

**EFFECTIVENESS OF STOP CLOT PACKAGE ON KNOWLEDGE  
AND SKILL REGARDING PREVENTION OF  
DEEP VEIN THROMBOSIS (DVT) AMONG  
EUNUCHS AT SELECTED SETTINGS,  
CHENNAI, 2015**

DISSERTATION SUBMITTED TO  
**THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY  
CHENNAI**  
IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE DEGREE OF  
**MASTER OF SCIENCE IN NURSING**  
**APRIL 2016**

**Internal Examiner:**

**External Examiner:**

**EFFECTIVENESS OF STOP CLOT PACKAGE ON KNOWLEDGE  
AND SKILL REGARDING PREVENTION OF  
DEEP VEIN THROMBOSIS (DVT) AMONG  
EUNUCHS AT SELECTED SETTINGS,  
CHENNAI, 2015**

Certified that this is the bonafide work of

**Ms. MONICKA.J.V**

Omayal Achi College of Nursing,  
No.45, Ambattur road,  
Puzhal, Chennai-600 066.

**COLLEGE SEAL:**

**SIGNATURE** : \_\_\_\_\_

**Dr. (Mrs) S.KANCHANA**

R.N., R.M., M.Sc.(N)., Ph.D., Post.Doc.(Res).,  
Principal & Research Director, ICCR  
Omayal Achi College of Nursing,  
Puzhal, Chennai – 600 066, Tamil Nadu.

Dissertation submitted to

**THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY  
CHENNAI**

In partial fulfilment of requirement for the degree of

**MASTER OF SCIENCE IN NURSING**

**APRIL 2016**

**EFFECTIVENESS OF STOP CLOT PACKAGE ON KNOWLEDGE  
AND SKILL REGARDING PREVENTION OF  
DEEP VEIN THROMBOSIS (DVT) AMONG  
EUNUCHS AT SELECTED SETTINGS,  
CHENNAI, 2015**

Approved by the Research Committee in December 2014.

**PROFESSOR IN NURSING RESEARCH**

**Dr. (Mrs) S.KANCHANA**

R.N., R.M., M.Sc.(N.), Ph.D., Post.Doc.(Res).,  
Principal & Research Director, ICCR  
Omayal Achi College of Nursing,  
Puzhal, Chennai - 600 066, Tamil Nadu.

---

**MEDICAL EXPERT**

**Dr. (Mr) R.JAGANATHAN**

M.B.B.S., M.S., M.Ch., (CTVS),  
Additional Chief Health Director,  
Department of Cardio-Thoracic & Vascular Surgery,  
Southern Railway Headquarters Hospital,  
Ayanavaram, Chennai - 600 023, Tamil Nadu.

---

**CLINICAL SPECIALITY - HOD**

**Prof. Mrs. M.SUMATHI,**

R.N., R.M., M.Sc.(N.), [Ph.D(N)],  
Head of the Department,  
Medical Surgical Nursing,  
Omayal Achi College of Nursing,  
Puzhal, Chennai - 600 066, Tamil Nadu.

---

**CLINICAL SPECIALITY-RESEARCH GUIDE**

**Mrs. M. GRACE LYDIA,**

R.N., R.M., M.Sc.(N).  
Assistant Professor, Medical Surgical Nursing,  
Omayal Achi College of Nursing,  
Puzhal, Chennai - 600 066, Tamil Nadu.

---

DISSERTATION SUBMITTED TO

**THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY  
CHENNAI**

IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE DEGREE OF  
**MASTER OF SCIENCE IN NURSING**

**APRIL 2016**

## ACKNOWLEDGEMENT

First and foremost, I offer my thanksgiving to the **omnipotent originator of the universe** for the abundant grace at all times, in being here and in doing what he has willed me to.

“Gratitude spurs us on to prove ourselves worthy of what others have done for us. The spirit of gratitude is a powerful energizer.”

I am grateful to the charming gardeners who made my quest for knowledge a happy and fruitful one.

At the outset, I wish to express my deep sense of gratitude and salute to the **Vice Chancellor and Research Department of The Tamil Nadu Dr. M.G.R Medical University, Guindy, Chennai**, for giving me an opportunity to undertake my Postgraduate degree in Nursing at this esteemed university.

I owe my honest gratitude to the **Management** for giving me an opportunity and it is a matter of pride to acquire a Master’s degree from this renowned institution.

I am much obliged and take this opportunity to place on record my substantial token of gratitude to **Dr. K.R. Rajanarayanan**, B.Sc., M.B.B.S., FRSH (London), Research Coordinator, International Centre for Collaborative Research (ICCR), Omayal Achi College of Nursing and Honorary Professor in Community Medicine for his tutelage, “lily-white” encouragement and candid advice in completing this study.

I am immensely grateful to **Dr. (Mrs.) S. Kanchana Khan**, Principal and Research Director, ICCR, Omayal Achi College of Nursing for her donnish and philosophical guidance, intoxicating ideas, constant motivation and tangible assistance which proved to be catalytic for the successful completion of this study.

My heartfelt thanks and humble respects to **Dr. (Mrs.) Celina. D**, Vice Principal, Omayal Achi College of Nursing for her invigoration, ingenious thinking novelty and positive inspiration which was an inducement in conducting the study.

Once again, words fail me to express my deep sense of appreciation and gratitude to the veterans **Dr. K.R. Rajanarayanan, Dr. (Mrs.) S. Kanchana Khan** and **Dr. (Mrs.) Celina. D** for their tireless support and the extensive discussions around the study.

I warmly thank the **Executive Committee Members of ICCR** not only for their insightful comments and encouragement during research proposal, pilot study and mock viva presentation, but also for the hard question which instigated me to explore and broaden the research from various perspectives.

A special note of whole hearted gratitude to my esteemed guide **Mrs. M. Grace Lydia**, Assistant Professor, for her ardent and brilliant guidance, highly instructive research mentoring, moral support and intuitive corrections which stimulated me further in the successful completion of my study.

I wish to record my true-blue thanks to **Prof. Mrs. M. Sumathi**, Head of the Department, Medical Surgical Nursing and Class coordinator for her scholarly suggestions and keen observations in pointing out the necessary corrections to bring out the best in me, also the study a comprehensive one. It had been a great privilege to work under her supervision.

My explicit and unfeigned thanks goes to **Prof. Mrs. Jolly Ranjith**, Medical Surgical Nursing for sharing us the pearls of wisdom, treasured guidance and grammatical corrections right from the beginning of the study. Once again, thank you for being the guiding light with your constant vigilance, patience, knowledge and acumen, for shaping me into a better researcher.

It is my pleasure to acknowledge my **Class coordinators Dr. (Mrs.) P. Jayanthi, Mrs. Ruth Rani Princely. J,** Associate Professor and **Mrs. K. Manonmani,** Associate Professor for their personal attention and timely help that helped me to complete the study propitiously.

I owe a great deal of appreciation and expand my thanks to all the **HODs** and **faculty** for their constructive ideas and comprehensive review given towards the progress of my study.

I have to specially appreciate all the **faculties** as well as the **experts** in our study presentation who had improved our presentation skills, thanks to their comments and advices.

My fervent gratitude to **Mr. Yayathe Subbarayalu,** Research fellow Indian Council of Medical Research (ICMR) ICCR, Omayal Achi College of Nursing for his indomitable effort in guiding the statistical analysis of this research study.

An exceptional note of gratitude to **Mrs. Hemravi** and **Mr. J. Victor Dhanaraj,** Headmaster, Shree J.T.C. Jain Mission Higher Secondary School for editing this manuscript and tool in English and **Mrs. P. Kasthuri Thangam** M.A., M. Phil., M. Ed for editing the Tamil tool.

I am extremely thankful to **Mr. G.K. Venkataraman,** Elite computers, for his commitment and tireless spirit to convert this manuscript into acknowledged dissertation.

It is my fortune to gratefully acknowledge all the **Nursing** and **Medical experts** who cheerfully devoted much time in offering invaluable guidance and suggestions for further validating the tool for this study.

I express my profound gratitude to the **Director of Transgender Rights Association (TRA),** Perambur, Chennai and **Sahodaran - 2 Association (Snehidhi),** Washermenpet, Chennai, for rendering permission to conduct pilot study and the **Thozhi Association,** Aminjikai, Chennai plus **Thamil Nadu Aravanigal Association (THAA),** Saidapet, Chennai for conducting main study in their esteemed association.

I would like to pay high regards to all the **eunuchs**, ascertain to have an everlasting name in the kingdom of heaven. Without their precious support, it would not be possible to conduct this research.

I sincerely acknowledge the **librarians** of Omayal Achi College of Nursing and **The Tamil Nadu Dr. M.G.R. Medical University**, for their co-operation in collecting the related literature for this study.

I accord my deepest thanks to **Mrs. Swapna Susan Simon**, B.Sc., B.P.T., M.P.T (Neuro)., M.IA.P Consultant Physiotherapist for her training on static stretching exercises, without whom the study would not have reached this success.

I cordially thank my **M.Sc. Nursing Seniors (2013-2015 batch)** for their endless help and practical ideas, which helped me to mould my study in a better way.

It is a pleasant task to express my thanks to entire **M.Sc. Nursing bosom buddies, (2014-2016 batch)** for the stimulating discussions, for the sleepless nights we were working together before deadlines, and for all the fun we have had in the last two years.

I am pleased to express my affectionate gratitude to my dear progenitors **Mrs. V. Hemavathy** and **Mr. James Victor** for their unstinting support, presence and prayers and to my loving sibling **Mrs. J.V. Anita**, my adorable, faithful and charming fiancé **Mr. Sathiyaraj Kumar**, AIIMS, New Delhi. Thank you for believing in me, for being in the background at all times. A word of thanks to our closest confidants **Mrs and Mr. Manohari Jacob** for their special prayers, virtuous support and thank you for putting me on the right trajectory.

Last but not least, I would like to acknowledge several people who had knowingly and unknowingly helped in the successful completion of this research work. The learning curve has been steep and every one of you has enabled me to rise up further.



## LIST OF ACRONYMS AND ABBREVIATIONS

AHA	-	American Heart Association
AIDS	-	Acquired Immuno Deficiency Syndrome
ALL	-	Acute Lymphoblastic Leukemia
AML	-	Acute Myeloid Leukemia
ANOVA	-	Analysis Of Variance
ANP	-	Adult Nurse Practitioner
A.P	-	Andhra Pradesh
BJN	-	British Journal of Nursing
BMI	-	Body Mass Index
CBO	-	Community Based Organization
CDC	-	Centre for Disease Control and prevention
CHN	-	Community Health Nursing
CINAHL	-	Cumulative Index to the Nursing and Allied Health Literature
CNE	-	Continuing Nursing Education
CTVS	-	Cardio-Thoracic & Vascular Surgeon / Surgery
CVD	-	Cardio-Vascular Disorders
DIC	-	Disseminated Intravascular Coagulation
DVT	-	Deep Vein Thrombosis
ESHRE	-	European Society of Human Reproduction and Embryology
FTM	-	Female To Male
HA-VTE	-	Health care Associated Venous Thrombo-Embolism
HDL	-	High Density Lipoprotein
HIV	-	Human Immunodeficiency Virus
H/Q	-	Hamstring/Quadriceps
HRT	-	Hormonal Replacement Therapy
ICCR	-	International Centre for Collaborative Research
ICU	-	Intensive Care Unit
IOM	-	Institute Of Medicine
ISTH	-	International Society on Thrombosis and Hemostasis
IERB	-	Institutional Ethical Review Board
LGBT	-	Lesbian, Gay, Bisexual and Transgender health
MEDLINE	-	Medical Literature Analysis and Retrieval System Online

