



# “AWARENESS ON PREVENTION OF DEEP VEIN THROMBOSIS AMONG PRE-OPERATIVE PATIENTS AT TERTIARY CARE CENTRE, TIRUPATI.”

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## ABSTRACT

### OBJECTIVES:

- ❖ To assess the knowledge on prevention of deep vein thrombosis among pre-operative patients.
- ❖ To find out the association between level of knowledge with their selected socio-demographic variables.

### Materials and methods:

**Methodology:** The research approach used for the present study was Cross-Sectional Descriptive Research Design. The sample of the study chosen by Non-Probability Purposive Sampling Technique, which includes 150 selected patients of SVIMS, OPD's. A self structured questionnaire was used to collect the data which consists of 45 dichotomous questions.

### Results:

The major findings of the study was out of 150 pre-operative patients in SVIMS. 67 (44.7%) had moderate knowledge, 56 (37.3%) had adequate knowledge and 27 (18%) had inadequate knowledge on prevention of deep vein thrombosis. The associations of demographic variables with the level of knowledge on deep vein thrombosis determined by using chi-square test which revealed that there was a highly significant association with gender, education, occupation, family income, BMI, age and previous knowledge on deep vein thrombosis.

### Conclusion:

The study findings concluded that the pre-operative patients had moderate knowledge on deep vein thrombosis and need to develop knowledge on preventive measures on deep vein thrombosis. The pre-operative patients were advised to follow the preventive measures on deep vein thrombosis to improve their health status and also to reduce the morbidity after surgery.

**Key words:** Awareness, deep vein thrombosis, pre-operative patients

## I. INTRODUCTION

The vascular system is vast network of vessels through which blood circulates in the body. Arteries, arterioles, veins, venules, capillaries and lymphatics constitute the structural elements of vascular system. Approximately 75% of total blood volume is within the veins.<sup>1</sup> Vascular system consists of superficial veins which located in the fatty layer under the skin, deep veins which located in the muscles and along the bones, short veins called connecting veins, link the superficial and deep veins. Normal venous blood flow depends on the action of the muscles in the extremities and the functional adequacy of venous valves, which allow unidirectional flow. The calf has 3 groups of paired deep veins the anterior tibial vein, posterior tibial vein and peroneal vein. Together, the calf muscles and deep vein system form a complex array of valves and pumps referred to as "peripheral heart" that pushes blood upwards from the feet against gravity.<sup>2</sup>

Deep veins play a significant role in propelling blood toward the heart. The oneway valves in deep veins prevent blood from flowing backward, and the muscles surrounding the deep veins compress them, helping force the blood toward the heart, just as squeezing a toothpaste tube eject tooth paste.<sup>3</sup>

### NEED FOR STUDY:

Deep vein thrombosis is a serious problem that affects millions of people annually around the world. Every year October 13<sup>th</sup> is marked as "World thrombosis day".<sup>4</sup> A comprehensive scientific review by the World Thrombosis Day steering committee revealed that 10 million cases of Venous Thrombosis Embolism occur annually – across low, middle and high income countries and Venous thromboembolism is a leading cause of death and disability worldwide.<sup>4</sup>

One in four people die due to conditions caused by thrombus. The condition is a preventable underlying cause of the top three cardiovascular killers, namely heart attacks, as well as thromboembolic stroke and Venous Thrombus Embolism. Upto 9000,000 in the US alone are affected by blood clots annually, out of which over 100,000 people die, making blood clots cause of death for more people than AIDS, car accidents and breast cancer together.<sup>5</sup> In a recent global epidemiological study, 52% (38% medical and 62% surgical) of 68, 183 inpatients in 358 hospitals across 32 countries were found to be at risk for developing venous thromboembolism.<sup>6</sup>

The incidence of deep vein thrombosis in India is one percent of the adult population after the age of forty and is 15 to 20 % in hospitalized patient and it is 40% in those patients undergoing abdominal or thoracic surgery. 1 in 100 patients who develops deep vein thrombosis dies usually from pulmonary embolism.<sup>4</sup>

### STATEMENT OF THE PROBLEM:

**"A STUDY TO ASSESS THE KNOWLEDGE ON PREVENTION OF DEEP VEIN THROMBOSIS AMONG PRE-OPERATIVE PATIENTS, SVIMS, TIRUPATI".**

**OBJECTIVES:**

- ❖ To assess the knowledge on prevention of deep vein thrombosis among pre-operative patients.
- ❖ To find out the association between level of knowledge with their selected socio-demographic variables.

