Efficacy of Educational Sessions on Venous Thromboembolism Prevention and Emotional Status among Women Having Major Abdomino-Pelvic Surgery

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Abstract

Background: Following significant abdominal and pelvic surgery, venous thromboembolism—which includes pulmonary embolism and deep vein thrombosis—is a dangerous consequence that doubles the risk of morbidity and death. **Aim**: To evaluate the efficacy of educational sessions on venous thromboembolism prevention and emotional status among Women having Major abdomino-pelvic surgery. **Design**: A quasi-experimental research design pre and post-one group was used to achieve the aim of this study. **Setting**: The study was conducted in study was conducted at the gynecological department and outpatient clinic (for post-operative follow-up) at Mansoura University Hospital. This setting was selected due to the high flow rate of cases additionally it serves the biggest region of the population. **Sample**: A convenient sample of 100 women with gynecological tumors undergoing major abdomino-pelvic surgery was recruited for this study was collected during six months aged (20-65) years were included. **Tools of data collection**: Four tools were utilized in this study including **Tool 1**: An interview scheduled questionnaire, **Tool 2**: Deep vein thrombosis risk factors assessment sheet, **Tool 3**: Deep vein thrombosis assessment sheet, and **Tool (4**): Anxiety and Depression Scale (HADS). **Results**: there were statistically significant differences and improvements in all items of knowledge about venous thromboembolism among the studied women having major abdomino-pelvic surgery pre and post-educational session's implementation. Most (96%) women with major abdomino-pelvic surgery had unsatisfactory total knowledge scores in the pre-test phase. In comparison, 84 % of them had total satisfactory knowledge scores post-educational session implementation. There were statistically significant differences and improvements in all items of compliance with VTE preventive measures among the studied women having major abdomino-pelvic surgery pre and post-educational session's implementation. Also, demonstrates that there was a statisticall y significant difference i n t h e Hospital Anxiety and Depression scale scores that were reported among the studied women having major abdomino-pelvic surgery pre and post-educational session's implementation. **Conclusion**: Educational session implementation has a positive effect on Venous Thromboembolism Prevention and emotional status among Women having Major abdominal pelvic Surgery. **Recommendations**: Educational sessions should be implemented as an essential part of routine care for all women having major abdomino-pelvic Surgery.

Keywords: Educational sessions, Emotional status, Venous thromboembolism prevention, Women having major abdomino-pelvic Surgery.

Introduction:

Gynecologic tumors are the most prevalent type of tumor. Any tumor that originates in a woman's reproductive organs or other parts of her pelvis is referred to as a female gynecologic neoplasm; this category encompasses a broad range of tumors with different epidemiological features, either benign or malignant. A malignant one considering that it is one of the main causes of illness and death for women worldwide. For more serious diseases, surgery is typically the best course of action (**Abd El-Aziz, 2019).**

A serious complication that doubles the risk of morbidity and death following major abdominal and pelvic surgery is deep vein thrombosis (DVT) and pulmonary embolism (PE). It ranks as the second most common

cause of death for cancer patients. A combination of personal risk factors and the type of surgery is what determines the risk of DVT in surgical patients. Numerous pathological diseases that increase the risk of DVT and other serious illnesses have been related to it (**Guyatt et al., 2019**).

About 20% of cancer patients have DVT, which is four to seven times more common in cancer patients than in the general population. The risk varies according to the kind of cancer and the tumor's burden. Women who have gynecological tumors and are having gynecological surgery are more likely to develop DVT due to the tumor and the abdominopelvic procedure that follows, as well as other risk factors like advanced age, a high body mass index (BMI), comorbidities, immobility, hormone therapy, venous obstruction, thrombin development, and treatment methods (e.g., long operative time, chemotherapy, and targeted therapy) (**Instant, et al., 2021).**

Additionally, anesthesia during surgery may cause venous distension, and prolonged bed rest after surgery may negatively affect the patient's hemodynamics, making blood flow stagnation worse. One harmful consequence of surgery is blood hypercoagulation, and gynecologic surgery is linked to the development of DVT (**Tang, 2019).**

According to a previous study, patients with gynecological cancer had a 14-fold higher risk of DVT than those without the disease. DVT and PE rates ranged from 1 percent to 2.6% and 1 percent to 40%, respectively, after the first DVT event. The 28-day case fatality rate was 11%, and survivors had a lower quality of life even after treatment. Therefore, preventing DVT in these patients should be of utmost importance (**Instin et al., 2021).**

According to the American Society of Clinical Oncology (ASCO), since all cancer patients are deemed high-risk, the incidence of VTE can be reduced by 50–70% by initiating preventive measures before gynecological procedures (**Hopikins et al., 2022**). According to the National Comprehensive Cancer Network (NCCN), surgical operations receive thrombo-prophylaxis with either pharmacological or non-pharmacological.

These precautions, which are advised for high-risk individuals, should be taken at least seven to ten days before surgery. Even though preoperative low molecular weight heparin (LMWH) completely prevented PE and DVT in individuals having gynecological surgery, DVT still occurs following the procedure. Furthermore, clinical DVT diagnosis is extremely imprecise; only 50% of cases are recognized based on symptoms (**Key et al., 2020**).

Similar to diagnosis, awareness of the issue is the first step in prevention. By encouraging adherence to necessary preventative measures, patients' awareness of VTE prevention can improve patient engagement in safety. Additionally, it can help patients' self-evaluate and self-report DVT symptoms both during and after hospitalization, enabling them to receive timely medical attention. Given the current trend of shorter hospital stays, this is particularly important (**Harrington, 2019).** When it comes to preventing thrombosis, nurses are at the forefront. By helping with diagnosis and risk assessment, putting preventative measures in place quickly, and offering patients with venous thromboembolism vital psychological and educational support, professional nursing intervention can save lives (**Shahin, 2019).**

Many prior studies have supported the importance of the nursing position in disease prevention. For example, **Mohammed et al. (2019)** suggested that to prevent DVT, the patient should be mobilized as soon as possible, which encourages adherence to pharmacological thrombo-prophylaxis. Patients who did not understand the purpose of their medication adherence frequently refused anticoagulant injections, avoided eating foods high in fat and sugar, avoided wearing tight clothing, especially leggings, and kept warm at all times. They also advised patients to avoid sitting for extended periods, lying with their legs down, and elevating their legs. While making sure that active or passive movement including flexing, relaxing, and foot rotation

are performed independently or with assistance (**El-Sayed et al., 2019**).