MI	-	Myocardial Infarction
M.P	-	Madhya Pradesh
MSN	-	Medical Surgical Nursing
MTF	-	Male To Female
NBCA	-	National Blood Clot Alliance
NCD	-	Non Communicable Disease
NGO	-	Non-Governmental Organization
NH	-	Null Hypotheses
NTDS	-	National Transgender Discrimination Survey
PAD	-	Peripheral Artery Disease
PE	-	Pulmonary Embolism
PPP	-	Peak Plantar Pressures
PUBMED	-	Public/Publisher Medline
PVD	-	Peripheral Vascular Disease
SCP	-	Stop Clot Package
S.D	-	Standard Deviation
SRS	-	Sex Reassignment Surgery
STD	-	Sexually Transmitted Diseases
SVT	-	Superficial Venous Thrombosis
TNAI	-	Trained Nurses Association of India
TOI	-	Times Of India
TRA	-	Transgender Rights Association
T <sub>2</sub> DM	-	Type 2 Diabetes Mellitus
THAA	-	Thamil Nadu Aravanigal Association
UCLA	-	University of California and Los Angeles
UNDP	-	United Nations Development Programme
U.P	-	Uttar Pradesh
USA	-	United States of America
VISA	-	Victorian Institute of Sport Assessment
VTE	-	Venous Thrombo-Embolism
WHO	-	World Health Organization
WPATH	-	World Professional Association for Transgender Health
WRIGHT	-	WHO Research Into the Global Hazards of Travel
WTD	-	World Thrombosis Day

## LIST OF SYMBOLS

&	-	And
F	-	ANOVA
'	-	Apostrophe or Single Quote
*	-	Asterisk or Star
'r'	-	Coefficient of correlation
]	-	Closed bracket
)	-	Close parenthesis
cm	-	Centimeter
:	-	Colon
,	-	Comma
°	-	Degree
.	-	Dot or Full Stop
=	-	Equals to
(F)	-	Fahrenheit
/	-	Forward Slash
hr	-	Hour
-	-	Hyphen
i.e	-	Id est / that is
X	-	Intervention
kg	-	Kilogram
<	-	Less than
p	-	Level of Significance
mg	-	Milligram
ml	-	Milliliter
>	-	More than
n	-	Number of samples
O	-	Observation or measurement of the dependent variable/outcome
[	-	Open bracket
(	-	Open parenthesis
%	-	Percentage
+/-	-	Plus or Minus

?	-	Question mark
“	-	Quotation mark
Rs.	-	Rupees
;	-	Semicolon
m <sup>2</sup>	-	Square metre
‘t’	-	Test statistic for t-tests
N	-	Total number of samples
yr	-	Year

## TABLE OF CONTENTS

CHAPTER NO.	CONTENT	PAGE NO.
	<b>ABSTRACT</b>	
<b>1</b>	<b>INTRODUCTION</b>	1
1.1	Background of the study	2
1.2	Significance and need for the study	7
1.3	Statement of the problem	11
1.4	Objectives	11
1.5	Operational definitions	12
1.6	Assumptions	13
1.7	Null hypotheses	13
1.8	Delimitation	14
1.9	Conceptual framework	14
1.10	Outline of the report	17
<b>2</b>	<b>REVIEW OF LITERATURE</b>	18
2.2	Sources of review of literature	18
2.3	Organisation of review of literature	19
2.3.1	Critical reviews related to incidence and prevalence of DVT	19
2.3.2	Critical reviews related to awareness on DVT	21
2.3.3	Critical reviews related to causes and risk factors of DVT	22
2.3.4	Critical reviews related to prevention of DVT	26
2.3.5	Critical reviews related to static stretching exercises	28
<b>3</b>	<b>RESEARCH METHODOLOGY</b>	31
3.1	Research approach	31
3.2	Research design	31
3.3	Variables	33
3.4	Setting of the study	33
3.5	Population	34
3.6	Sample	35

<b>CHAPTER NO.</b>	<b>CONTENT</b>	<b>PAGE NO.</b>
3.7	Sample size	35
3.8	Criteria for sample selection	35
3.9	Sampling technique	36
3.10	Development and description of the tool	37
3.11	Content validity	40
3.12	Ethical consideration	40
3.13	Reliability of the tool	42
3.14	Pilot study	42
3.15	Data collection procedure	44
3.16	Plan for data analysis	46
<b>4</b>	<b>DATA ANALYSIS AND INTERPRETATION</b>	48
<b>5</b>	<b>DISCUSSION</b>	68
<b>6</b>	<b>SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS</b>	74
	<b>REFERENCES</b>	81
	<b>APPENDICES</b>	

## LIST OF TABLES

TABLE NO.	TITLE	PAGE NO.
1.1.1	Incidence of VTE among different ethnic groups	3
1.1.3	Prevalence of DVT among hospitalized patients	4
1.1.4	Overall third gender statistics among different states	5
1.1.5	Global mortality rates of DVT and PE	6
3.2	Research Design	32
3.13	Reliability of the tool	42
4.1.1	Frequency and percentage distribution of demographic variables with respect to age in years, educational status and occupation in the experimental and control group.	49
4.1.2	Frequency and percentage distribution of demographic variables with respect to nature of activity, eunuch's family monthly income (in rupees) and eunuch's family size (no. of persons) in the experimental and control group.	50
4.1.3	Frequency and percentage distribution of lifestyle variables with respect to diet pattern and type of food and frequency of food intake (no. of days/ week) in the experimental and control group.	51
4.1.4	Frequency and percentage distribution of lifestyle variables with respect to smoking / tobacco use, alcohol use, type of drinking and drug abuse in the experimental and control group.	52
4.1.5	Frequency and percentage distribution of personal variables with respect to types of HRT and HRT users in eunuch's family in the experimental and control group.	53
4.1.6	Frequency and percentage distribution of anthropometric variables with respect to height (in cm), weight (in kg) and BMI in (kg/m <sup>2</sup> ) in the experimental and control group.	54

<b>TABLE NO.</b>	<b>TITLE</b>	<b>PAGE NO.</b>
4.2.1	Frequency and percentage distribution of pre and post test level of knowledge regarding prevention of DVT in the experimental group.	55
4.2.2	Frequency and percentage distribution of pre and post test level of knowledge regarding prevention of DVT in the control group.	57
4.2.3	Comparison of the pre and post test level of knowledge regarding prevention of DVT among the experimental and control group.	59
4.3.1	Comparison of pre and post test level of knowledge regarding prevention of DVT between the experimental and control group.	60
4.4.1	Frequency and percentage distribution of post test level of skill regarding prevention of DVT in the experimental group.	61
4.5.1	Correlation of the post test level of knowledge with skill regarding prevention of DVT in the experimental group.	63
4.6.1	Association of the selected demographic variables with the pre and post test mean score of knowledge and post test skill on SCP regarding prevention of DVT in the experimental group.	64
4.6.2	Association of the selected demographic variable nature of activity with post test mean score of knowledge regarding prevention of DVT in the experimental group.	66
4.6.3	Association of the selected demographic variable types of HRT with post test mean score of skill regarding prevention of DVT in the experimental group.	67



## LIST OF FIGURES

<b>FIGURE NO.</b>	<b>TITLE</b>	<b>PAGE NO.</b>
1.1.1	Crude Annual rate of diagnosis of VTE, DVT and PE among different ethnic groups	3
1.1.2	Problems faced by the eunuchs	5
1.1.3	Percentage of reported use of HRT among transgenders	6
1.1.4	Societal discrimination experienced by the eunuchs	7
1.9.1	Conceptual framework based on Tannahill's Model of health promotion	16
3.1	Schematic representation of Research methodology	47
3.9.1	Schematic representation for sampling	36
4.2.1	Percentage distribution of overall pre and post test level of knowledge regarding prevention of DVT in the experimental group.	56
4.2.2	Percentage distribution of overall pre and post test level of knowledge regarding prevention of DVT in the control group.	58
4.4.1	Percentage distribution of overall post test level of skill regarding static stretching exercises in the experimental group.	62

## LIST OF APPENDICES

APPENDIX	TITLE	PAGE NO.
A	Ethical clearance certificate	i
	IEC approval certificate	ii
B	Letter seeking and granting permission for conducting the main study	iii
C	Content validity	
	i) Letter seeking expert's opinion for content validity	vii
	ii) List of experts for content validity	viii
	iii) Certificate for content validity	x
D	Eligibility certificate	xvii
E	No Harm certificate for static stretching exercises	xviii
F	Certificate for English editing	xx
G	Certificate for Tamil editing	xxi
H	Informed consent	
	i) Informed consent requisition form	xxii
	ii) Informed written consent form	xxiii
I	Copy of the tool for data collection with scoring key	
	- English - Tamil	xxv
J	Coding for demographic variables	l
K	Blue print of data collection tool	lv
L	Intervention tool	
M	Plagiarism report	
N	Dissertation Execution Plan – GANTT Chart	
O	Photographs	
P	Pictorial brochure and CD with PowerPoint presentation	

# *ABSTRACT*

***“Effectiveness of Stop Clot Package on knowledge and skill regarding prevention of Deep Vein Thrombosis among eunuchs at selected settings”,  
Chennai.***

**ABSTRACT**

**Aim and objective:** To assess the effectiveness of Stop Clot Package on knowledge and skill regarding prevention of Deep Vein Thrombosis among eunuchs. **Methodology:** A quasi experimental non-equivalent control group pre test and post test design was adopted to assess the level of knowledge and skill regarding prevention of Deep Vein Thrombosis at Thozhi Association, Aminjikarai, Chennai and Tamil Nadu Aravanigal Association, Saidapet, Chennai. 60 eunuchs who fulfilled the inclusion criteria were selected (with 30 each in experimental and control group) using non probability purposive sampling technique. A Stop Clot Package comprising of lecture cum discussion, demonstration of static stretching exercises and return demonstration of static stretching exercises by the eunuchs formed the intervention of the study. The pre and post test level of knowledge and skill for the experimental group was assessed using structured knowledge questionnaire and observational checklist respectively; whereas in the control group the pre and post test level of knowledge alone was assessed using structured knowledge questionnaire. **Results:** The findings of the study revealed that comparison of post test level of knowledge between the experimental and control group indicated a calculated unpaired 't' value of  $t = 11.85$ , which was statistically very highly significant at  $p < 0.001$  level. The overall post test level of skill signified that 26 (86%) eunuchs had good skill. Statistically, a mild significant level of association was identified between the demographic variable nature of activity with the post test mean score of knowledge and types of Hormonal Replacement Therapy with the post test mean score of skill on Stop Clot Package regarding prevention of Deep Vein Thrombosis at  $p < 0.05$  level in the experimental group. **Conclusion:** The result showed that Stop Clot Package developed by the investigator was an effective educational tool in enhancing the knowledge regarding prevention of Deep Vein Thrombosis among eunuchs.

**Keywords:** Stop Clot Package, knowledge, prevention of Deep Vein Thrombosis, eunuchs.

**INTRODUCTION**

Deep Vein Thrombosis (DVT) is a blood clot that usually forms in the veins of the lower leg or calf, and can extend to involve the large deep veins of the upper legs or thighs. DVT ranks third when compared with other vascular diseases, thus remains a

community health problem and revocable patient safety problem. Centre for Disease Control and prevention (CDC, 2014). DVT and Pulmonary Embolism (PE) is the leading cause of death among 1,00,000 population per year. (Medical News Today, 2013).

The transwomen who are aged above 40, smokers, highly sedentary, obese and who have underlying thrombophilic disorders are at high risk for DVT. World Professional Association for Transgender Health (WPATH, 2014). The estrogen therapy is associated with twenty fold increase in Venous Thrombo-Embolism (VTE). University of California and Los Angeles (UCLA, 2013).

Considering the above mentioned factors, the investigator perceived that although the Hormonal Replacement Therapy (HRT) adds more benefit to the transgender patients, it is also linked with serious health consequences such as Cardio-Vascular Disorders (CVD), Type 2 Diabetes Mellitus (T<sub>2</sub>DM), liver abnormalities, cancer and VTE. The investigator identified that eunuchs were unaware about the prevention of DVT, thus developed a Stop Clot Package (SCP) which refers to a set of interventions comprised of lecture cum discussion, demonstration of static stretching exercises and return demonstration of static stretching exercises performed by the eunuchs.