**OPERATIONAL DEFINITION:**

- **Assess:** Assess refers to the process of measuring the level of knowledge of patients regarding prevention of deep vein thrombosis by using self-structured tool.
- **Knowledge:** Knowledge refers to the information possessed by patients regarding prevention of deep vein thrombosis by using self- structured questions.
- **Prevention:** Elimination of possible risk factors of deep vein thrombosis. Deep vein thrombosis: Blood clot that forms in the deep veins in the body.
- **Pre-operative patients:** Patients who are admitted in pre-operative wards like, CT ward, Neurosurgery ward, surgical oncology, urology, general surgery, surgical gastroenterology, obstetrics and gynecology.

**ASSUMPTION:**

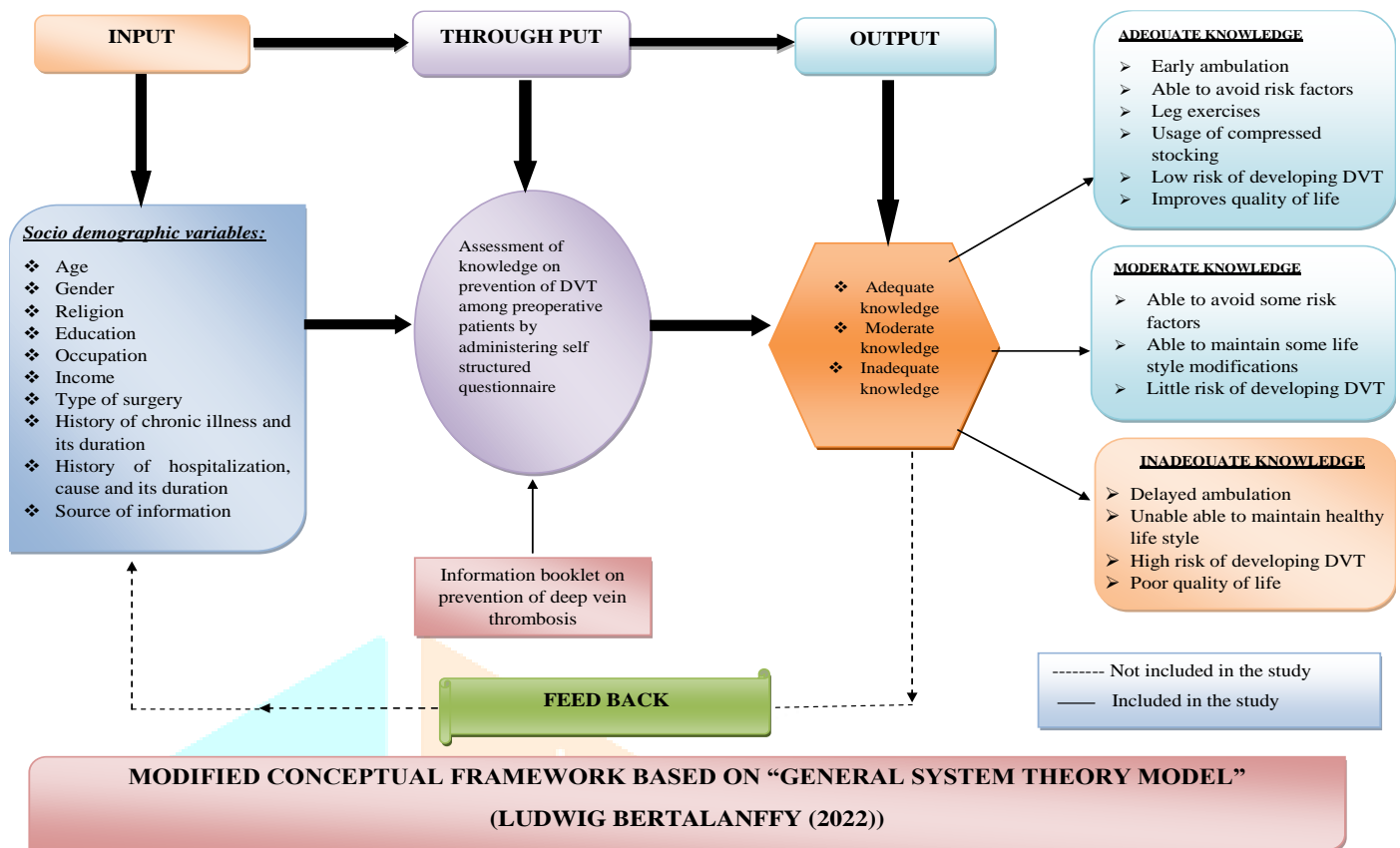
- Pre- operative patients may not have knowledge regarding prevention of deep vein thrombosis.