Significance of the study:

In patients undergoing general surgery or medicine, the relative risk of DVT is between 10% and 40% in the absence of prophylaxis. According to Ikeda and **Kan-no (2019**), the postoperative incidence of DVT was 1.14 percent in women with gynecological disease, 0.3% in women undergoing gynecological surgery, and 4% in patients with gynecological malignancy.

In Egypt, 44.9 percent of all female cancers were gynecological tumors (**Abd El-Aziz et al., 2019).** According to **Sayed and Omar (2018**), there are about 510 instances of gynecological cancers that seek treatment at the Oncology Gynecological Clinic annually in Egypt, where the population was approximately 6% of all cancer cases.

Therefore, the actual incidence of postoperative DVT may be higher than reported, as about half of DVT patients did not speak. A prior pilot prospective research found that the postoperative incidence of DVT could reach 15.6%. According to **Qu et al. (2019**), asymptomatic DVT has been demonstrated to increase the risk of postthrombotic syndrome (PTS). Thus, the primary focus of current research is on DVT prevention and therapy**.** So this study was conducted to evaluate the efficacy of educational sessions on Venous Thromboembolism Prevention and emotional status among Women having Major Abdomino-Pelvic Surgery.

Aim of the study

This study aimed to evaluate the efficacy of evaluating the efficacy of educational sessions on venous thromboembolism prevention and emotional status among women having major abdominopelvic Surgery**.**

Research hypotheses:

H1: Women having Major Abdomino-Pelvic Surgery who receive the educational sessions are expected to experience improved knowledge and practice post-educational sessions' application than pre-application.

H2: Women having Major Abdomino-Pelvic Surgery who receive the educational sessions are expected to experience improved emotional status with less anxiety, stress, and depression levels post-educational sessions application than pre-application.

Subjects and Methods:

Research design:

A quasi-experimental research design pre and post-one group was used to achieve the aim of this study.

Setting:

The study was conducted in study was conducted at the gynecological department and outpatient clinic (for post-operative follow-up) at Mansoura University Hospital. This setting was selected due to the high flow rate of cases additionally it serves the biggest region of the population.

Subjects:

A convenient sample of 100 women with gynecological tumors undergoing major abdomino-pelvic surgery was recruited for this study collected six months aged (20-65) years was included.

Tools of data collection:

Four tools were used to collect data as follows:

Tool 1: An interview scheduled questionnaire: It was created by the researchers using a variety of local and foreign literature sources, and it was divided into three parts:

Part 1: This had information on demographic data like age, occupation level of education, and place of residence.

Part **2:** contained information about the woman's medical history, the kind of operation, its length, and any complications.

Part **3**: Assessment of women's knowledge about DVT**:** The researcher produced this section using current, national, and international literature as inspiration. It sought to determine the precise level of knowledge that women had about venous thromboembolism (DVT), including its

definition, risk factors, symptoms, diagnosis, and prevention. Both before and after the nursing-led intervention application, this section was utilized. It included a valid and dependable survey. Due to Cronbach's Alpha being 0.892, a reliability test was performed.

Scoring systems: The total score of knowledge was 10 degrees. Each correct answer had a (1) mark while the incorrect one had a (zero). These scores were converted into a percentage score.

The total score was divided into two categories as follows:
Satisfactory: when the score was more than or equal to 60%.
Un Satisfactory: when the score was > 60%.

Part 4: Women's compliance with the DVT **preventive measures**: The researchers created this tool, which contained eight claims, based on worldwide literature (**Bouchard-Fortier, 2014**). It was employed to evaluate how well women followed DVT prevention guidelines. They concentrated on early ambulation, positioning and turning, leg and deep breathing exercises, the use of elastic stock, food intake, hydration, and preventive measures against anticoagulants. Both before and right after the nursing-led intervention, the instrument was utilized. Cronbach's Alpha values for the reliability test were 0.992 and 0.952, respectively.
Scoring system: A three-point Likert scale was used to score the responses: never scored (0), sometimes scored (1), and always scored (2).
Total score: the overall score into two categories: poor compliance <70% and good compliance >70%.

Tool 2: Deep vein thrombosis risk factors assessment sheet: The researcher used it, which was adopted from Autar (1996), to identify patients who were at risk and group them based on risk variables. Seven separate categories—age, mobility, body mass index, special risk, trauma risk, surgical intervention, and high-risk diseases—make up the scale.
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Scoring system: Low risk is indicated by a score of less than 10, moderate risk is indicated by a score between 11 and 14, and high risk is indicated by a score of more than 15.

Tool 3: Deep vein thrombosis assessment sheet: To assess the patient's signs and symptoms of DVT, it was taken from **Hirsh and Lee (2002**). There were three components to it:

Part one: **Clinical assessment**. The following symptoms were included in order to assess the patient's DVT symptoms: calf pain, leg edema, cyanosis, warmth, localized redness, and soreness. Not able to sense the dorsalis pedis pulse.

Part two: **Homan's test**: Dorsiflexion of the foot is a subjective and active test that the patient is asked to perform. Calf pain was a sign of a positive test and the existence of deep vein thrombosis.

Part three: **Duplex ultrasound**: If there was a clot, it indicated a positive outcome and the existence of DVT; if there was not, it indicated a negative outcome and the absence of DVT.

Tool (4): Anxiety and Depression Scale (HADS). HADS was originally developed by **Zigmond and Snaith (1983)** to determine the risk of anxiety and depression in patients with physical illness and to measure the level and severity of change in those conditions. The 14-item HADS comprises two subscales designed to assess feelings of anxiety (HADS-A) and depression (HADS-D) during the previous week on a 4-point scale from 1 (not at all) to 4 (most of the time). Higher scores reflect higher levels of anxiety and depressive symptomatology. The Chinese version of HADS is reported to be valid and reliable for Chinese (**Ye & Xu, 1993**). The 1-week test-retest reliability reported high, and the criterion-related validity between HADS-A and the Self-rating Anxiety Scale (SAS) was 0.92 ($p \leq .01$). The criterion-related validity of HADS-D compared with the Self-rating Depression Scale (SDS) was 0.84 ($p \leq .01$). Cronbach's alpha coefficients for anxiety and depression were .86

and .80, respectively, in the present study.