### **Objective**

To assess the effectiveness of Stop Clot Package on level of knowledge regarding prevention of Deep Vein Thrombosis in the experimental and control group.

### **Null hypotheses**

**NH<sub>1</sub>**- There is no significant effect of Stop Clot Package on level of knowledge regarding prevention of Deep Vein Thrombosis in the experimental and control group at  $p < 0.05$  level.

**NH<sub>2</sub>**- There is no significant relationship between the post test level of knowledge with skill regarding prevention of Deep Vein Thrombosis in the experimental group at  $p < 0.05$  level.

The research process for this study was guided by the conceptual framework based on “Tannahill’s Model of health promotion.”

## **METHODOLOGY**

Quasi experimental non equivalent control group pre test and post test design was adopted for this study. The independent variable was SCP regarding prevention of DVT and the dependent variables were knowledge and skill regarding prevention of DVT among eunuchs. The main study research settings were Thozhi Association, Aminjikarai, Chennai for the experimental group and Tamil Nadu Aravanigal Association (THAA), Saidapet, Chennai for the control group. The target population was all the eunuchs who were on HRT for >1 year. The accessible population was all the eunuchs who met the inclusion criteria and were members of Thozhi Association and THAA. On an average, 500-650 eunuchs were on HRT in this association; out of which, 60 eunuchs who fulfilled the inclusion criteria (with 30 each in experimental and control group) was selected using non probability purposive sampling technique.

Initially, the DVT assessment was done to rule out the probability for DVT and then the pretest level of knowledge was assessed using structured knowledge questionnaire for both the groups. The investigator executed the SCP by educating 4-8 eunuchs in groups. It comprised of lecture cum discussion for 30 minutes with the aid of power point presentation for 30 minutes, along with demonstration of each static stretching exercises and the return demonstration was performed by the eunuchs. They were instructed to perform each static stretching exercises for about 3-5minutes, thrice daily as trained by the investigator and the total duration of the intervention was about 45 minutes.

After 7 days, for the experimental group, the post test level of knowledge and skill was assessed using structured knowledge questionnaire and observational checklist; whereas, for the control group only the post test level of knowledge was assessed using structured knowledge questionnaire.

Immediately after the completion of post test, reinforcement on prevention of DVT was given through pictorial brochure and the communication was maintained via WhatsApp technology for both the groups. Both descriptive and inferential statistics were used for data analysis.

## **RESULTS**

The findings of the study revealed that, in the experimental group the pretest mean score of knowledge was 9.33 with S.D of 3.66 and post test mean score of knowledge was 19.43 with S.D of 2.45. The calculated paired 't' value of  $t = -14.84$ , was found to be very highly significant at  $p < 0.001$  level; whereas in the control group, the pretest mean score of knowledge was 8.40 with S.D of 2.90 and post test mean score of knowledge was 8.20 with S.D of 2.78. The calculated paired 't' value of  $t = 0.20$ , showed no statistical significance. The comparison of post test level of knowledge between the experimental and control group, revealed a calculated unpaired 't' value of  $t = 11.85$ , which was statistically very highly significant at  $p < 0.001$  level. The overall post test level of skill denotes that 26 (86%) eunuchs had good skill in the experimental group. The correlation between the post test level of knowledge with skill score in the experimental group signified that the 'r' value of  $r = 0.15$ , was not statistically significant. The demographic variable nature of activity had shown mild statistical significant association with the post test mean score of knowledge and similarly, types of HRT also reported that there is a mild statistical significant association with post test mean score of skill on SCP regarding prevention of DVT in the experimental group at  $p < 0.05$  level.

## **DISCUSSION**

The study findings revealed that the SCP significantly improved the level of knowledge regarding prevention of DVT among eunuchs.

## **CONCLUSION**

The study findings concluded that there was a significant improvement in the pre and post test level of knowledge regarding SCP among eunuchs. Thus, SCP was an effective intervention in enhancing the level of knowledge among eunuchs.

## **IMPLICATIONS**

- Nurse managers play an exceptional role in updating the knowledge and skill of the staff nurses with regard to prevention of DVT.
- Nursing curriculum should include the transgender health care concepts.

- Nurse educators can organize seminars, workshops and conferences for novice nurse to keep them abreast with the latest information in transgender health.
- The Adult Nurse Practitioners (ANP) should encourage the expert nurses to formulate a primary care protocol for transgenders, to improve the quality of care.
- Nurse administrator should encourage the team members to implement the SCP in cardiac care units to prevent DVT.
- Nurse researcher should encourage the staff nurses to implement the research findings in daily care and bring out protocols to promote health of the eunuchs.



# *CHAPTER - 1*

## *INTRODUCTION*

## INTRODUCTION

An amazing system of god's creation is the cardio-vascular system, made up of three inter-related components such as heart, blood vessels and blood. It is marvelously a complex system and it is otherwise called as circulatory system or vascular system.

The vascular system comprises of arteries and veins, which circulates the blood all over the body. Despite the fact, if a disease occurs in any one of the arteries or veins, it may alter the circulation and eventually results in vascular disorder which includes Peripheral Vascular Disease (PVD), Renal artery stenosis, Buerger's disease, Raynaud's disease, Disseminated Intravascular Coagulation (DIC) and Stroke.

PVD encompasses a group of circulatory disorders that usually affects the arteries and veins of the arms along with legs distant from the heart as well as the brain American Heart Association (AHA, 2015). In addition to this, there are several conditions that occurs with PVD, which in turn affects the large deep veins of the lower legs or thighs and thus it includes Deep Vein Thrombosis (DVT), chronic venous insufficiency and varicose veins.

Among the PVDs, DVT ranks third when compared with other vascular diseases, thus remains a community health problem and revocable patient safety problem Centre for Disease Control and prevention (CDC, 2014). The major risk factors for DVT includes Hormonal Replacement Therapy (HRT) or birth control pills, injury or surgery to the veins, prolonged bed rest, heart failure, inflammatory bowel disease, previous DVT, obesity, advancing age, prolonged standing and sitting for long duration when driving or flying (Vascular disease foundation, 2012). Out of which, HRT is combined with serious health consequences such as Type 2 Diabetes Mellitus (T<sub>2</sub>DM), Cardio-Vascular disorders (CVD), liver abnormalities, cancer and Venous Thrombo-Embolic disease (VTE).

Particularly, for Male To Female (MTF) transsexuals, the cross sex hormone treatment is often associated with VTE and CVD (Innovations in Pharmacy, 2011). A recent information collected from the gender identity unit had reported that the HRT

users among the MTF transsexuals is associated with a higher cardio-vascular mortality rates (European Congress on Endocrinology, 2013). Therefore, DVT is proved to be the major cause of mortality and morbidity in MTF transsexuals, bedridden or hospitalized patients as well as in hale and healthy individuals. The ultimate aim of DVT is to prevent Pulmonary Embolism (PE) and to promote health education on regular exercise, brisk walking, swimming, bicycling, weight control, continuous monitoring of blood pressure, following a low fat, high fibre rich diet, adequate fluid intake, quit smoking, alcohol cessation, wearing compression stockings and contacting a physician to monitor the side effects of HRT regimen and obtaining an appropriate follow up advice from a physician.

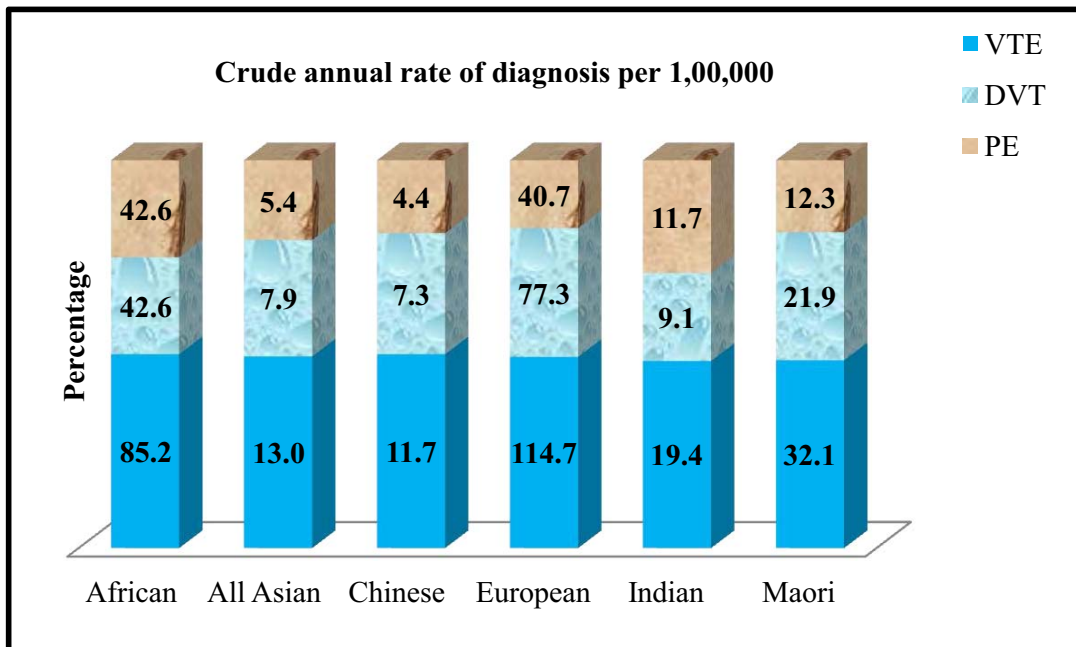
On March 2015, in remembrance of Blood Clot Awareness month, National Blood Clot Alliance (NBCA) along with CDC started a community health campaign, “Stop the Clot, Spread the Word”, which was intended to provide adequate information about DVT and its common risk factors with clinical signs and symptoms. Apart from this, the educational contents are easily accessed through internet and a risk assessment checklist was given to both the patients and their family members to consult with their health care professionals (NBCA, 2015)

## **1.1 BACKGROUND OF THE STUDY**

PVD is almost a widespread condition, where about 8 million cases were reported in the United States of America (USA) and moreover, the people who are aged above 60, shows a high prevalent rate of Peripheral Artery Disease (PAD) from 12-20%. The global burden of this disease had relatively increased from 164 million to 202 million between 2000-2010 and therefore, it must be handled as a medical emergency (CDC, 2013)

Universally, it is estimated that both heart attack and stroke are proved to be the cardinal killers of cardio-vascular diseases. Thirdly, the VTE is considered to be the silent killer of vascular system, which is often underestimated, not addressed and most of the transwomen were unaware about this condition as well as, its long term complications.

The 2014 World Thrombosis Day (WTD) report stated that, the Non Communicable Diseases (NCDs) are booming everywhere and it is the number one cause for death and disability every year. Further in 2015, the WTDs mission is to endorse with World Health Assembly (WHA) and World Health Organization (WHO), mainly aimed to bring down the premature mortality rates caused by NCDs to 25% by 2025.



