years. The differences in the previous studies regarding the age of marriage and first sexual intercourse was related to the cultural background of each area. As for parity, the present result revealed that the majority of the respondents were multigravida and multipara and one fifth of them had their age at first birth below 20 years. This is in congruence with the finding of Agarwal et al., (2016) who found that 13.8% of the women were nulliparous, 45.6% had one or two live births, 28.6% had three or four, and 12.0% had five or more. The same finding is also supported by Desire et al., study (2016) who found that 86.0% of cases were multiparous. Similarly, Abiodun et al., (2017) noticed that about one fifth of the respondents (19.8%) were grand-multiparous. On the contrary, Ibrahim (2013) found that 32.2% of the screened women were nulliparous and 64.8% were parous and the risk of positive VIA was significantly higher among parous than among nulliparous women. This is based on the fact that multiparous women are more likely subjected to genital tract injuries or infection. In this respect the same author mentioned that many parous women with cervical cancer do not get treated properly and the factors include lack of access to the health care system, access to a medical specialist, lack of third-party coverage and lack of the necessary social support to help patients. In addition, patient’s fear and mistrust of the health-care system make situation more complex for complete treatment. In Chhabra (2016) study it was revealed that patients once told that it was cancer and advanced, though there were treatment options, just disappeared from outpatient or after biopsy or at initiation of the therapy. Concerning the current gynecological complaints the present results revealed that, more than half of women were complaining from excessive vaginal discharge with offensive odor in more than two thirds of them. The color of discharge was bloody in one fourth of the participants, greenish in more than one third and cheesy in almost two fifth of the participants. Moreover, one fifth of the studied women complained of post-coital bleeding. This finding was in agreement with Saleh, (2013) who reported that, the most common presenting symptom was vaginal discharge (80%) and the most common finding on speculum examination was chronic cervicitis (38%). Sherigar et al., study (2010) about “Cervical Cancer Screening by Visual Inspection with Acetic Acid- Inter observer Variability between Nurse and Physician” reported that the common presenting complaint was persistent white discharge per vaginum seen in 64.2% followed by suspicious looking cervix in 21.4%, & post-coital bleeding in 5.6%. In this respect Goyal et al., (2014) mentioned that, on analyzing the relationship of presenting complaints with VIA results, 26.3% women presenting with discharge per vaginum were VIA positive. The most significant finding was seen in patients presenting with post-coital bleeding where 61.9% were VIA positive. In women with cervical erosion, the incidence of positive VIA was 24.2% which was almost similar to that found in hypertrophied/chronic cervicitis 26.1%. Ibrahim, (2013) added that before screening, all women should be subjected to counselling and clinical assessment; 90.8% women were found to have a normal cervix and 9.2% had signs of cervical infection. Such infections included chlamydia, bacterial and Candida albican. They received appropriate treatment and were screened after two weeks after the recovery from the infection. This corresponds well with the finding of the present study where a sizable number of the high risk women were exposed to cervicitis, chlamydia and other genital tract infection. It is well documented that HPV is the central etiologic factor for cervical cancer, and prior studies suggested C. trachomatis may act as