Data collection phase (Fieldwork)

The researcher began collecting data within six months from the first of July 2024 to the first of November 2024, after receiving permission to perform the study. The data was collected two days per week (Monday and Wednesday). The assessment was done on all the study samples 100 geriatric patients. Afterward, the researcher introduced herself, described the study's goals, and invited the women / to take part in the study voluntarily. Each woman who participated in the study was interviewed individually in the previously selected setting. The sheet was filled out by the researcher, who asked the women and documented their answers, which were filled out and completed in 30 and 40 minutes.

Methods:

The educational sessions about venous thromboembolism prevention were implemented according to the following phases:

Preparatory phase

The tools were developed after reviewing the current, recent, national, and international related literature covering all aspects of the research subjects using the available textbooks, journals, nursing magazines, and websites to get a clear picture of the research problem.

Tools Validity:-

Five specialists from the Gynecological Nursing Department, Faculty of Nursing, Medical-Surgical Nursing, and Psychiatric Health Nursing examined the instrument's content validity, coverage, clarity, relevance, applicability, wording, length, format, and overall appearance. By their advice, there was no changes were made.

Tool reliability

Alpha Cranach's α coefficient was more than 0.884, indicating the reliability of tool one. Alpha Cranach's α coefficient was 0.878, indicating the reliability of tool I and 0.893 for tool II.

Pilot study

A pilot study was carried out on 10% (10 women with gynecological tumors) of the entire sample to evaluate the feasibility and clarity of the research design. No changes were made to create the tools in their final version. The study comprised the women with gynecological tumors from the pilot study.

Administrative design:

The Executive of the gynecological department and outpatient clinic (for post-operative follow-up) at Mansoura University Hospital was granted formal authority to collect information for the study via the accommodation of official letters provided by the Dean of the Nursing Faculty at Mansoura University. The letter explains the purpose and scope of the investigation and includes consent to do the study.

Ethical considerations:

Before the research starts ethical approval will be obtained by the ethical committee, Faculty of Nursing, Mansoura University. To obtain the involvement and explain the study's goal, the researchers had a meeting with the directors of the selected setting before the study. The women with gynecological tumors consented in exchange for cooperation. The study's goals were communicated to the patients. Enrollment in the trial was entirely voluntary, and the women with gynecological tumors were informed that they could withdraw their consent at any time, for any reason. Women with gynecological tumors were told that it would be utilized for research purposes only.

II. Planning phase:

Based on the literature relevant to venous thromboembolism prevention research, researchers gained a comprehensive understanding of all aspects of venous thromboembolism prevention. The results obtained from the preparatory phase reported to characteristics of the study sample, and the researchers designed the educational sessions' content. In addition, the researchers designed and illustrated a booklet, and its content was proved and it was distributed to the studied women to be used as a guide for educational sessions. A handout was prepared and distributed to patients by the end of each session of the educational session. The researchers established the venous thromboembolism prevention educational sessions for the studied Women having Major abdominopelvic surgery according to the

following steps:

Educational session's objectives setting:

▪ **General objective:**
The general objective of the educational session's implementation was to prevent venous thromboembolism and improve the emotional status among women having major abdominopelvic surgery.

Specific objectives:
After applying the current educational guidelines, the patients should be able to:

- Define venous thromboembolism.
- List the risk factors of venous thromboembolism.
- Enumerate the causes of venous thromboembolism.
- List signs and symptoms of venous thromboembolism.
- Discuss methods of diagnosis of venous thromboembolism.
- Identify the management of venous thromboembolism.
- Enumerate the complications and recurrence prevention of BPH.
- Discuss the prevention of venous thromboembolism.
- Apply techniques to prevent venous thromboembolism.
- Apply techniques to decrease anxiety and depression associated with venous thromboembolism.

III. Implementation phase:

- All sessions were conducted by the researcher in a simple Arabic language considering low educated women using lectures, group discussion, and brainstorming. Posters, handouts, and educational videos were used to guarantee their attention and cooperation. Each woman obtained a copy of the designed illustrated educational session contents.

A PowerPoint presentation supported the intervention, followed by a group discussion about the contents. In addition, researchers helped women having major abdomino-pelvic surgery gain knowledge of feedback. Also, brochures/booklets with attractive images and simple, clear text were distributed to guide them after the intervention. Each session starts with a summary of what had been given in the previous one and an explanation of the objectives for the current one, using simple language to accommodate the women having major abdomino-pelvic surgery level of understanding. During the sessions, reinforcement techniques such as praise were used to encourage active participation and increase learning. The sessions were as follows: Evaluate the efficacy of educational sessions on venous thromboembolism prevention and emotional status among women having major abdominopelvic surgery.

Educational sessions were given to each woman separately before the researcher's surgery. Three sessions were used to carry it out:

▪ First session: During this session, the researchers gave an overview of the educational sessions, including the goal, the number of sessions, the duration of each session, the location of the meeting, and the schedule. Then, a pre-testing was performed using data collection tools.

▪ Second session: The researchers provided women having major abdomino-pelvic surgery an overview of the definition, risk factors, signs and symptoms, diagnosis, and prevention.

Third session: It was initiated by a review of the previous session followed by instructions regarding early ambulation, the use of elastic stockings, adherence to anticoagulant medicine, and exercise that must be performed were all part of the discussion of preventive measures:

- Changing positions and turning at least once every one to two hours
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- Length exercise: extend the leg and lower it to the bed after bending the knee and raising the foot while holding it for a short while lying in the semi-fowler's position. Repeat with the other leg after doing this five times with the first leg.
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- Use your feet to trace circles by bending them down, in toward one

another, up, and out. Do these five times.

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- The first step is to turn on one side while supporting yourself with a pillow and flexing your main leg. Take hold of the side rail. Cough and breathe with your diaphragm while lying on your side.