**Figure 1.1.1: Crude Annual rate of diagnosis of VTE, DVT and PE among different ethnic groups per 1,00,000 population in the year of 2014**

Source: [International Society on Thrombosis and Hemostasis (ISTH, 2014)]

**Table 1.1.1: Incidence of VTE among different ethnic groups in the year of 2014**

Ethnic groups	VTE	DVT	PE	Population
African	6	3	3	1320
All Asian	46	28	19	66,273
Chinese	16	10	6	25,670
European	1930	1301	684	3,15,425
Indian	15	7	9	14,472
Maori	73	50	28	42,579
Pacific Islander	34	24	10	30,405

Source: [ISTH, (2014)]

At present, the Health care Associated VTE (HA-VTE) is emerging out more in the USA and the CDC is designed to cover some important challenges to prevent HA-VTE. It involves to

- ❖ promote better understanding about HA-VTE
- ❖ recognize and provide excellent strategies to prevent HA-VTE
- ❖ reinforce the health care monitoring standards and protocols to prevent HA-VTE (CDC, 2015)

**Table 1.1.3: Prevalence of DVT among hospitalized patients in the Indian scenario, 2010**

S.No	Patient group	Prevalence rate in percentage (%)
1.	Medical patients	10-20
2.	General surgery	15-40
3.	<b>Major gynecologic surgery</b>	<b>15-40</b>
4.	Neurosurgery	15-40
5.	Stroke	20-50
6.	Hip or knee arthroplasty surgery	40-60
7.	Major trauma	40-80
8.	Spinal cord injury	60-80
9.	Critical care patients	80
10.	Major urologic surgery	15-40

**Source: [Medicine Update, (2010)]**

The current statistics revealed that around 9,00,000 people were affected with both DVT and PE every year in the USA. Above all, it is said that nearly, 60,000-1,00,000 cases were deceased due to DVT/PE and suspected rate of death occurs among 10-30% of the population during the first month of diagnosis itself.

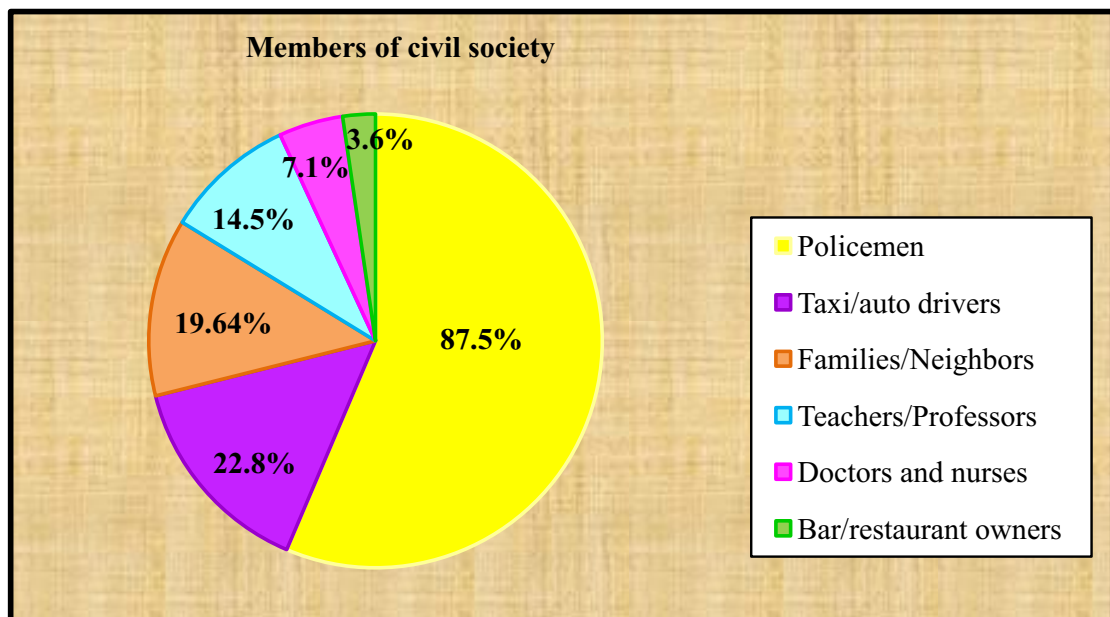
Moreover, DVT and PE is the leading cause of death among 1,00,000 population per year (Medical News Today, 2013). While among transwomen, the estrogen therapy is associated with twenty fold increase in VTE University of California and Los Angeles (UCLA Health care, 2013). It is said that approximately 4,90,000 hijras or eunuchs were

living in India, among which 55,000 were under 6 years and 66% of population were living in rural areas Times of India (TOI Census Report, 2014).

**Table 1.1.4: Overall third gender statistics among different states in the year of 2014**

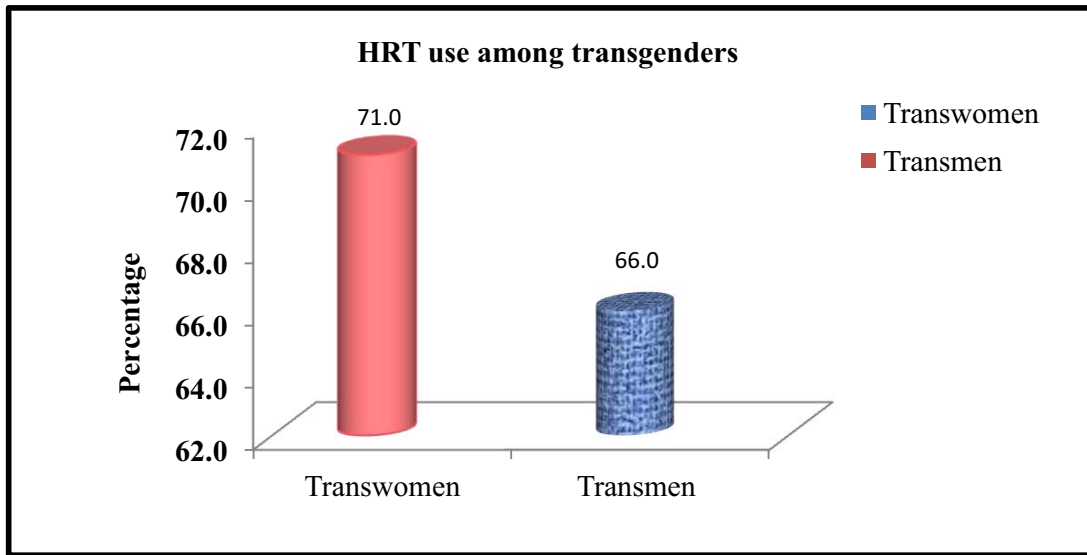
State	No. of third gender persons ('000s)
Uttar Pradesh (U.P)	137
Andhra Pradesh (A.P)	44
Maharashtra	41
Bihar	41
West Bengal	30
Madhya Pradesh (M.P)	30
Tamil Nadu	22
Odisha	20
Karnataka	20
Rajasthan	17
India	288

Source: [TOI, (2014)]



**Figure 1.1.2 Problems faced by the eunuchs**

Source: [International Journal of Social Science and Humanity, (2015)]



**Figure 1.1.3 Percentage of reported use of HRT among transgenders**

Source: [National Transgender Discrimination Survey (NTDS, 2010)]

Further the survey report also stated that, 93% of the transgenders, who were undergoing Sex Reassignment Surgery (SRS) were on continuous HRT. On an average, majority of the eunuchs consume estrogen only therapy to exhibit their femininity and this is considerably linked with a greater incidence of VTE when compared to other forms of estrogen supplements (Indian Journal of Endocrinology and Metabolism, 2012).

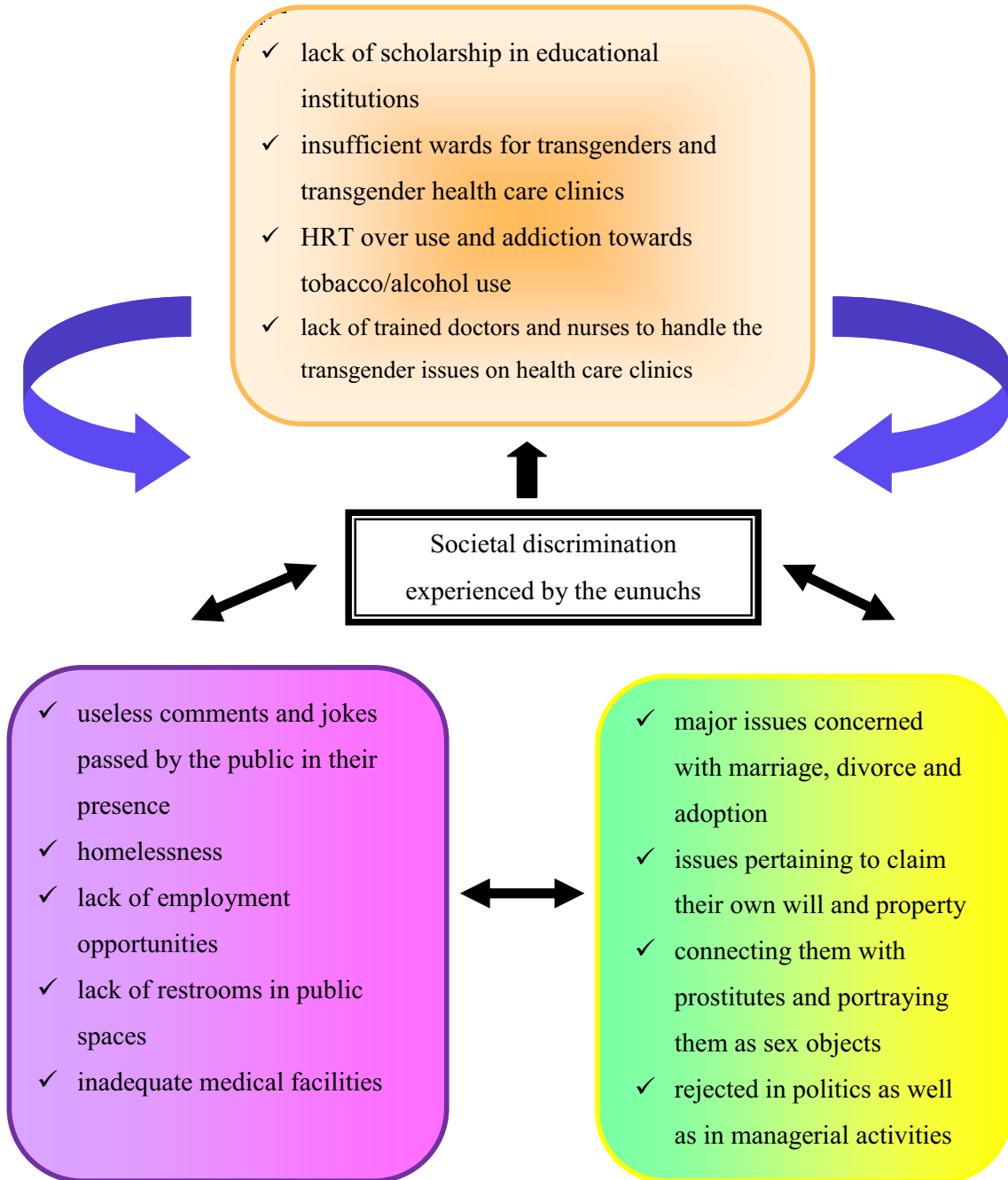
**Table 1.1.5 Global mortality rates of DVT and PE in the year of 2014**

Criterias	Percentage (%)	
	DVT	PE
VTE	62	38
VTE recurrence	16.9	16.2
Bleeding event	7.4	6.9
Cancer	16.8	18.9
Surgery	3.6	3.1
Unprovoked	3.8	4.1

Source: [AHA, (2014)]

## 1.2 SIGNIFICANCE AND NEED FOR THE STUDY

In India, the hijras or eunuchs were highly brutalized and often stigmatized in the workplace, hospitals, clinics and also in the community. They are rejected by their own family members and friends.



**Figure 1.1.4: Societal discrimination experienced by the eunuchs**

**Source: [International Journal of Social Science and Humanity, (2015); United Nations Development Programme (UNDP, 2010)]**



To address these issues, the Tamil Nadu Government formed a transgender welfare board and instituted a hijra/aravani welfare policy in India, which includes the 'third gender' category/option in all the authorized documents, provides voting rights along with adhar card since 2014 and also the SRS was provided free of cost in all the government hospitals, all over Tamil Nadu (Transgender Rights in India, 2015).

Aside from this, still most of the eunuchs were facing lot of mental stress and physical illness, because the overuse of HRT without medical supervision had led to a serious side effect called DVT or PE. If left untreated, it puts the eunuchs under severe risk and finally it may end up in post thrombotic syndrome and venous stress disorder.