an HPV cofactor. It is highly prevalent among sexually active young women and can infect the cervix for long periods of time. *C. trachomatis* often causes cervicitis, which is a chronic infection of the endo-cervical cells of the transformation zone. Such inflammation may predispose women to other STDs, including genital HPV infection, by damaging epithelial integrity. Recent studies suggested that a history of *C. trachomatis* infection was associated with persistence of oncogenic HPV infections, and other studies have shown that persistent HPV infections are necessary for progression to high-grade cervical intraepithelial neoplasia (CIN) and carcinoma. According to the assessment of the baseline knowledge, and practice pertaining to cervical cancer, the present study finding revealed that the mean scores of women's knowledge about it; definition, symptoms, risk factors, screening and management before the program implementation were generally deficient. This may be due to absence of designed educational program about this problem provided to those women in Tanta. The foregoing findings confirm the positive effect of the educational program in improving women knowledge about cervical cancer. This may be attributed to the fact that the researcher used simple applications and simulations in order to simplify the information and help attendants to apply their knowledge to practice. This corresponds well with Abiodun et al., (2014) & El Sharkawy et al., (2014) who reported significant increase in women knowledge about cervical cancer after the intervention due to the appropriate selected health education methods. Moreover, Al-Shaikh et al., (2017) revealed that the level of knowledge about clinical presentation of cervical cancer had changed significantly after intervention. On the other hand, Kumar et al., (2011) study in Mumbai urban slum about the level of cancer awareness among women of low socioeconomic status, found that women awareness about cervical cancer was high probably due to various ongoing interventions in the study. Pre-intervention data indicated that there was no knowledge about HPV vaccine. This is quite similar to the finding of Al-Shaikh, et al., (2017) who found that knowledge about HPV and the importance of vaccination was very poor as compared to other items. Moreover, a study conducted in Abu Dhabi, the United Arab Emirates (UAE), demonstrated that despite free administration of HPV vaccine for all girls entering grade 11 in the school as a school based vaccination program offered by the government, only 29.0% women knew about HPV vaccine. This emphasizes the crucial role of public awareness campaigns and workshops in educating the females about this preventable disease (Ortashi et al 2013). The results of the current study revealed that very few women had heard about the diagnostic measures namely; Sciller's iodine and VIA test, Pap test, colposcopy and biopsy as well as the management of the precancerous lesion of cervical cancer This is low when compared to Hoque (2010) who studied cervical cancer awareness and preventive behavior among female university students in South Africa mentioning that, 31.0% of participants had heard about the Pap smear test and among them 33.0% knew that Pap smear is the only method used for detection or prevention of cervical cancer and few women who knew the management measures of the precancerous lesion of cervical cancer. On the same line, O'Brien et al., (2010) reported that, the randomized trial of an educational intervention demonstrated improved Pap screening rates, in addition to increased knowledge about cervical cancer and Pap test. This is supported by Parhizkar et al., study (2013) in Malaysia who revealed an increase in indication of the Pap test after intervention and underlined the necessity of disseminating factual information about the diagnostic measures of the precancerous lesion of cervical cancer. Likewise, Mary & D'Sa, (2014) study in India and Dirksing, (2016) study about Implementation and Evaluation of a Social Media Campaign to Promote Cervical Cancer Prevention and Control in Columbia found that the mean post-test score of knowledge was significantly higher than their mean pre-test score indicating the efficacy of the program in improving the knowledge In the same line, in his study also found the same results. In addition, Gana, (2016) revealed that the awareness about the diagnostic measures and management modalities of the precancerous lesion of cervical cancer was very poor, as about one tenth of respondents in both groups in his study had heard about it. Post-intervention assessment showed increased interest of the studied subjects to be screened for cervical cancer with the result that few positive cases were detected. Moreover patients suffering from the current gynecological condition were ready to use the prescribed treatment and follow up the recommended instructions. Such findings reflect the success of the educational program in changing women behavior because changing behavior is not an objective which could be easily accessible. Hence it may be attributed to the horrible feeling of each participant toward such disease of unknown cause and poor prognosis. In this respect, Kumar et al., (2015), in his study, in India, clarified that there was low acceptance of cancer screening among women attending primary care public sector facilities in Villupuram, India. They suggested that counseling and health education should be given more emphasis prior to the screening in the health facility to allay the fears and to address the misperceptions.

VI. Conclusion

According to the findings of the present study, it can be concluded that:

High risk women were more likely to be in the age group of 30 years and more, married at the age of 20-25 years and almost one fifth of the sample had family history of cancer. They also had high parity as well as more episiotomies and vaginal lacerations. Some women were exposed to STD, of that chlamydia were the most

common, and followed by an equal percentage of genital herpes and genital warts. Gynecological signs and symptoms were reported by the majority of the sample. Moreover, before the educational program the studied sample had deficient knowledge about cervical cancer. Post intervention there was significant improvement in women's knowledge and practice regarding cervical cancer screening as well as treatment of their gynecological symptom.

VII. Recommendations

In the light of the findings of this study, the following recommendations are proposed:

Training programs should be proposed for maternity nurses to update their knowledge about the screening and management of the precancerous lesion of cancer cervix. The developed manual booklet with its simple instructions and illustrations should be utilized in hospitals as a teaching aid for gynecological patients. Women should be warned against the complications of STD, HPV, chlamydia and their recurrence. Patients should complete their treatment together with their husbands and the standard schedule for further screening and check-up should be followed.