- Turn on one side of the bed to get out. Swing your legs out of bed while pushing yourself up with one hand. Exhale slowly and deeply through your nose while allowing your abdomen to expand and your lower rib cage to expand. This is a deep breathing and coughing exercise. Wait for a count of three to five. Through pursed lips, exhale slowly and fully. Do not exhale forcefully. Repeat ten times each hour after resting.
- Coughing exercise: Take a big breath and cough forcefully.

- -Progressive muscle relaxation technique.

- Raise the lower limb above the heart's level on occasion. Until the patient's comprehension is acknowledged, the researchers will use demonstration and demonstration to complete this phase. In addition, a booklet was given to the women as support.

IV. Evaluation phase:

In this phase, the researchers reassess the efficacy of educational sessions on venous thromboembolism prevention and emotional status among women having major abdominopelvic surgery post one month of surgery using the same tools used in the pretest as post-test). This phase was implemented in the outpatient post-operative clinic of the two previously mentioned sittings.

Statistical Analysis:

All statistical analyses were performed using SPSS for Windows version 20.0 (SPSS, Chicago, IL). Continuous data were normally distributed and were expressed in mean ±standard deviation (±SD). Categorical data were expressed in numbers and percentages. The chi-square test (or Fisher's exact test when applicable) was used for comparison of variables with categorical data. Statistical significance was set at p 0.05.

Results:

Table1. Demonstrates that the Mean age ± SD of the study group was 49.33 ±8.76 and 30% of studied women had a primary education. Moreover; 83% of them were housewives, and the majority of them were living in rural areas (80.0%).

Table (2): Illustrates that Hysterectomy was the main operation done among **women having major abdomino-pelvic Surgery** 55% As regards types of operation. Meanwhile; (37%) of them spent from 2-3 hours in operation.

Figure (1): Shows that 90% of the studied **women** didn't have previous training in venous thromboembolism prevention.

Figure (2) illustrates that the primary sources of knowledge about venous thromboembolism prevention among **women having major abdomino-pelvic Surgery** were doctors (70%), followed by nurses (20%), and friends (10%).

Table (3): revealed that there were statistically significant differences and improvements in all items of knowledge about venous thromboembolism among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation ($P < 0.05$).

Most (96%) women with major abdomino-pelvic surgery had unsatisfactory total knowledge scores in the pre-test phase. In comparison, 86 % of them had total satisfactory knowledge scores post educational sessions implementation **as shown in (Figure, 3).**

Table (4): revealed that there were statistically significant differences and improvements in all items of compliance with VTE preventive measures among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation ($P < 0.05$).

As shown in Figure (4): (92%) of the women having major abdomino-pelvic surgery had poor total compliance with VTE preventive measures scores pre-educational sessions implementation, while 100 % of them had total good compliance with VTE preventive measures scores post-educational sessions implementation.

Figure 5: Shows that 55% of the studied women having major abdomino-pelvic surgery were at high risk of developing DVT pre-educational session implementation which improved and decreased to 15% among them post-educational session implementation.

Table 5: Demonstrates that there was a statistically significant difference in the clinical manifestations of DVT reported among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation ($P < 0.05$).

Figures 6 and 7: Illustrate that all the studied women having major abdomino-pelvic surgery post educational sessions implementation (100%) had a negative sign of Homan's test and Doppler result post educational sessions implementation.

Table 6: Demonstrates that there was a statistical significant difference in the Hospital Anxiety and Depression scale scores that reported among the studied women having major abdomino-pelvic surgery pre and post-educational sessions' implementation ($P < 0.05$).

Table (1): Women having major abdomino-pelvic Surgery distribution according to their demographic data (N=100).

Demographic data	No.	%
Age (years)		
▪ 20 : < 30 yrs	4	4.0
▪ 31 : < 40 yrs	24	24.0
▪ 41 : < 50 yrs	38	38.0
▪ 51 : ≤ 60 yrs	26	26.0
▪ + 60 yrs	8	8.0
Mean+SD	49.33 ± 8.76	
Occupation		
▪ Housewife	83	83.0
▪ Employed	17	17.0
Level of education		
Illiterate	10	10.0
Read & Write	20	20.0
Primary school	30	30.0
Preparatory school	24	24.0
Secondary school	16	16.0
University education	10	10.0
Residence		
Urban	43	20.0
Rural	**57**	**80.0**

Table (2): Women having major abdomino-pelvic Surgery distribution according to their medical history (N=100).

Medical history	No.	%
Type of operation		
▪ Hysterectomy	55	55.0
▪ Salpingo- oophorectomy	25	25.0
• Myomectomy	20	20.0
Duration of operation		
▪ One hr	33	33.0
▪ 2 to 3 hrs	37	37.0
• More 3 hrs	30	30.0

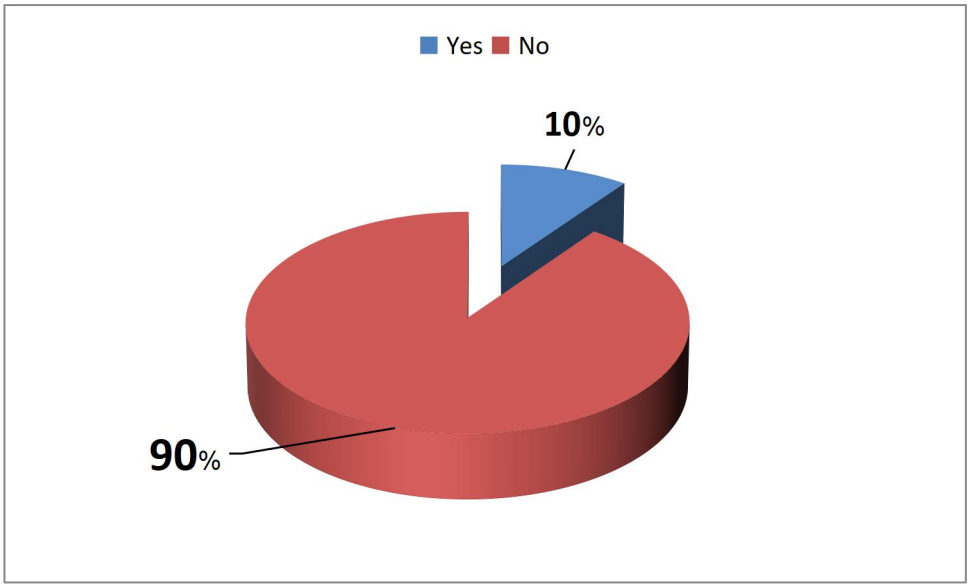

Figure (1): The studied women distribution regarding previous training about venous thromboembolism prevention