Therefore, these problems could be identified at an earlier stage and certain preventive efforts can be taken to create awareness about DVT among eunuchs. This provides a detailed picture about DVT to enhance knowledge and it consists of static stretching exercises which includes towel stretch, standing calf stretch, resisted ankle plantar flexion, heel raise, single leg balance, nose touch and wall jump. The main goal of static stretching exercises is to improve contraction, relaxation, flexibility, joint range of motion and thereby it helps to promote calf muscle strength and ankle mobility.

Apart from this in 2014, ISTH had begun a WTD movement in partnership with more than 320 health care and medical organization to treat this dangerous blood clots and it was marked on 13<sup>th</sup> October, worldwide. The WTD campaign provides an overall picture about VTE and also its preventive aspects.

The 2015 impact report suggested that, this year WTD concentrates much towards the HA-VTEs and this campaign covered more than 440 million population and nearly 6500 grass root activities were carried out all over the world.

Every year, the National DVT awareness day is celebrated in the month of March to disseminate overall information regarding DVT and long term complications such as PE among patients and other health care professionals. In September 2010, both the Hemophilia and Thrombosis Centre, University of North Carolina at Chapel Hill launched an outreach program, the Clot Connect, directed towards the people who are diagnosed with VTE or at high risk for VTE and for the health care professionals who

are in touch with the VTE patients. The program covers a wide range of activities such as providing free online educational materials and journal articles on DVT and PE, sending newsletters with updated information on DVT and clotconnect.org website to provide education on VTE, separate communication blog to share information or clarify their doubts and conducts campaign on “Be Clot Aware”, mainly focusing on the risk factors and symptoms of DVT and PE to create an alert among the patients and family members.

Lavall.A.Kathryn., CostelloF.Joanne., (2015) conducted a survey to assess the level of knowledge on VTE among the general population. The survey report concluded that, more than half of the population were unaware about VTE and conveyed that the nurses need to health educate the general public on VTE in order to reduce its morbidity and mortality rates.

Boulton Adam., Fenton Mathew., Loka Thomas., Sharif Zuhair (2015) conducted a survey to explore the awareness on DVT and to rule out whether the socio-demographic factors have an impact over the level of knowledge on DVT among the outskirts of Birmingham, United Kingdom. The study concluded that the level of awareness on DVT is highly limited as well as the men who were living with the low socio-economic status, were reported with inadequate knowledge on DVT and its preventive measures.

Lee Ah Jung et.al, (2014) assessed the knowledge regarding risk assessment of VTE and preventive measures among bedside nurses in two different hospitals. The study concluded that majority of the nurses were reported with adequate knowledge and needs more improvement in relation to VTE prevention and its care.

Asscheman.H et.al, (2014) conducted a systematic review among MTF transsexuals with regard to cross sex hormone treatment administration. During the first year of estrogen replacement therapy, VTE is considered to be a major risk. In order to reduce the occurrence Of DVT, transdermal estrogens may be preferred among transwomen.

Similarly, Granata Riccarda., Isgaard Jorgen (2014) reported that VTE is considered not only to be a major risk with post menopausal women but also among the

transwomen. Wherefore, the transdermal route is highly advised for patients who are aged above 40 years and at risk for VTE.

Gooren. J. Louis., Weirckx Katrein., Griltay J. Erik (2014) conducted a clinical study among transsexual subjects who are under cross sex hormone treatment in order to rule out the cardio-vascular mortality rate. The study findings showed that MTF transsexuals are highly afflicted with heart disease when matched up with Female To Male (FTM) transsexuals.

Walsh David., Hendrickson G. Sherry (2013) conducted a cross sectional survey among public and private schools of Nursing in Texas with regard to transgender health care concepts. The study revealed that most of the nursing students were not aware about these concepts and more than half of the population were unaware about the referral services available for transgender patient.

Wierckx Katrein et.al, (2013) carried out a cross sectional survey to find out the incidence rate of cancer and CVD among transgenders who were on HRT. The survey instigated that almost all the transwomen were reported to have Myocardial Infarction (MI), VTE, CVD and T<sub>2</sub>DM whereas the incidence rate was comparatively low among transmen who were on HRT.

Ivy Gardner., Joshua Safer (2013) introduced a standard set of instruction for the transgenders who are on HRT. At first, the transgenders who were on HRT should keep track of his/her status once in three months for the first year and followed by that, every 6-12 months to monitor the side effects of HRT. Secondly, they proposed a regimen for MTF transsexuals that combination of an antiandrogen and estrogen replacement therapy can be administered to bring down their testosterone levels to a normal female range.

Dhejne et.al, (2011) conducted a population based cohort study and reported the major causes of death among transgender patients, after SRS. It was found that there is marked increase in the CVD when compared to other disease among the general population.

Vardi Moshe., Dagna Lorenzo., Haral Michal., Duckit Roger (2011) conducted a survey to investigate the level of knowledge and attitude on preventive measures of VTE among doctors who were specialized in internal medicine. The survey report stated that, most of the doctors were coded with moderate level of knowledge and personally believed that the precautionary measures played an important role in preventing VTE.

Eliason J.Michele., Dibble Suzanne., Joseph De Jeanne (2010) conducted a literature review on Lesbian, Gay, Bisexual and Transgender health (LGBT) among nurses. The review identified that, only 8 articles were hit in the top-10 Journal of Nursing and it was wholly directed towards the LGBT population.

Although, there is less supporting statistics available in our country related to DVT among eunuchs, it proves to be a serious life threatening condition as like CVD and stroke.

Considering the above mentioned factors, the investigator perceived that despite the fact that HRT adds more benefit to the transgender patients, it was also associated with serious side effects such as calf muscle pain or swelling, leg ulcers, breast tenderness, fluid retention, headache and indigestion. Hence, the investigator identified that the eunuchs were unaware about its preventive aspect and they were not given any opportunities to discuss about the HRT regimen with the healthcare professionals, thus executed SCP to improve the level of knowledge and skill regarding prevention of DVT.

### **1.3 STATEMENT OF THE PROBLEM**

A quasi experimental study to assess the effectiveness of Stop Clot Package on knowledge and skill regarding prevention of Deep Vein Thrombosis among eunuchs at selected settings, Chennai.

### **1.4 OBJECTIVES**

1. To assess the effectiveness of Stop Clot Package regarding prevention of Deep Vein Thrombosis in the experimental and control group.
2. To assess the post test level of skill regarding prevention of Deep Vein Thrombosis in the experimental group.

3. To correlate the post test level of knowledge with skill regarding prevention of Deep Vein Thrombosis in the experimental group.
4. To associate the selected demographic variables with pre and post test mean score of knowledge and post test skill on Stop Clot Package regarding prevention of Deep Vein Thrombosis in the experimental group.

## **1.5 OPERATIONAL DEFINITIONS**

### **1.5.1 Effectiveness**

It refers to the outcome of Stop Clot Package, assessed in terms of change in level of knowledge and skill in prevention of Deep Vein Thrombosis, evaluated using structured knowledge questionnaire and observational checklist respectively within the study period.

### **1.5.2 Stop Clot Package (SCP)**

It refers to the interventions, developed by the investigator, aimed at prevention of Deep Vein Thrombosis, by educating 4-8 eunuchs in groups. It comprises of

- lecture cum discussion on definition, causes, risk factors, pathophysiology, clinical manifestations, diagnostic evaluation, treatment, possible complications and preventive measures including static stretching exercises with the aid of power point presentation for 30 minutes.
- demonstration of static stretching exercises by the investigator, which includes towel stretch, standing calf stretch, resisted ankle plantar flexion, heel raise and mini squat for legs and calf muscle for 15-30 seconds.
- return demonstration of static stretching exercises by the eunuchs.
- the clients were instructed to repeat each exercise 3-5 minutes, thrice daily which was appraised based on the observational checklist.
- the total duration of the intervention was about 30-45 minutes.

### **1.5.3 Knowledge**

It refers to the level of understanding about prevention of Deep Vein Thrombosis among eunuchs, evaluated using a structured questionnaire, devised by the investigator. The evaluation was done by the investigator after a period of 7 days.

#### **1.5.4 Skill**

It refers to the capability of eunuchs to perform static stretching exercises for preventing Deep Vein Thrombosis, evaluated using an observational checklist, devised by the investigator. The evaluation was done by the investigator after a period of 7 days.

#### **1.5.5 Prevention of Deep Vein Thrombosis (DVT)**

It involves certain preliminary measures such as education on healthy diet, weight control, brisk walking, regular monitoring of blood pressure, adequate fluid intake, smoking and alcohol cessation, managing the side effects of estrogen, practice of static stretching exercises and follow up advice aimed at reducing the occurrence of Deep Vein Thrombosis.

#### **1.5.6 Eunuchs**

Refers to the person who identifies with or expresses a gender identity that differs from the one which corresponds to the person's sex at birth and are at risk for Deep Vein Thrombosis due to Hormonal Replacement Therapy for more than 1 year, falling under the age group of 21-60 years. Likewise, the person who had undergone Sex Reassignment Surgery from male to female and considered a female presently, associated with transgender welfare organization such as Thozhi Association and Tamil Nadu Aravanigal Association.

### **1.6 ASSUMPTIONS**

1. Eunuchs may use hormonal supplements to exhibit their femininity.
2. Eunuchs are prone to develop DVT due to long term hormonal supplements.
3. Eunuchs may have some knowledge regarding prevention of DVT.
4. Awareness regarding SCP may enhance their knowledge and skill on prevention of DVT.

### **1.7 NULL HYPOTHESES**

**NH<sub>1</sub>:** There is no significant effect of Stop Clot Package on level of knowledge regarding prevention of Deep Vein Thrombosis at  $p < 0.05$  level.

**NH<sub>2</sub>:** There is no significant relationship between the post test level of knowledge with skill regarding prevention of Deep Vein Thrombosis in the experimental group at  $p < 0.05$  level.

**NH<sub>3</sub>:** There is no significant association of selected demographic variables with the pre and post test mean score of knowledge and post test skill on Stop Clot Package regarding prevention of Deep Vein Thrombosis in the experimental group at  $p < 0.05$  level.

## **1.8 DELIMITATION**

1. The study was delimited to a period of 4 weeks.
2. The study was limited to eunuchs who were on HRT for more than 1 year.

## **1.9 CONCEPTUAL FRAMEWORK**

A conceptual framework or model refers to “written or visual presentation that explains either graphically, or in narrative form, the main things to be studied- the key factors, concepts or variables – and the presumed relationship among them.” Miles and Hubermann, (1994).

The investigator adopted **Tannahill’s model of health promotion**, as a basis for conceptual framework, which was aimed to assess the effectiveness of SCP on knowledge and skill regarding prevention of DVT among eunuchs.

As specified in this theory, the concept of health promotion is comprised of three over-riding subcomponents which includes prevention, health education plus health protection in order to improve physical health and also to prevent from debility. Hitherto, the investigator was energetically involved in achieving adequate knowledge and skill regarding prevention of DVT among eunuchs through SCP, withal this framework includes three major subcomponents that describe the phenomena.

### **1.9.1 PREVENTION**

Appertain to the act of preventing illness and helps to reduce the risk from infirmity. Here the investigator selected the eunuchs were on HRT for more than 1 year

and assessed the pre test level of knowledge regarding prevention of DVT, by using a structured questionnaire. It mainly aimed at reducing the occurrence of DVT.

### **1.9.2 HEALTH EDUCATION**

Denotes tutoring of 4-8 eunuchs in groups about SCP, thereby to improve the level of knowledge and skill regarding prevention of DVT. Here the investigator executed the SCP which comprises of lecture cum discussion on DVT, demonstration of static stretching exercises by the investigator and return demonstration of static stretching exercises by the eunuchs.