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Reference

- [1]. Abd El-Azim S, Lotfy M and Omr A (2011): Detection of human papillomavirus genotypes in cervical intraepithelial neoplasia and invasive cancer patients: Sharkia Governorate, Egypt. *Clin Lab*; 57(6):363-371.
- [2]. Abiodun O., Olu-Abiodun O., Sotunsa J. and Oluwole F., (2014): Impact of health education intervention on knowledge and perception of cervical cancer and cervical screening uptake among adult women in rural communities in Nigeria; *BMC Public Health* 2014, 14:814.
- [3]. Abiodun O., Olu-Abiodun O., Sotunsa J. and Oluwole F., (2017): Comparative efficacy of visual inspection with acetic acid versus cytology for cervical cancer screening in Ogbomoso, Nigeria, *Int J Reprod Contracept Obstet Gynecol*, 6(9): 3742-3747.
- [4]. Agarwal Shaily, Gupta R, Agarwal A, Pandey K, Gupta N, Katiyar A, (2016): Visual inspection with acetic acid for cervical cancer screening in a tertiary health care centre, *International Journal of Reproduction, Contraception, Obstetrics and Gynecology* , *Reprod Contracept Obstet Gynecol*. Mar;5(3):752-756.
- [5]. Agarwal. S, Gupta R, Agarwal A, Pandey K, Gupta N, Katiyar A, (2016): Visual inspection with acetic acid for cervical cancer screening in a tertiary health care centre, *Int J Reprod Contracept Obstet Gynecol*, 5(3):752-756.
- [6]. AL-SHAIKH G, SYED S, FAYED A, ET AL (2017): EFFECTIVENESS OF HEALTH EDUCATION PROGRAMME: LEVEL OF KNOWLEDGE ABOUT PREVENTION OF CERVICAL CANCER AMONG SAUDI FEMALE HEALTHCARE STUDENTS, *J PAK MED ASSOC*, 67: MAY 30 513-519
- [7]. American Cancer Society (2013): What are the key statistics about cervical cancer? Available from: <http://www.cancer.org/Cancer/CervicalCancer/DetailedGuide/cervicalcancerkey-statistics/2013>
- [8]. Chhabra S (2016): cervical-cancer-preventable-treatable-but-continues-to-kill-women-<https://www.omicsonline.org/open-access/> accessed at 10/2017 .
- [9]. Chhabra S (2016): Early Stage Cervical Cancer, *Therapy for Reproductive Health and Quality Survival* . *Open Medicine Journal* 3: 1-11.
- [10]. Desire B , Philippe C, Thierry K, Félix K, Wembodinga G, et al (2016): Visual inspection with acetic acid and Lugol's iodine in cervical cancer screening at the general referral hospital Kayembe in Mbuji-Mayi, Democratic Republic of Congo, *Pan Afr Med J*; 23: 64.
- [11]. Dirksing K. N., (2016): Implementation and Evaluation of a Social Media Campaign to Promote Cervical Cancer Prevention and Control; University of South Carolina – Columbia; Spring 5-5.
- [12]. EL Sharkawy A., Hassan M., Abd El-Sattar R., (2014): Effect of Nursing Educational Guidelines on Women's Awareness, Health Practices and Beliefs Regarding Prevention and Early Detection of Breast and Cervical Cancer. *Life Sci J* 2014;11(6):707-724] (ISSN: 1097-8135).
- [13]. Farshbaf-Khalili A, Salehi-Pourmehr H, Shahnazi M, Yaghoubi S, Gahremani-Nasab P (2015): Cervical cancer screening in women referred to healthcare centres in Tabriz, Iran. *Niger Med J*; 56:28-34.
- [14]. Ferlay J, Shin HR, Bray F, Forman D, Mathers C and Parkin DM (2010): Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *Int J Cancer*; 127(12):2893-917.
- [15]. Goyal S Tandon P, Bhutani N, Gill B (2014): To study the role of visual inspection of cervix with acetic acid (VIA) in cervical cancer screening, *Reprod Contracept Obstet Gynecol*; 3(3):684-687.
- [16]. Hend S. Saleh (2014): Can visual inspection with acetic acid be used as an alternative to Pap smear in screening cervical cancer? *Middle East Fertility Society Journal* (2014) 19, 187-191.
- [17]. Hoque E. and Hoque M., (2009): Knowledge of and Attitude Towards Cervical Cancer among Female University Students in South Africa. *South African Journal Epidemiology Infection*, 24(1) pp. 21-24.
- [18]. Hoque ME et al (2010): Cervical cancer awareness and preventive behaviour among female university students in South Africa. *Asian Pac J Cancer Prev*. 11(1):127-30.
- [19]. Human Papillomavirus and Related Diseases Report, (2015): INDIA Version posted on www.hpvcentre.net in March 20th.
- [20]. Ibrahim A, (2013): Cervical Cancer, Risk Factors and Feasibility of Visual Inspection with Acetic Acid Screening Method in Khartoum State, Sudan, Unit for Health Promotion Research, Series A; No 6. 2013 ISBN: 978-87-91245-14-5. Unit for Health Promotion Research, Series A; No 6. 2013 ISBN: 978-87-91245-14-5.
- [21]. Jebakumar Z., Nondo HS and Sarfo SK (2014): Nurses Role in Cervical Cancer Prevention and its Treatment - A Critical Review, *Asian Pacific Journal of Nursing*;1(1):1-5.