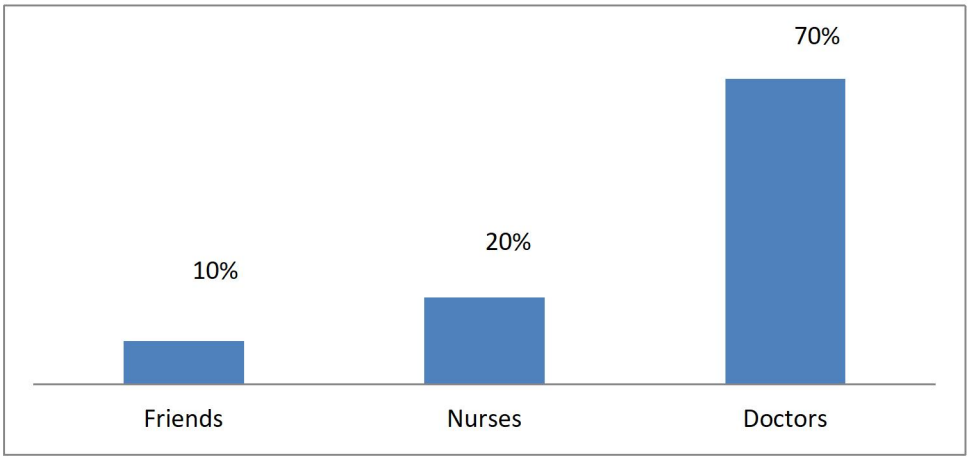

Figure (2): The studied women distribution regarding sources of knowledge about venous thromboembolism prevention

Table (3): Knowledge distribution about venous thromboembolism among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation (n=100).

Knowledge Item	Pre educational sessions		Post educational sessions		X2 test	p-value
	No	%				
Definition of venous thromboembolism	20	20.0	87	87.0	51.93	<0.001*
Signs and symptoms of venous thromboembolism	18	18.0	89	89.0	65.83	<0.001*
Risk factors of venous thromboembolism	6	6.0	78	78.0	30.46	<0.001*
Diagnosis of venous thromboembolism	14	14.0	88	88.0	75.37	<0.001*
Prevention of venous thromboembolism	12	12.0	90	90.0	60.64	<0.001*

(*) Statistically significant at p<0.05

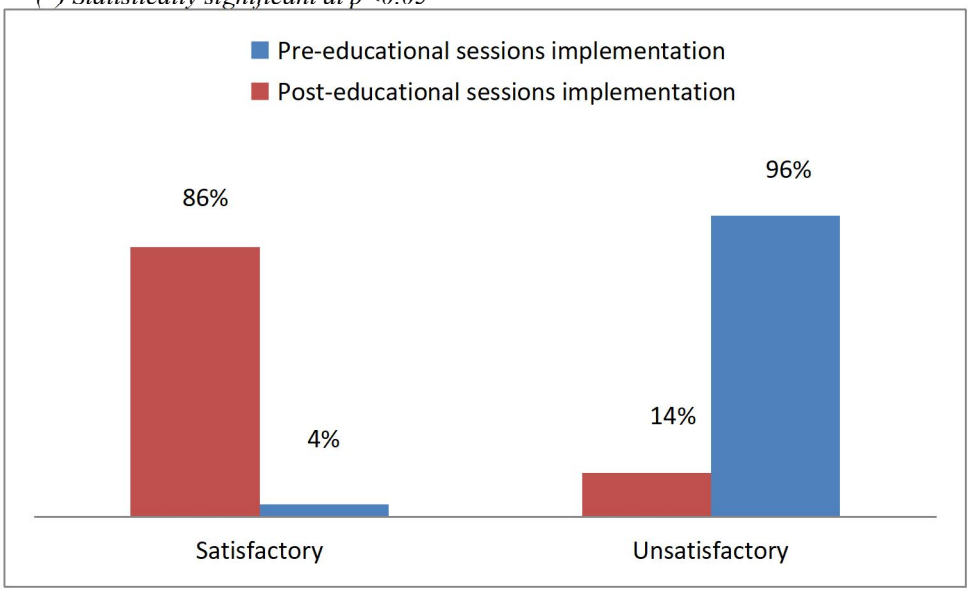

Figure (3): Total knowledge scores among the studied women having major abdomino-pelvic surgery pre and post-educational sessions' implementation (n=100).

Table (4): Distribution of compliance with VTE preventive measures among the studied women having major abdomino-pelvic surgery pre and post-educational session implementation (n=100).

Knowledge Item	Pre educational sessions		Post educational sessions		X2 test	p-value
	No	%				
Early ambulation	15	15.0	85	85.0	51.93	<0.001*
Positioning and turning	20	20.0	90	90.0	65.83	<0.001*
Leg exercise	5	5.0	89	89.0	30.46	<0.001*
Deep-breathing exercises	4	4.0	78	78.0	75.37	<0.001*
Elastic stock use	10	10.0	92	92.0	60.64	<0.001*
Hydration	13	13.0	93	93.0	30.46	<0.001*
Food intake	19	19.0	91	91.0	75.37	<0.001*
Anticoagulant preventive measures	6	6.0	80	80.0	60.64	<0.001*