### **1.9.3 HEALTH PROTECTION**

Refers to the screening of eunuchs from DVT, primarily targeted at the prevention of DVT and to promote the positive enhancement of wellbeing. At this phase, the investigator assessed the post test level of knowledge and skill using structured questionnaire and observational checklist respectively. Following this, a pictorial brochure was issued with a view to reinforce the prevention of DVT and an ongoing communication was maintained through WhatsApp technology. For the eunuchs, who had gained adequate level of knowledge and good skill, reinforcement was given; for moderately adequate and inadequate level of knowledge along with fair and needs improvement in skill were enhanced to advance the learning process.

### **CONCLUSION**

This theory has three major components including prevention, health education and health protection. In conditions like DVT, health education plays a major role in prevention of DVT. As eunuchs also need this protection, the above mentioned theory was incorporated by the researcher into this study.



## **1.10 OUTLINE OF THE REPORT**

- CHAPTER 1:** Deals with the background of the study, significance and need for the study, statement of the problem, objectives, operational definitions, null hypotheses, assumptions, delimitations and conceptual framework.
- CHAPTER 2:** Focuses on critical review of literature related to the present study.
- CHAPTER 3:** Enumerates the methodology of the study.
- CHAPTER 4:** Presents the data analysis and data interpretation.
- CHAPTER 5:** Deals with the discussion of the study.
- CHAPTER 6:** Gives the summary, conclusion, implications, recommendations and limitations of the study.

## *CHAPTER - 2*

### *Review of literature*

## REVIEW OF LITERATURE

This chapter focuses on literature review, which helps to lay the context and foundation for this study.

Literature review refers to a “written summary of evidence on a research problem”. Polit and Beck, (2012) and Critical review is meant as summarization and evaluation of the ideas and information of an article.

Some important purposes of literature review is to

- alert the researcher to unresolved research problems
- identify a study for replication or comparison
- define ethical implications of similar studies
- provide a conceptual context and information on the research approach
- orient to what is already known
- determine how well the theory and research are developed in the study
- bring the research problem into sharper focus

### SECTION 2.2: SOURCES OF REVIEW OF LITERATURE

The literature review was collected from various sources such as **primary**: from research reports, conference manual and theses, **secondary**: reviews from internet, national and international journal articles and the **tertiary sources** from Medical Surgical Nursing (MSN) and Community Health Nursing (CHN) books.

This review of literature was done using the key words such as DVT, venous thrombosis, prevalence, awareness, knowledge, incidence, mortality, morbidity, causes, etiological factors, risk factors, predisposing factors, contributing factors, triggering factors, diagnostic measures, treatment, prevention, complications, pharmacological prophylaxis, non pharmacological prophylaxis, management, treatment modalities and static stretching exercises. This review was searched based on standard databases such as COCHRANE library, Cumulative Index to the Nursing and Allied Health Literature (CINAHL), Google Scholar, Medical Literature Analysis and

Retrieval System Online (MEDLINE), Public / Publisher Medline (PUBMED), and other unpublished studies from dissertations. Collectively 200 studies were searched out of which 93 relevant and updated studies were utilized to support the current research topic. Among the selected 93 supportive studies, 86 were international and 7 were Indian literatures.

### **SECTION 2.3: ORGANISATION OF REVIEW OF LITERATURE**

SECTION 2.3.1: Critical reviews related to incidence and prevalence of DVT

SECTION 2.3.2: Critical reviews related to awareness on DVT

SECTION 2.3.3: Critical reviews related to causes and risk factors of DVT

SECTION 2.3.4: Critical reviews related to prevention of DVT

SECTION 2.3.5: Critical reviews related to static stretching exercises

#### **SECTION 2.3.1: CRITICAL REVIEWS RELATED TO INCIDENCE & PREVALENCE OF DVT**

Qu Hong et.al, (2015) carried out a retrospective study to find out the prevalence rate of VTE among patients who were admitted for gynecological surgery, in Chao-Yang Hospital, Beijing. This evidenced that, prevalence rate of DVT and PE was significantly very high in these patients. Also, the subjects were at greater risk for developing DVT during the first week of hospitalization, after surgery.

Yang Dong Si et.al, (2015) executed a retrospective case cohort study to find out the incidence rate of DVT among patients with post spine surgeries. The result demonstrated that around 17% of the new cases were presented with DVT in the above mentioned patients. Raskob et.al, (2014) reported that the prevalence of VTE is more common among people who are aged above 70 years and it ranges between 2-7 per 1000 population. Similarly it is predicted to be around 1.82 million cases by 2050. Additionally, Waldron Beth (2014) stated that approximately 6,00,000 people were affected with DVT annually and the mortality rate is markedly very high in America. Particularly, the HA-VTE was proved to be the number one cause for death among people who were residing in the USA. Moreover, the DVT and PE are the first and foremost cause of death among pregnant women.

Yeo W. X et.al, (2014) proceeded with an analytical review to rule out the prevalence rate of VTE among Asian patients. The review disclosed that the prevalence rate of VTE was proved to be very less in these patients. Xing shun Qi., Ren Weirong., Guo Xiaozhong., Fan Daiming (2014) enumerated that the morbidity rates of DVT and PE was around 0.6% and 0.28% among patients who were admitted with hepatic diseases.

Nutescu., Crivera., Schein., Bookhart (2014) analyzed in a retrospective observational study following patients who were hospitalized again with DVT and PE. The result concluded that 37% of the patients were admitted again with DVT and 67% with PE. On the other hand, the relapse of DVT and PE was highly prevalent during the first 30 days of initial hospitalization.

Vu Khanh et.al, (2014) examined a retrospective study to find out the morbidity and mortality rates of VTE betwixt leukemia patients in Anderson Cancer Centre, USA. On the whole, the study found that 80% of the patients were diagnosed with VTE. Out of which, 15% of the Acute Lymphoblastic Leukemia (ALL) as well as 8% of the Acute Myeloid Leukemia (AML) patients were reported with PE. In the same way, the relapse of VTE was about 18.6% in AML patients and 20.7% in ALL patients.

Kourlaba Georgia., Relakis John., Kontodimas Stathis., V.Holm Majbrit., Maniaadakis Nikos (2013) conducted a review and reported that VTE prevalence rate in pregnancy is about 1.2 cases per 1000 deliveries.

Angral., Islam., Kundan (2012) carried out a prospective study and reported the incidence rate of DVT among Indian patients. The findings revealed that DVT and PE is not very high in India. While, Hong Chun Kee et.al, (2012) found out the prevalence rate of DVT among critically ill patients in the intensive care units. The findings documented that there was a low prevalence rate among these patients.

Keiseme Emeka., Keisema Chinenye., Jebbin Nze., Irekpita Eshiobo., Andrew Dango (2011) also reported that the prevalence rate of DVT is 4.8 per 1,00,000 population, showing a comparatively greater risk among males than the female subjects. Behera Manoranjan., Gandharbha Ray (2010) had compared the incidence rate of

VTE between Indian as well as in Western Scenario and confirmed that it occurs more common among US Whites and Blacks. Also, the current studies suggest that 9,00,000 people per year are affected with non fatal VTE in the USA. Besides in India, VTE is grossly underrated because of dearth of insufficient studies and prevalence of VTE is very less when compared to the Western population.

### **SECTION 2.3.2: CRITICAL REVIEWS RELATED TO AWARENESS ON DVT**

Ravneet Kaur., Manjeet Saagi., Rashmi Choudary (2016) conducted a quasi experimental study to assess the effectiveness of Structured Teaching Program on knowledge regarding DVT prophylaxis in patients among registered nurses at Civil Hospital, Mohali. After four days of regular teaching, the post test level of knowledge was assessed and it was found that this program was highly recommended for the registered nurses, as it improved their level of knowledge on DVT prophylaxis.

Haymes Adam (2015) assessed the awareness on VTE among surgical patients who were admitted in the pre-operative phase. The pre-operative assessment revealed that, about half of the patients were unaware about VTE and its preventive measures. Thereby, to increase their knowledge on VTE, a complete educational package can be given to all the medical and surgical patients to encourage early ambulation and promote fast recovery.

Aaron M. Wendelboe (2015) conducted a survey to explore the awareness on VTE among 800 respondents from different countries. On the whole, the survey reported that around 55% of the respondents were unaware about DVT plus PE, and therefore certain health education campaigns can be organized to improve health and prevent from the long term complications of VTE. Similarly, Tang Xiao., Sun Bing., Yang Yuanhua., Tong Zhaohui (2015) led a survey to assess the level of knowledge on prevention of VTE among medical staffs who were working in Intensive Care Units (ICUs) of North China. The survey findings revealed that majority of the nurses and doctors were unaware about VTE and its prophylactic measures. Hence, in order to prevent the occurrence of VTE, in-house educational programs and standard protocols can be made available to all the medical staff to enhance their knowledge and skill on preventive aspects of DVT and PE.

Sujitha Elavally., Usha., Ramya (2015) conducted an experimental study to determine the effectiveness of Dash Board educational programme on VTE risk assessment adherence among registered nurses who were working in a Tertiary Care Hospital. After implementing this programme, almost all the staff nurses gained adequate level of knowledge on VTE and appropriately followed this risk assessment in their area of practice.

Hameed Al Fahad., Dorzi Al M. Hasan., Aboelnazer Essam (2014) performed a retrospective study to investigate whether the in-house education program has an influence over VTE prevention and mortality rates among patients who were admitted in Tertiary Care Hospital. The result proved that this program was able to bring down the mortality rates to 10% and most of the health care professionals started using this prophylactic measures in a safe manner.

Visperas Christie Julie., Mendoza Erick (2012) checked the level of knowledge, attitude and practice on VTE prevention among physicians who were working in Santo Tomas Hospital. The study analyzed that around 72% of the physicians were aware about the guidelines on VTE prophylaxis and personally felt that each and every patient should be involved in this prophylaxis regimen on initial hospitalization. Also, they identified that the hospital does not practice any specific protocol for VTE prophylaxis. Besides, Cruz Majluf (2012) carried out a cross-sectional survey to test the awareness on VTE among Mexican internists. The survey concluded that most of the respondents reported to have inadequate knowledge on VTE risk factor assessment along with diagnostic tests.

Wang Chen., Zhai Zhen-guo., Ying H. Shen (2010) reported that VTE is a global health problem in both Western as well as in Chinese population. So, the researchers made it very clear, that there is a need for more patient-centered research and awareness campaigns on VTE in modern China.

### **SECTION 2.3.3: CRITICAL REVIEWS RELATED TO CAUSES AND RISK FACTORS OF DVT**

Yang Dong Si et.al, (2015) mentioned certain possible risk factors for DVT, which is more common among patients with post spine surgery and increased blood

pressure, old age, elevated levels of High Density Lipoprotein (HDL) plus D-dimer values; whereas Hong Chun Kee et.al, (2012) identified some of the causative factors for DVT, which includes advancing age, gender and increasing BMI.

Memon A.A., Zoller. B., Svensson P.J., Sundquist J., Sundquist K (2015) researched a prospective follow up study to predict whether the family history of VTE is a contributing factor for VTE relapse among patients who are under Malmo Thrombophilia study. The findings reported that family history of VTE is one of the major predisposing factor for VTE relapse among women and positive Thrombophilia subjects. A group of researchers (Ji Jian Guang., Sundquist Jan., Sundquist Kristina 2015 & Prandoni Paolo et.al, 2012) conducted an extensive review to investigate if sudden death or previous family history of DVT poses a greater threat for VTE. The outline of review puts forward that, the positive family history carries a higher risk of VTE among patients with sudden death.

Array of researchers (WHO Research Into The Global Hazards of Travel (WRIGHT) 2015; Keiseme Emeka et.al, 2011; Gavish Israel, Brenner Benjamin 2010) had clearly stated that DVT occur most frequently in long duration air travelers and hence it is otherwise called as economy class syndrome. In general, Gavish Israel et.al, (2010) had documented the inter-relationship between long distance travel and VTE. However, the researchers identified that women who are aged above 40, obese, suffering from varicose veins and on HRT are some of the definitive risk factors for air travel related VTE. In addition to this, WRIGHT, (2015) analyzed and reported that prolonged inactivity could be a causative factor for VTE, which is increased upto 2-3 fold and it might result in calf muscle pain, edema, swelling and muscle cramps.