- [22]. Jhingran A, Russel AH, Seiden MV, et al (2014): Cancers of the cervix, vagina and vulva. In: Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, Pa; Elsevier: 1534-1574.
- [23]. Kjaer SK, van den Brule AJ, Paull G, Svare EI, Sherman ME, Thomsen BL, Sunsum M, Bock JE, Poll PA, Meijer CJ (2002): Type specific persistence of high risk human papillomavirus (HPV) as indicator of high grade cervical squamous intraepithelial lesions in young women: population based prospective follow up study. *BMJ*. ;325:572. [PMC free article] [PubMed].
- [24]. Kumar M., Shanmugapriya P. and Kaur P., (2015): Acceptance of cervical and breast cancer screening and cancer awareness among women in Villupuram, Tamil Nadu, India: A cross sectional survey *clinical epidemiology and global health* (2015) s 63 – s 68
- [25]. Mahmoobeh S, Diane S, Philip EC (2007): Cervical cancer prevention: Cervical screening, science in evolution. *ObstetGynecolClin N Am.*;34:739-60.
- [26]. Mary B., and D'Sa J.L., (2014): Evaluation of an educational program on cervical cancer for rural women in Mangalore, Southern India. *Asia Pac J Cancer Prev* 2014 ;15: 6603-8.
- [27]. Mary B1, D'Sa J.L.(2014): Evaluation of an educational program on cervical cancer for rural women in Mangalore, Southern India. *Asian Pac J Cancer Prev*. 2014;15(16):6603-8.
- [28]. National Cancer Registry (2002): The National Cancer Registry Newsletter, Ministry of Health and Population, Egypt.
- [29]. Norma Martinez, Rogers, Adelita G. Cantu,(2009): The Nurse's Role in the Prevention of Cervical Cancer Among Underserved and Minority Populations, *Journal of Community Health*. Volume 34, Issue 2, pp 135–143.
- [30]. O'Brien, J , Halbert C, Bixby, R, Pimentel S, Judy A. Shea, (2010): Community Health Worker Intervention to Decrease Cervical Cancer Disparities in Hispanic Women, *J Gen Intern Med*. 2010 Nov; 25(11): 1186–1192. Published online 2010 Jul 7. doi: 10.1007/s11606-010-1434-6, PMID: PMC2947642.
- [31]. Ortashi O, Raheel H, ShalalM, Osman N.(2013): Awareness and knowledge about human papillomavirus infection and vaccination among women in UAE. *Asian Pac J Cancer Prev*. 14(10):6077-6080.
- [32]. Ortashi O1, Shallal M, Osman N, Raheel H.(2012): Knowledge, Attitude and Practice of School Nurses in the United Arab Emirates about HPV Infection and Vaccine, *Asian Pac J Cancer Prev*. 98;13(12):6481-6484.
- [33]. Parhizkar S., Abdul Latiff L. and Afshari M., (2013): Disseminating Cervical Cancer Knowledge: Impact of a Public Seminar; *International Journal of Learning & Development* 2013, Vol. 3, No. 1- ISSN 2164-4063.
- [34]. Pourasad-Shahrok S1, Salehi-Pourmehr H2, Mostafa-Garebaghi P3, Asghari-Jafarabadi M4, Malakouti J2, Hagsay M5(2015): Comparing the results of Pap smear and Direct Visual Inspection (DVI) with 5% acetic acid in cervical cancers screening. *Niger Med J*. 2015 Jan-Feb;56(1):35-8. doi: 10.4103/0300- 652.149168.
- [35]. Sherigar B, Dalal A, Durdi G, Pujar Y, Dhumale H.(2010): Cervical cancer screening by visual inspection with acetic acid - interobserver variability between nurse and physician. *Asian Pac J Cancer Prev*; 11(2):323-6.
- [36]. Silins I, Ryd W, Strand A, Wadell G, et al(2005). Chlamydia trachomatis infection and persistence of human papillomavirus. *Int J Cancer*. ;116:110–115. [PubMed].
- [37]. Singh GK, Williams SD, Siahpush M, Mulhollen A (2012): Socioeconomic, rural-urban, and racial inequalities in US cancer mortality: Part I-All cancers and lung cancer and Part II-Colorectal, prostate, breast, and cervical cancers. *J Cancer Epidemiol*; 1-27. [<http://dx.doi.org/10.1155/2011/107497>] [PMID: 22496688].

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