**CONCEPTUAL FRAMEWORK:**

The conceptual framework for the present study was adopted from '**General system theory by Ludwig Von Bertalanff (1968)**. General system theory explains that, a system of interrelated elements in the abstract system are the human being their environment. A system must achieve the balance internally and externally. According to general system theory, 'silence of wholeness and its purpose is scientific thinking across the discipline and which provide frame work for analyzing the whole of any system'.

A system can be resolved into an aggregation of feedback circuit such as:

- Input
- Throughput
- Output



**Fig-1: Conceptual Frame work**

## II. METHODOLOGY

### RESEARCH APPROACH:

The research approach adopted was Descriptive research approach to achieve the objective of the study, which is felt to be most appropriate in the field of education for its practicability in real life situations. It has the advantage of practicability, feasibility and to a certain extent for generalization.

### RESEARCH DESIGN:

The research design selected for the present study was Cross-Sectional Descriptive Research Design.

### VARIABLES:

**Socio-demographic Variables:** Which could influence the study includes age, gender, religion, educational status, occupation, family monthly income, BMI, type of surgery, history of chronic illness and its duration, previous history of hospitalization, causes and duration of hospitalization, source of information.

**Research variables:** Knowledge on prevention of deep vein thrombosis.

### SETTING OF THE STUDY:

The study was conducted in surgical wards in SVIMS and SPMC (W) hospital, Tirupati. The setting was chosen on the basis of the investigator's feasibility in terms of availability of required sample. The study was conducted during the month of July 2022.

**POPULATION:**

The population in this study includes all pre-operative patients admitted to SVIMS hospital.

**SAMPLE:**

The sample includes pre-operative patients who were falling under inclusion criteria.

**SAMPLE SIZE:**

Sample size consists of 150 pre-operative patients who fall under inclusion criteria.

**SAMPLING TECHNIQUE:**

The students were selected on by using Non Probability Purposive Sampling Technique was based on inclusion criteria.

**CRITERIA FOR SAMPLE SELECTION:**

**Inclusion criteria:-** Patients who are:-

- posted for surgeries. (i.e. cardiovascular & thoracic surgery, abdominal surgeries, neurological, oncological, obstetrics & gynecological and general surgeries).
- undergoing elective surgeries
- willing to participate and available during the period of study.

**Exclusion criteria:-** Patients who are:-

- already diagnosed with deep vein thrombosis and varicose veins.
- undergone vascular surgeries. E.g. Peripheral artery bypass graft, arterial embolectomy, thrombectomy, endarterectomy etc
- undergoing emergency surgeries.
- on anti-coagulant or anti-thrombotic treatment. E.g. Heparin
- undergone below or above knee amputation

**DEVELOPMENT AND DESCRIPTION OF THE TOOL:**

The tool was developed with the help of related literature from various textbooks, journals, websites, discussions and guidance from experts.

The tool consists of III sections.

**Section-I:** Consists of questions related to demographic data.

**Section-II:** A Self structured questionnaire to assess the knowledge on deep vein thrombosis. It consists of dichotomous questions prepared on general information, causes, risk factors, signs and symptoms of deep vein thrombosis.

**Section-III:** A Self structured questionnaire to assess the knowledge on prevention and complications of deep vein thrombosis.