Multiple researchers (Yun Jiu Cheng et.al, 2015; Marc Blondon 2012; Enga K.F et.al, 2012) worked in a population based cohort study to find out whether there is a causal connection between extensive smoking and VTE. The study found out that extensive smoking is one of the aggravating risk factor for VTE among chronic smokers. While Sweetland Sian et.al, (2013) conducted a prospective based cohort study to investigate the causatum of smoking and to reconnoiter the prevalence rate of VTE among heavy smokers, either followed by a surgery in the post operative period or in the absence of any surgical procedure among female clients at United Kingdom. A 6 year



follow up review was done and observed that the prevalence rate of VTE is considerably high among chronic smokers even in the post operative period after 12 weeks as well as in the absence of any surgery in comparison with the non-smokers.

A group of researchers (Kimble Sharon 2015; Kalra Sanjay 2012; Keller Kimberley 2009) conducted a systematic review regarding endocrine treatment guidelines for eunuchs. The review concluded that the artificially produced estrogens are associated with a high prevalence rate of VTE. Almost all the eunuchs were taking HRT in a misinstructed manner without medical supervision and it is combined to produce more side effects. Further Kimble Sharon (2015) reported that transwomen who take estrogen replacement therapy is prone to develop hypertension, pituitary adenoma and gall bladder infections. Majority of the population deceased due to VTE and the death rate was significantly high among these groups. Madeline B. Deutsh., Vipra Bhakri., Katrina Kubicek (2015) performed a comparative study between transwomen and transmen in order to find out the effects of cross sex hormone treatment. The study finally concluded that the transwomen on estrogen replacement therapy suffer from low blood pressure; whereas in transmen, the testosterone therapy is linked with high BMI. But Klaver Maartje., Vlot Mariska., Dekker Marieke., Megens Jos., Heijer Den Martin (2015) conducted a prospective study to test the effectiveness of cross sex hormone treatment on body weight and fat percentage among transgenders. The study inferred that the body weight had significantly increased among transwomen and transmen. Above all, the study also proved that the transwomen showed a predictive increase in fat percentage when compared with transmen.

Besides, Rott Hannelore (2014) conducted a systematic review and reported that the bio-identical HRT may be highly recommended when compared with oral estrogen supplements. This is because the oral HRT is relatively linked to produce more vascular related complications among women and transgenders.

Horvei D. Lars (2014) & Farinelli. Allman Margaret (2011) led a comprehensive review related to obesity and DVT. The review substantiates that as the obesity increases, the prevalence of VTE is more common among adults aged over 45 years. On the other hand, Kloavite J., Benn M., Nordestgaard BG (2014) headed an observational study by using a mendelian randomization design to check out if obesity has a causative

link between DVT and PE among the general population. The findings reported that the possibility of DVT is more common among patients with high BMI values.

Majority of the researchers (Gooren J. Louis et.al, 2014; Bastos de Marcos., Stegeman H., Bernardine., Rosendaal R. Frans., Stijnen Theo., Dekkers Olaf 2014 & Sidney Stephen et.al, 2013) carried out a meta analysis by using a random effect model and suggested that the incidence of VTE is reportedly high among oral contraceptive users than the non users. For instance, majority of the MTF transsexuals who consumed Levonorgestrel are at high risk for thrombo-embolic disease in comparison with other combined oral contraceptives.

Michetti P. Christopher., Franco Elizabeth., Coleman Jonathan., Bradford Anna., Trickle W. Amber (2014) conducted a retrospective review in a acute rehabilitation centre from 2007-2011 among high risk trauma population and examined the risk factors for DVT. The study findings revealed that prolonged hospitalization, people aged above 65 years, fractured pelvis and delayed start of chemoprophylaxis constitutes a greater risk among injured patients. Moreover, the Institute Of Medicine (IOM) report stated that the elder eunuchs who were on continuous HRT were prone to develop more side effects and they are at greater risk for CVD and stroke.

Looringh Van Beeck. J., Versfeld. K., Ehrlich. R (2014) stated that prolonged kneeling along with tight knee pad usage is one of the triggering factor for developing DVT among workers who were working in yacht industry. Inorder to prevent this, the researchers provided an educational package exclusively to the workers and padded trousers were recommended as an optional measure for preventing various complications of VTE.

Pitkin Joan (2013) analyzed a review and reported that the duration of HRT should be delimited to a period of 5 years and physicians need to stop prescribing it from early fifties. As it produces a lot of side effects, it should not be recommended as a treatment of choice among female patients.

Then, Seal Lighton (2013) reported that transwomen who were on ethinyl estradiol had greater prevalence of VTE in comparison with other forms of estrogen

supplements whereas Wu Cq et.al, 2013 & European Society of Human Reproduction and Embryology (ESHRE) Capri Workshop Group, 2013 analyzed a systematic review and identified that there is high probability of VTE among individuals who consume oral contraceptives, which comprises of Drospirenone.

Reisner., Lloyd., Baral 2013; IOM 2013; UNDP 2010 propounds that alcohol consumption and substance use is relatively more common among hijras or eunuchs. Perhaps, the reason could be lack of family support and high level of discrimination faced by the eunuchs in the society. Few researchers (Parkhill L. Army., Gainsburg Jeanne., Fearing Scott., Mathews L. Jennifer 2011; Healthy People 2020 – Transgender Health Fact Sheet, 2010; Keller Kimberley 2009) implies that around 45-74% of the transsexuals were habituated with smoking and tobacco usage. A survey report, which covered a large number of study population in Virginia documented that the tobacco users were about 59% among transwomen and 75% in transmen respectively. Most of them were consuming tobacco in order to bring down their weight and it was found that smoking was one of the causative factors for developing DVT among transgenders.

Suadiciani Poul., Hannerz Harald., Bach Elsa., Gyntelberg Finn (2012) carried out a cohort based study to notice whether prolonged duration of sitting has an influence over DVT or PE among manual workers. This concluded that sitting for longer periods is associated with an increased risk for PE, nevertheless, the DVT risk is comparatively low among these workers.

Haan de Gene., Santos Milo Glenn., Arayasirikul Sean., Raymond F. Henry (2010) engaged in a descriptive study which mainly focused among transgenders who were on HRT without safety and proper supervision. The data demonstrated that around 68.7% of the MTF transsexuals were on HRT; out of which 49% of them were taking HRT without proper prescription.

#### **SECTION 2.3.4: CRITICAL REVIEWS RELATED TO PREVENTION OF DVT**

WRIGHT (2015) & Gavish Israel et.al, (2010) elucidated that prevention of air travel related VTE involves certain precautionary measures such as drinking more fluids to avoid dehydration, encouraging the clients to wear stockings so that it can reduce

venous stasis as well as change their position in between when travelling for longer periods.

Wade Rose et.al, (2015) & Sachdeva., Dalton., Amaragiri., Lee (2014) conducted a randomized controlled clinical trial study to assess the efficacy of graduated compression hosiery to reduce the risk of DVT among medical and surgical patients. The results proved that the graduated compression hosiery was effective in reducing DVT among those patients and the adverse effects related to its usage were reported very less.

Similarly Subbiah Rajeeve., Aggarwal Vikas., Bashir Riyaz (2015) carried out a randomized control study to find out the effectiveness of compression stockings to prevent venous stress disorder among patients who were diagnosed with DVT. The study findings reported that the compression stocking helps to prevent the long term complications of DVT among these patients.

Drobnic Franchek., Pineda Antoni., Escudero Roman Jose., Soria Manuel Jose., Souto Carles Joan (2015) conducted a review and reported certain effective measures for preventing VTE among professional athletes. The following preventive measures recommended were: regular fluid intake, elastic compression stockings, leg or calf muscle exercises, brisk walking for less than 5 minutes, approximately every one hour while travelling in train or stretching the ankles and feet when driving in car or travelling in flight along with smoking and alcohol cessation. Wang Zhe., Chen Qian., Ye Mao., Shi Hui Guang., Zhang Bo (2015) executed an experimental study to test the efficacy of active ankle movement among patients who had undergone orthopedic surgeries to prevent DVT. The study findings reported that this movement was highly effective in reducing swelling among these patients after surgery.

Multiple researchers (Keiter E. John., Johns Dana., Rockwell W. Bradford 2015; Oopikofer Claude 2015) emphasized that there are two important measures for reducing the possibility of DVT among patients after abdominoplasty and this includes lower limb elevation plus healthy hydration.

Pitto P. Rocco., Koh K. Chuan (2014) performed a prospective study to investigate the effectiveness of flowtron foot pumps for preventing VTE among patients

who had undergone hip and replacement surgeries. The findings concluded that flowtron pump was considered to be an effective and safe method for preventing DVT and PE in these patients.

Angral et.al, (2012) carried out a prospective study to find out the rational use of chemoprophylaxis among Indian patients for preventing DVT. The results proved that, as DVT and PE is not very high in India, there is lack of exact guidelines to support chemoprophylaxis. But the pharmacological therapy is highly recommended for the patients who are at high risk for VTE and for positive ultrasonography.

### **SECTION 2.3.5: CRITICAL REVIEWS RELATED TO STATIC STRETCHING EXERCISES**

Researchers (Sekir Ufek., Arabaci Ramiz., Akova Bedrettin 2015; Kay D. Anthony., Blazeovich J. Anthony 2012; Samson Michael., Button C. Duane., Chaouachi Anis, Behm G. David 2012; Behm G David et.al, 2011) carried out an experimental study to find out the intense effects of static stretching exercises among world class women athletes and furthermore to check out whether it has an impact over functional Hamstring/Quadriceps (H/Q) strength ratios. The findings reported that the static stretching exercises can be effectively practiced by the samples during their warm up phase in order to reduce the risk of injury and eventually it does not produce an effect on functional H/Q ratio.

A research crew (Nishiwaki Masato., Yonemura Haruka., Kurobe Kazumichi., Matsumoto Naoyuki 2015) analyzed a study to evaluate the effectiveness of static stretching exercises on arterial stiffness among middle-aged men. A sit and reach test was done to determine its flexibility and brachial-ankle pulse wave velocity as well as the cardio-ankle vascular index were checked to assess the arterial stiffness. The findings proved that four weeks of routine static stretching exercises produced a considerable decrease in arterial stiffness.

CH Chen., TC Chen., MH Jan., JJ Lin (2015) headed a randomized controlled clinical trial study to explore if a short duration of active static or dynamic hamstring stretching exercises would prevent muscle damage among young male students after a tough eccentric exercise. The study findings concluded that the active static stretching is

highly advised over dynamic stretching exercise because it aids in promoting muscle strength and hamstring range of motion. Eom Ho Jun., Chung Ho Sin., Shim Hun Jae (2014) conducted a comparative study between latrine users and squat position users to investigate the effectiveness of squat exercises to prevent DVT and measured the rate of blood flow in both the extremities by using a portable ultrasound machine. The findings revealed that the squat exercises had shown a significant effect among the squat position users, thereby enhancing the blood flow in the lower extremities, to prevent DVT.

Macklin. K., Healy. A., Chockalingam. N (2012) conducted a comparative study to assess the effectiveness of calf muscle stretching on ankle joint dorsi flexion and consequent changes that occurred within Peak Plantar Pressures (PPP), force and temporal parameters. The findings of the study proved that it was highly beneficial among patients with ankle joint equinus; this denotes that the training programme on calf muscle stretching had caused a tremendous improvement on ankle joint dorsiflexion. Nelson G. Arnold et.al, (2012) stated that 10 weeks of static stretching programme helps to improve the muscle strength among untrained individuals. Mahajan Richa., Kataria Chitra., Bansal Kshitija (2012) carried out a comparative study to appraise the efficacy of muscle energy technique and static stretching exercises for preventing mechanical neck pain. The study reported that the above mentioned technique and exercises are effective in reducing neck pain.