(*) Statistically significant at p<0.05

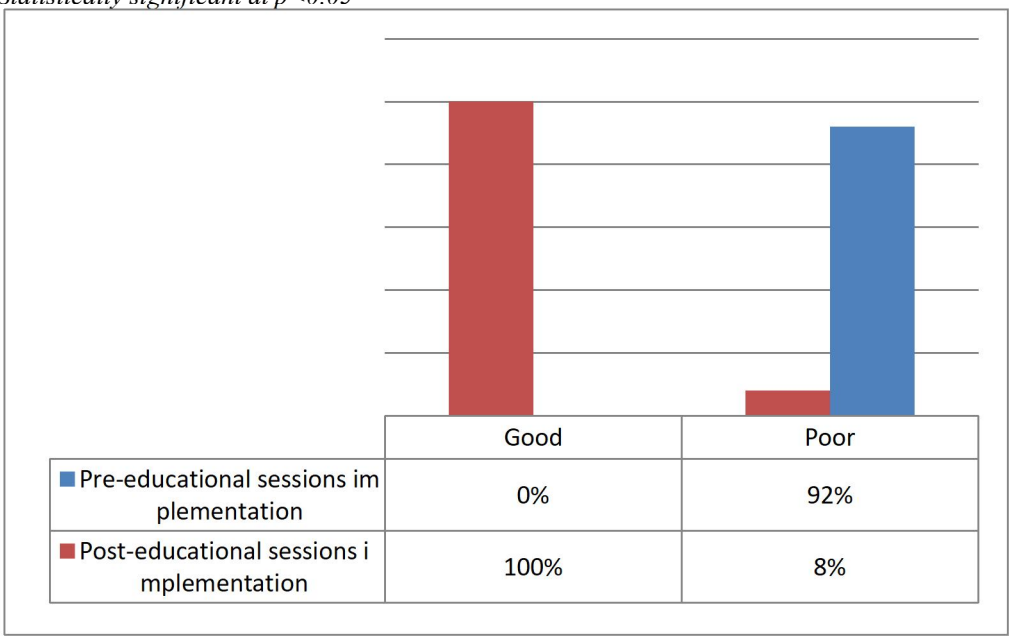

Figure 4: Total score of compliance with VTE preventive measures among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation (n=100).

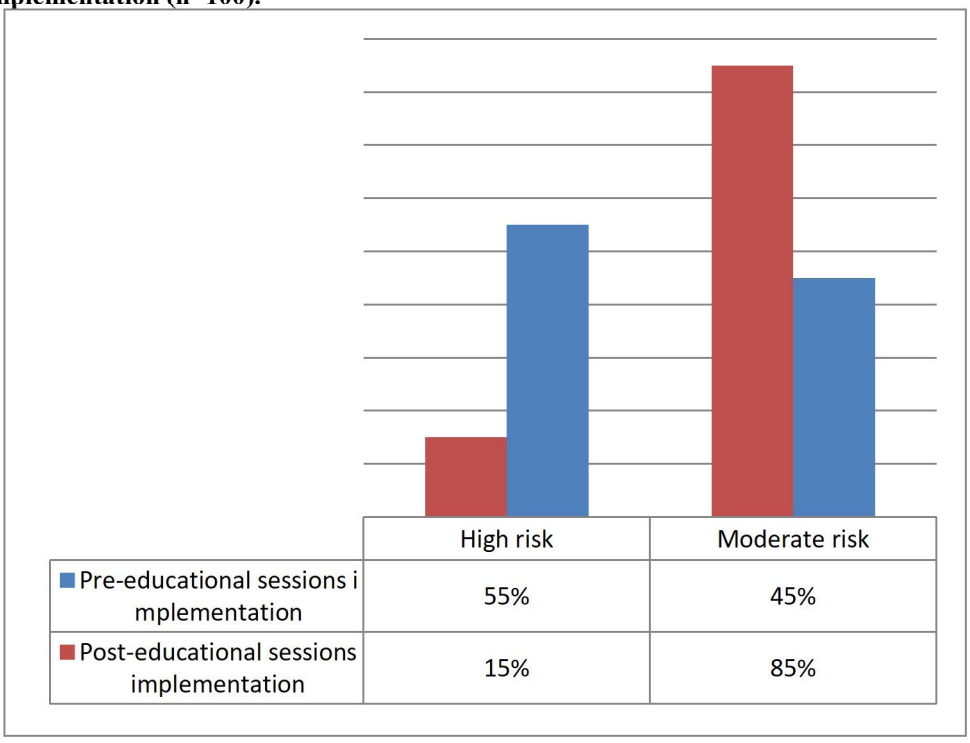

Figure (5): Risk factors of DVT distribution among the studied women having major abdomino-pelvic surgery pre and post-educational sessions' implementation (n=100).

Table (5): Differences of compliance with VTE preventive measure clinical manifestation of DVT among the studied women having major abdomino-pelvic surgery pre and post-educational session implementation (n=100).

Knowledge Item	Pre educational sessions		Post educational sessions		X2 test	p-value
	Present %	Absent %	Present %	Absent %		
Calf pain	10	90.0	3	97.0	51.93	<0.001*
Leg edema	5	95.0	0	100.0	65.83	<0.001*
Cyanosis	4	96.0	0	100.0	30.46	<0.001*
Warmness	3	97.0	0	100.0	75.37	<0.001*
Localized redness	4	96.0	0	100.0	60.64	<0.001*
Tenderness	3	97.0	3	97.0	30.46	<0.001*
Can't feel the pulse	4	96.0	0	100.0	75.37	<0.001*

(*) Statistically significant at p<0.05

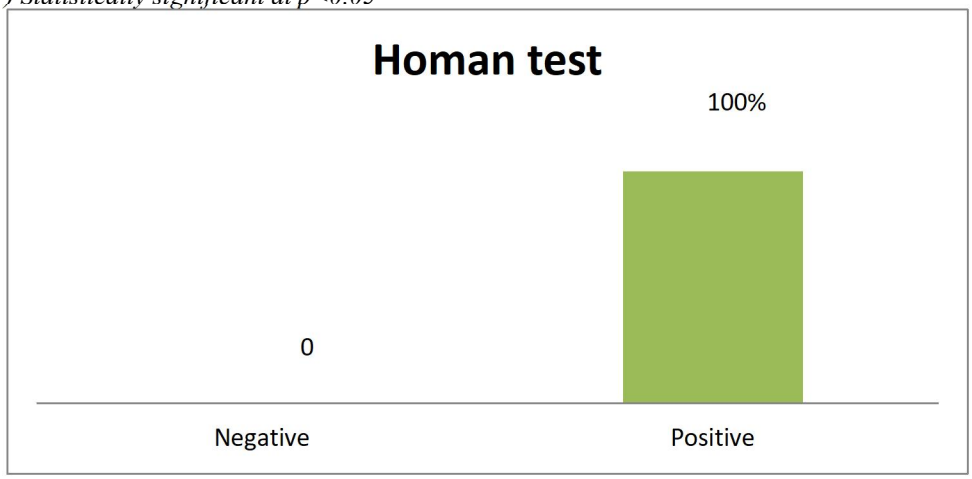

Figure (6): Homan's test results as presented among the studied women having major abdomino-pelvic surgery post educational sessions' implementation (n=100).