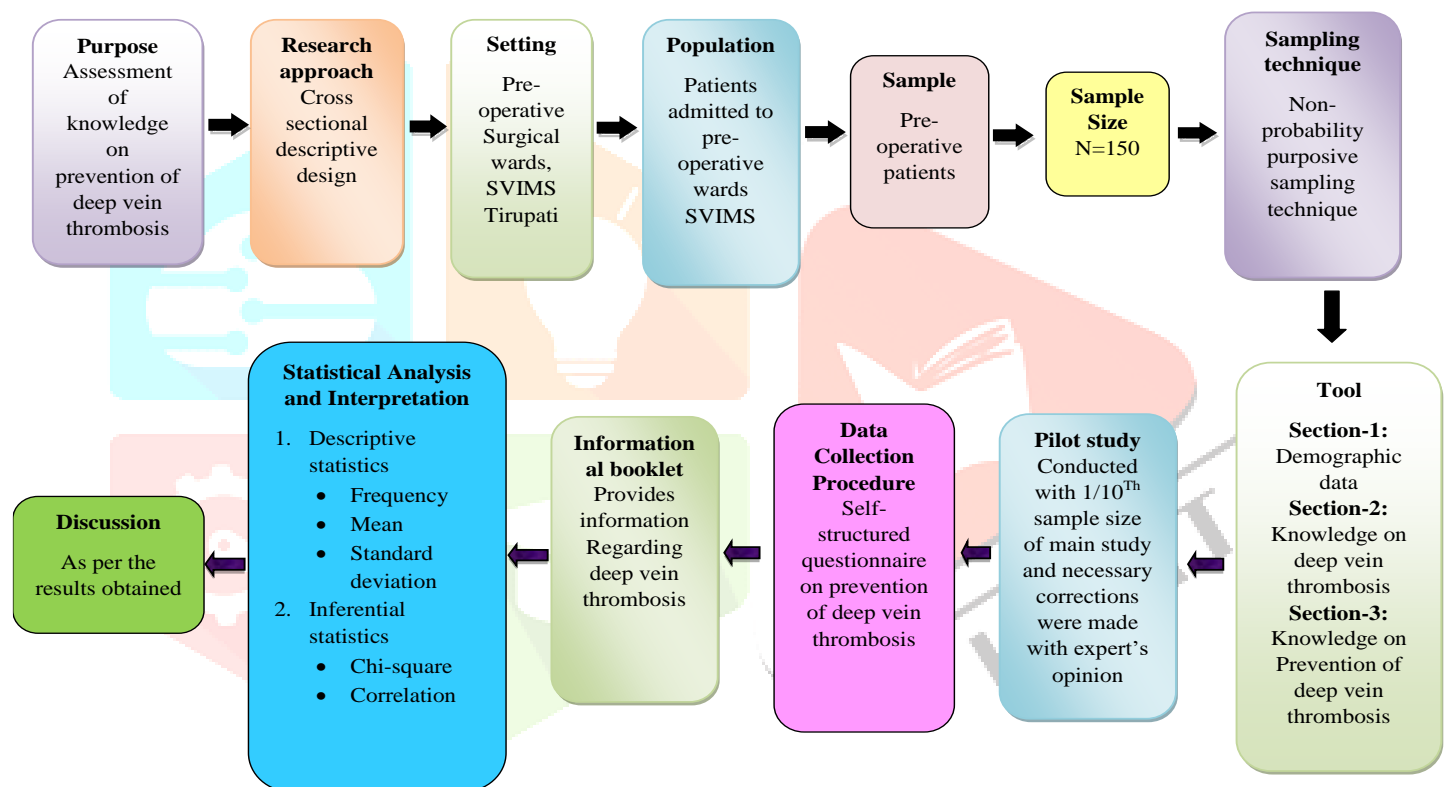
**SCORING KEY:**

**Section-I:-** By coding the demographic variables.

**Section-II & III:-** Dichotomous questions were given with two options “YES or NO”. In the questionnaire, correct answer “YES” carries “1” mark and wrong answer “NO” carries “0” mark.

**Scoring interpretation:**

- 0-50% - Inadequate knowledge.
- 51-75% - Moderate knowledge.
- >75% - 100%- Adequate knowledge.



**Fig.no 2: SCHEMATIC REPRESENTATION OF CROSS SECTIONAL DESCRIPTIVE RESEARCH DESIGN**

**III. RESULTS**

Majority of patients shows that 29 (19.39%) were belongs to age group of 36-45 years,85 (56.7%) were females,131 (87.3%) belongs to Hindu religion, 62 (41.3 %) having primary education, 46 (30.7%) are homemakers, 34 (22.7%) has income of Rs10,001 – Rs. 20000/- per month, 43 (28.7%) were planned for gastroenterology surgeries, 71(47.3%) were having normal weight, 97 (35.3%) have chronic illness, 11(7.3%) have both DM and HTN followed by cancer 10(6.7%), 33 (22%) were suffering from chronic illness from 0-5 years, 88 (41.3%) had previous history of hospitalization, 15 (10%) were hospitalized with urology problems followed by 12 (8%) with general medical illness which follows gastrointestinal illness by 9 (6%), 29 (19.3%)

were stayed in the hospital for the duration of 0-3 days and 128(85.3%) were not received information regarding deep vein thrombosis, among 22 (14.7%) of patients having knowledge on deep vein thrombosis, 14 (9.3%) were got information from medical nursing personnel.

The study findings shows that 67 (44.7%) had moderate knowledge, 56 (37.3%) had adequate knowledge and 27 (18%) had inadequate knowledge on prevention of deep vein thrombosis.

**Table 1: Frequency and percentage distribution of level of knowledge on prevention of deep vein thrombosis among pre-operative patients.**

(N=150)

S. No	KNOWLEDGE PREVENTION OF DEEP VEIN THROMBOSIS	FREQUENCY(F)	PERCENTAGE (%)
1.	Inadequate knowledge	27	18
2.	Moderate knowledge	67	44.7
3.	Adequate knowledge	56	37.3

**Table 2: Distribution of frequency, percentage, mean and standard deviation on various aspects of Deep vein thrombosis among pre-operative patients.**

(N=150)

S.N O	VARIABLES	KNOWLEDGE ON PREVENTION OF DEEP VEIN THROMBOSIS						MEAN ± STANDARD DEVIATION
		Inadequate (0 – 50%)		Moderate (51 – 75%)		Adequate (>76%)		
		F	P (%)	F	P (%)	F	P (%)	
1.	General information	20	13.3	68	45.3	62	41.3	3.89 ±1.17
2.	Causes	37	24.7	68	45.3	45	30	2.58 ± 1.28
3.	Risk factors	22	14.7	82	54.7	46	30.7	6.94 ±2.76
4.	Signs and symptoms	28	18.7	49	32.7	73	48.7	3.09 ±1.5
5.	Prevention	27	18	65	43.3	51	34	13.3 ±4.55
	<b>Overall</b>							<b>29.79 ±9.02</b>

The association of demographic variables with the level of knowledge on prevention of deep vein thrombosis revealed that Chi-square value related to gender ( $p=0.002$ ), education ( $p=0.007$ ), occupation ( $p=0.000$ ), family income ( $p=0.006$ ) and BMI ( $p=0.0036$ ) which is statistically highly significant at ( $p<0.01$ ) level. Age ( $p=0.036$ ) and knowledge regarding deep vein thrombosis had statistically significant at ( $p<0.05$ ). The other variables such as religion ( $p=0.534$ ), type of surgery ( $p=0.169$ ), chronic illness ( $p=0.776$ ), name of illness ( $p=0.212$ ), duration of illness ( $p=0.095$ ), history of hospitalization ( $p=0.116$ ), cause of hospitalization ( $p=0.801$ ) and source of information on deep vein thrombosis ( $p=0.241$ ) were not found any significant association with knowledge on prevention of deep vein thrombosis among pre-operative patients.

The correlation of demographic variables with the level of knowledge on prevention of deep vein thrombosis revealed that age, education, source of information on deep vein thrombosis were found highly correlated with  $p<0.01$  significance. Religion, chronic illness and its duration showed correlated with  $p<0.05$  significance and other variables are not correlated with knowledge on deep vein thrombosis.

#### IV. CONCLUSION

The study findings revealed that, the majority of patients had moderate knowledge (44.7%) on prevention of Deep vein thrombosis and some of the demographic variables were statistically significant, hence it can be concluded that pre-operative patients should improve their knowledge regarding prevention of deep vein thrombosis. The pre-operative patients were advised to follow the preventive measures on deep vein thrombosis to improve their health status and also to reduce the morbidity after surgery. So, informational booklet has been given for improving knowledge and practice.

#### IMPLICATIONS:

The implications drawn from the present study are of a vital concern to health team, including nursing practice, nursing education, nursing administration and nursing research.

#### Nursing practice:

The present health care delivery system gives emphasis on comprehensive health care, which includes preventive, curative and rehabilitative care.

- Planned health teaching programme to be scheduled in all in-patient wards for all patients and their family members on fixed days regarding prevention of deep vein thrombosis.
- Hand notes can be given to the patients and family members, in their language, with an appropriate picture.

#### Nursing education:

Nursing students should be encouraged to teach the patients and their family members, regarding the importance of the general information, risk factors, causes, assessment and diagnostic tests, treatment and preventive measures of deep vein thrombosis both in hospital and community.

- Conduct in-service education programme for nurses regarding deep vein thrombosis and its prevention.



**Nursing administration:**

Nursing administrators should have a health education cell with a group of adequate trained nurses for developing health education material for teaching patients as well as general population on risk factors and preventive measures of deep vein thrombosis.

- In all areas of administration, hospital, community and institutions administrators can plan programmes of awareness.

**Nursing research:**

- The new knowledge obtained through the study would enhance evidence based nursing practice.
- Nursing research should be based on practicing newer methods of teaching programmes which include video assisted teaching etc.

**Limitations:**

The study was limited to the pre-operative patients in surgical wards, SVIMS, Tirupathi.

**RECOMMENDATIONS:**

- A structured teaching programme can be conducted on same sample on a large sample that helps to draw more definite conclusion and make generalizations.
- A structured teaching programme can be done among post operative patients.
- Similar study can be done among nurses and nursing students.
- A comparative study can be conducted to assess the knowledge on prevention of Deep vein thrombosis among pre-operative patients.

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