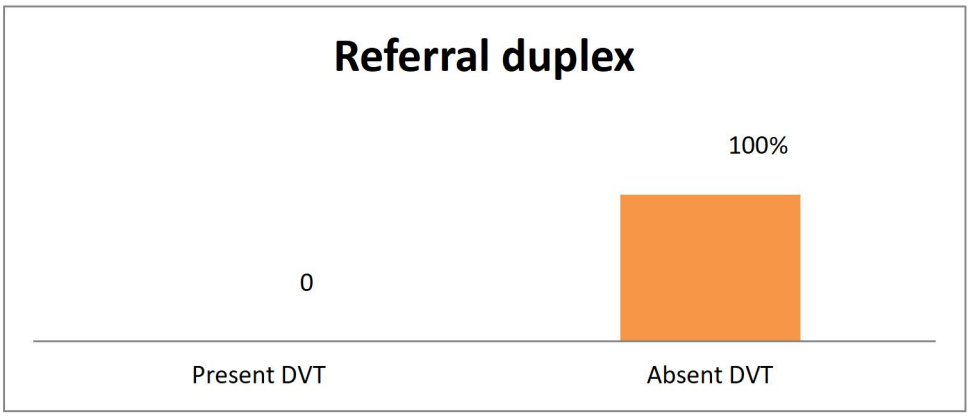

Figure (7): Doppler ultrasound results as presented among the studied women having major abdomino-pelvic surgery post educational sessions implementation (n=100).

Table (6): Hospital Anxiety and Depression Scale (HADS) scores distribution among studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation

HANDS	Pre educational sessions		Post educational sessions		P -value
	No.	%	No.	%	
Anxiety Scale					**0.001**
Normal	0	0.0	96	96.0	
Borderline	8	8.0	0	0.0	
Case	92	92.0	4	4.0	
Depression Scale					
Normal	0	0.0	35	85.0	
Borderline	6	6.0	3	9.0	
Case	94	94.0	5	6.0	

*** Statistically significant difference (p 0.001)*

Discussion:

According to **Kumar et al. (2023**), deep vein thrombosis (DVT) and the PE that is linked to it pose serious challenges in the surgical sector and continue to be a major cause of postoperative mortality and morbidity. Patients who have gynecological surgery are at a higher risk of getting VTE because they experience vascular damage, immobilization, and hypercoagulable states during their procedures. According to Cancer-Associated Venous Thromboembolic Disease (2020), prevention of VTE is more successful than treatment and is an essential component of patient care before, during, and following surgery.

Another research has examined the role of physical and non-pharmacological treatments in avoiding VTE in postoperative patients. The effect of the preventative strategy for those high-risk groups VTE was not addressed in **Rahn et al. (2021**) or the other relevant prior research on the subject; they were only descriptive. Therefore, it was advantageous to carry out a study that attempted to evaluate the efficacy of venous thromboembolism prevention and emotional status among women having major abdomino-pelvic surgery**.**

The results of the current study showed that the Mean age ± SD of the study group was 49.33 ±8.76 and the majority of them were housewives and were living in rural areas. From the researchers' point of view, it may be the cause of a knowledge deficit where in rural areas there were insufficient resources.

The results of the current study showed that most of the studied **women** didn't have previous training in venous thromboembolism prevention. From the researchers' point of view, it confirmed the need to implement educational sessions which met women having major abdomino-pelvic surgery needs.

The results of the current study illustrated that the primary sources of knowledge about venous thromboembolism prevention among **women having major abdomino-pelvic Surgery** were doctors. From the researchers' point of view, it reflected that those women ask for the right source when need help.

The results of the current study revealed that there were statistically significant differences and improvements in all items of knowledge about venous thromboembolism among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation. From the researchers' point of view, it reflected the positive effect of educational session implementation that helped knowledge improvement.

The results of the current study highlighted that Most of the women having

major abdomino-pelvic surgery had unsatisfactory total knowledge scores in the pre-test phase, while the majority of them had total satisfactory knowledge scores post-educational sessions implementation**.** From the researchers' point of view, it confirmed the success of educational session implementation that helps knowledge improvement which meets the aim of the current study. This enhancement not only shows how effective the training is, but also how much the extent of women's interest in the importance of the subject and the seriousness of the disease as well as the majority of them being educated.

These results were also corroborated by **Ramadan et al., (2019**), who reported that none of the two groups knew anything and that there was no statistically significant difference between them, but that following the intervention, there was an improvement in the two groups' knowledge scores regarding DVT and its symptoms.

Comparably, **Green & Bernhofer (2018**) found that the experimental group's knowledge scores were higher, with a greater proportion of participants completing all questions correctly, going from less than two-fifths to less than three-quarters. While researching the efficacy of a patient education program regarding postoperative venous thromboembolism knowledge

A study by **Serpici & Gürsoy (2018**) found that patients' self-care and knowledge of deep vein thrombosis improved after receiving nurse-led patient training. In their research. Additionally, **Youness et al. (2022)** reported that the intervention group's inadequate awareness of VTE during the pre-test procedure went from less than a tenth to the majority of participants after the intervention.

According to **Ays & Ayla (2018**), who investigated how nurse-led patient training affected participants' self-care and DVT awareness, the average total score of DVT knowledge increased significantly following training.

The results of the current study showed that there was no statistically significant difference between the two groups, with the majority of the women in both groups having a moderate risk of getting DVT and about equal numbers in both groups having a high risk. Given that the average age of both groups was between 40 and 60 years old, this could be because a sizable portion of them were elderly. Gynecological tumors were seen in every sample, and the great majority of them had been identified as having malignant illnesses. The Autar DVT risk assessment scale indicates that they had also previously used contraceptive pills.

According to the results of **Gad and Alsheikh's (2022**) investigation into the impact of mechanical preventive measures on deep vein thrombosis in patients undergoing general surgery, around two-thirds of the study and control groups had a moderate risk of developing the condition.

When **Ramadan et al., (2019**) attempted to assess the impact of calf muscle training and preventive measures during a postpartum cesarean section, they found that fewer than one-tenth of the control and study groups had a low risk for the incident of DVT.

The results of the current study there were statistically significant differences and improvements in all items of compliance with VTE preventive measures among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation. **Also, most** of the women having major abdomino-pelvic surgery had poor total compliance with VTE preventive measures scores pre-educational sessions implementation, while all of them had totally good compliance with VTE preventive measures scores post-educational sessions implementation. Before the educational sessions implementation was given, it was clear that many study participants were either completely or somewhat noncompliant with many of the VTE prevention measures, such as drinking enough water.

The entire sample consistently complied with all VTE preventive measures, including leg exercise, nutritional intake, cough, and breathing exercises, even though their compliance improved dramatically following the program. In contrast to the control group, all of them achieved a high degree of compliance after the program. This can be a result of the increase in their VTE

knowledge that demonstrates the educational sessions implementation ' effectiveness. For the same VTE preventive strategies, the control group did not show a statistically significant difference between pre and post-educational sessions implementation. The majority of them were found to regularly adhere to just two preventive measures: stocking and anticoagulant compliance. When none of the other precautions were properly followed. In terms of walking, standing, and turning; exercising the legs; coughing and breathing; eating; and taking anticoagulants. Their lack of knowledge about the subject and the severity of the illness before the educational sessions implementation 'adoption could be the cause.

Other research (**Aggarwal et al., 2022; Lavall & Costello, 2022; Ays & Ayla, 2018**) have found that prior to the training, none of the participants knew how to prevent DVT formation. These findings are consistent with the findings of this study. However, the majority of the practices were recognized and followed by the patients following instructions utilizing the guidebook.

The results of the current study showed that more than half of the studied women having major abdomino-pelvic surgery were at high risk of developing DVT pre-educational session implementation which improved and decreased among them post-educational session implementation. From the researchers' point of view, it confirmed the effectiveness of educational session implementation that helps knowledge improvement which is associated with practice improvement and led to a decrease high the risk of developing DVT among the studied women.

The results of the current study demonstrated that there was a statisticall y significant difference i n t h e clinical manifestations of DVT that was reported among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation. Because the study group complied well with the VTE prevention procedures, the percentage of these previously described signs declined and vanished after the intervention (two weeks). Although it increased slightly and coexisted with other symptoms such as leg edema in the control group, there was a statistically significant difference. They may have experienced the disease as a result of their poor adherence to the same measures.

The study group's clinical assessment improved following the intervention, as evidenced by the lack of warm and sensitive legs compared to patients in the control group who only received normal treatment, according to **Gad & Alsheikh (2022**), who corroborated similar findings.

The results of the current study Illustrated that all the studied women having major abdomino-pelvic surgery post-educational session implementation had a negative sign of Homan's test and Doppler results in post-educational session implementation. From the researcher's point of view, it can be explained that when women following education sessions led to improved knowledge and practice and helped them to apply preventive measures for DVT in women following major abdomino-pelvic surgery and having gynecological tumors.

These also had an impact on several cases. In the first, a woman with DVT who had been diagnosed with ovarian cancer was rated as high risk on the Autar scale due to her obesity, diabetes, age over 50, and history of varicose veins. And earlier provided by C.S. three times. She was also confined to the intensive care unit for a week following surgery because of bleeding. After they were sent to the inpatient unit. The second DVT patient was identified with advanced uterine fibroids; she was 48 years old, high risk on the Autar scale, and had a history of breast cancer, diabetes, and an oral contraceptive use history of more than ten years before two C.s. delivery, requiring a 10-day stay in the intensive care unit due to complications from bleeding during the more than two-hour-long procedure. In addition, the third example, PE, was 60 years old, had a history of breast cancer, high blood pressure, and obesity, and had been taking oral contraceptives for over 20 years. PE was also diagnosed with endometrial cancer. They spent more than two weeks in the intensive care unit after an operation that took more than three

hours and was complicated by bleeding and respiratory distress.

In comparison with research by **Ramadan et al., (2019) and Gad & El Sheikh, (2022**) None of the study group experienced DVT or accompanying symptoms within the four weeks following surgery, but only 10% of the control group had DVT or its manifestations. As per **Youness et al. (2022**), there was a highly statistically significant difference between the two groups: the intervention group, which received the intervention program and adhered to the nursing instructions, had only one case of DVT out of the entire sample, whereas the control group had three cases of VTE, two cases of DVT, and one case of PE.

The results of the current study demonstrate that there was a statistically significant difference in the Hospital Anxiety and Depression scores that were reported among the studied women having major abdomino-pelvic surgery pre and post-educational sessions implementation. Thus, this could be ascribed to multiple problems. Among them, the majority of the women had sufficient knowledge, and followed several VTE prevention procedures—as stocking and anticoagulant medication preventive measures, which were regularly followed that caused no cases of DVT and improved their health which reflected in their emotional status and causes low Anxiety and Depression scores that reported among the studied women having major abdomino-pelvic surgery post educational sessions implementation.

Conclusion:

Based on the study results, it was concluded that the educational session implementation has a positive effect on Venous Thromboembolism Prevention and emotional status among Women having Major abdominal pelvic Surgery.

Recommendations:

Based on the findings of the current study, the researchers suggested the following recommendations.

- Educational sessions should be implemented as an essential part of routine care for all women having major abdominal-pelvic Surgery.
- This study highlights the significance of nurses' involvement in educating patients about VTE and the need for better services to help gynecological nurses educate their patients about the disease.
- A handbook should be made available and given to every woman having a significant gynecological procedure.
- It is advised to do additional research with a larger sample size and a longer follow-up period.
- Additionally, it was suggested that risk categorization for individuals having gynecological surgery for VTE be clarified.

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