Phage Phil (2012) added a clinical review to deal with the latest concepts of stretching interventions and documented an outline related to stretching, because this was highly implemented in exercise as well as in rehabilitation therapy to avoid shoulder, back and neck pain.

Dimitrios Stasinopoulos., Pantelis Manias., Kalliopi Stasinopoulos (2010) used a controlled clinical trial design to rule out the effect of eccentric training and eccentric training along with static stretching exercises to prevent patellar tendinopathy. The level of pain and the functional status was evaluated using Victorian Institute of Sport Assessment scale (VISA) for about 4 weeks and the study findings concluded that both the exercises play an essential role in reducing the pain and improving the functional status among patients who are diagnosed with patellar tendinopathy.

## **SUMMARY**

During the process of literature review, the researcher found that umpteen studies were done to identify the incidence, prevalence, risk factors and for management of DVT and PE among general population. However, the eunuchs were not taken as samples in the study. Hence, the researcher wanted to bridge the gap between eunuchs and general population.

On the other hand, the researcher also felt very difficulty in gathering Indian literature reviews specifically related to prevention of DVT among eunuchs.

# *CHAPTER - 3*

*RESEARCH*

*METHODOLOGY*



## **RESEARCH METHODOLOGY**

Research methodology is the conceptual structure within which the research is conducted. It constitutes the blue print for the collection, measurement and analysis of data. It is the overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process.

This chapter deals with the methodology adopted for the study to assess the effectiveness of SCP on knowledge and skill regarding prevention of DVT among eunuchs at selected settings, Chennai.

This phase of the study includes selecting the research approach, design, variables, setting, population, sample, sample size, criteria for sample selection, sampling technique, development and description of the tool, content validity, ethical considerations, reliability of the tool, pilot study, data collection procedure and plan for data analysis.

### **3.1 RESEARCH APPROACH**

The research approach used in this study was quantitative research approach.

### **3.2 RESEARCH DESIGN**

The research design adopted for this study was quasi experimental non-equivalent control group pre test and post test design based on Polit and Hungler (2011). The investigator used this design due to non availability of adequate number of samples and to test the effectiveness of intervention among both the groups.

The research design adopted for the study is depicted below

Group	Pre test (O <sub>1</sub> )	Intervention (X) (On the same day)	Post test (O <sub>2</sub> ) (At the end of seventh day)	Reinforcement on prevention of Deep Vein Thrombosis through a pictorial brochure and communication via WhatsApp technology.
Experimental group	Assessment of the pre test level of knowledge using structured questionnaire	<p><b>Stop Clot Package (SCP)</b> on prevention of DVT , by educating 4-8 eunuchs in groups and it comprises of</p> <ol style="list-style-type: none"> <li>1. Lecture cum discussion with the aid of power point presentation</li> <li>2. Demonstration of static stretching exercises by the investigator</li> <li>3. Return demonstration of static stretching exercises by the eunuchs</li> </ol>	Assessment of the post test level of knowledge and skill using structured questionnaire and observational checklist respectively	
Control group		Routine activities of daily living ( such as reading books, chatting with friends and visiting association for group meetings)	<ul style="list-style-type: none"> <li>➤ Assessment of the post test level of knowledge using structured questionnaire</li> <li>➤ Executed SCP</li> </ul>	

### **3.3 VARIABLES**

#### **3.3.1 Independent Variable**

The independent variable is SCP regarding prevention of DVT.

#### **3.3.2 Dependent Variables**

The dependent variables are knowledge and skill regarding prevention of DVT among eunuchs.

#### **3.3.3 Extraneous Variables**

The extraneous variables are age in years, educational status, occupation, nature of activity, history of smoking, alcohol/tobacco use, duration of HRT and illness causing restriction of activity.

### **3.4 SETTING OF THE STUDY**

The main study research settings were Thozhi Association, Aminjikai, Chennai for the experimental group and Tamil Nadu Aravanigal Association (THAA), Saidapet, Chennai for the control group.

Thozhi – a welfare organization for transgender women

- A total of 1375 members are registered in this association
- Offers guidance and counselling over phone and internet
- Offers services like “drop in centre” from 11 am to 6 pm (i.e. from Monday to Friday)
- On a regular basis, the eunuchs are manned by an outreach team
- Advocacy is carried out at various levels.

Thamil Nadu Aravanigal Association (THAA) – Registered under the Society Act, 1975 of Tamil Nadu

- Totally governed by Aravanis and 300-350 members are registered in this association
- Networking with other NGOs and CBOs
- Conducts prevention campaign and services for 3000 members on STD, HIV/AIDS
- Counselling services are provided for the HIV clients and fights for the issues pertaining to human rights.
- Creates self employment opportunities for Aravanis.

### **3.5 POPULATION**

#### **3.5.1 Target population**

All the eunuchs who were on HRT for more than 1 year.

#### **3.5.2 Accessible population**

All eunuchs who met inclusion criteria and were members of Thozhi and THAA Association. A total of 1375 members were registered in the Thozhi Association and approximately 300-350 members were registered in THAA; out of this around 500-650 eunuchs were on HRT in both the association.

### **3.6 SAMPLE**

The eunuchs who fulfilled the inclusion criteria were the samples for this study.

### **3.7 SAMPLE SIZE**

The sample size for this study comprised of 60 eunuchs who fulfilled the inclusion criteria (with 30 each in experimental and control group)

### **3.8 CRITERIA FOR SAMPLE SELECTION**

#### **3.8.1 Inclusion Criterias'**

Eunuchs

- who were on HRT > 1 year
- who were aged between 21- 60 years
- who had undergone SRS
- who had undergone complete transition from MTF
- who were willing to participate in the study
- who could read and speak Tamil/English

#### **3.8.2 Exclusion Criterias'**

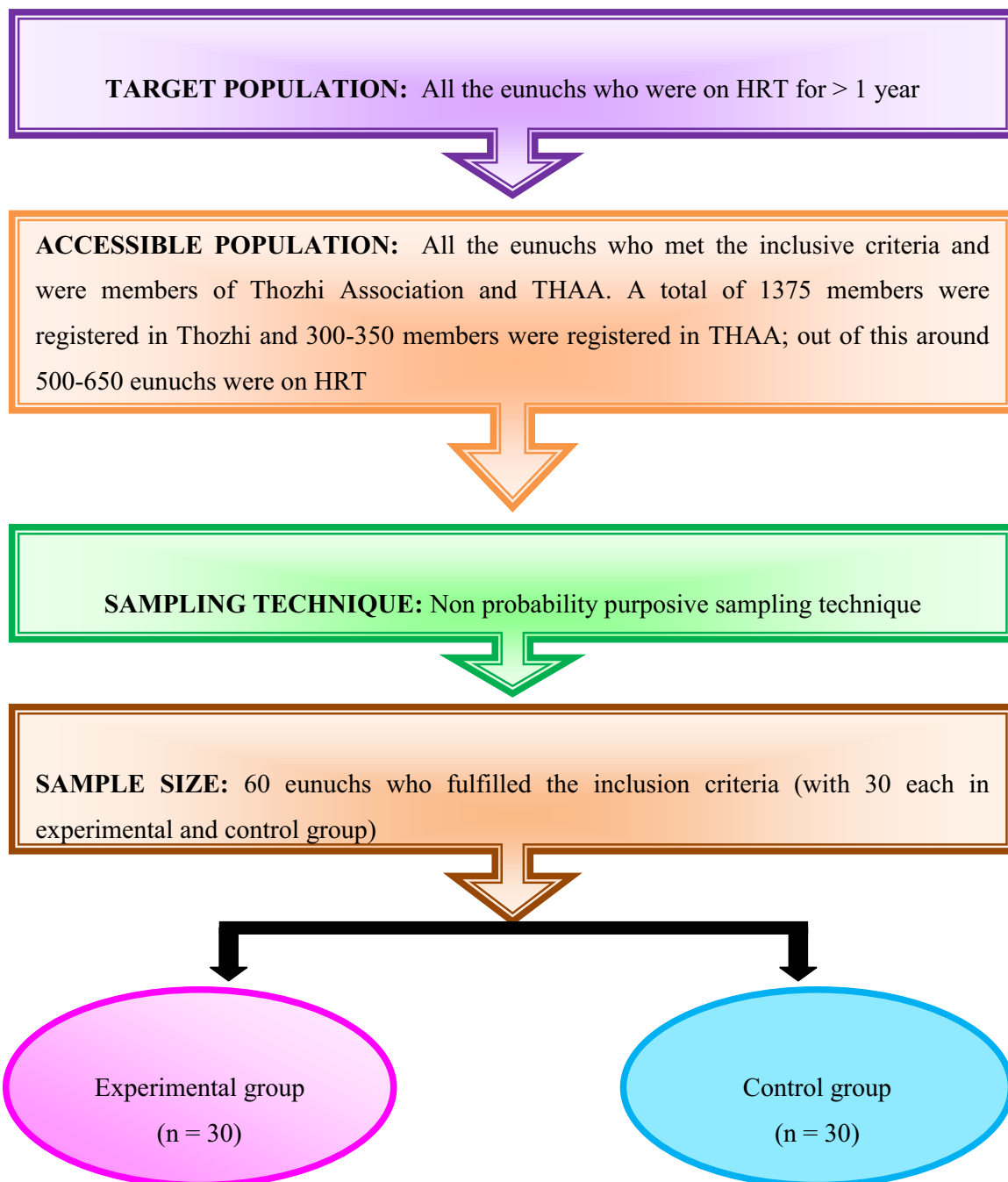
Eunuchs

- who were already diagnosed with DVT
- who had already undergone any awareness programme on prevention of DVT within 6 months prior to the study period
- who were diagnosed to have medical conditions like Diabetes, CVD
- who were unable to perform exercises or physically challenged with severe visual or auditory impairment

### **3.9 SAMPLING TECHNIQUE**

Non probability purposive sampling technique was used by taking 4 to 8 samples per day based on availability.

**Figure 3.9.1 SCHEMATIC REPRESENTATION FOR SAMPLING**



### 3.10 DEVELOPMENT AND DESCRIPTION OF TOOL

After an extensive review of literature and discussion with the experts in the field of medical surgical nursing, the investigator developed a DVT assessment checklist based on Well's score criteria to rule out the probability for DVT, a structured questionnaire to assess the level of knowledge and observational checklist to assess the level of skill among eunuchs.

The tool constructed in this study has two parts:

**PART-A: DATA COLLECTION TOOL**

**PART-B: INTERVENTION TOOL**

#### 3.10.1 PART A: DATA COLLECTION TOOL

This part consists of 4 sections

**Section A: DVT assessment checklist**

**Section B: Demographic data**

**Section C: Structured knowledge questionnaire**

**Section D: Observational checklist**

##### **Section A: DVT assessment checklist**

This section consisted of 10 questions (yes/no type) that assessed the probability for DVT.

##### **Scoring key:**

Each “yes” was awarded a score of ‘1’ and each “no” was awarded ‘0’. The overall and the maximum score is 10 and minimum score is 0. The raw data was computed to interpret the probability of DVT.

##### **Interpretation of DVT assessment checklist**

<b>Score</b>	<b>Inference – Probability for DVT</b>
> 3	High probability
1 or 2	Moderate probability
0	Low probability

## Section B: Demographic data

This section consisted of

- Demographic variables: Age in years, educational status, occupation, nature of activity, eunuch's family month income ( in rupees) and eunuch's family size (no. of persons)
- Lifestyle variables: Diet pattern, smoking/tobacco use, alcohol use and drug abuse
- Personal variables: Types of HRT and HRT users in eunuch's family
- Anthropometric measurement: Height (in cm), weight (in kg) and BMI in (kg/m<sup>2</sup>)

## Section C: Structured knowledge questionnaire

This section consisted of structured knowledge questionnaire to assess the level of knowledge regarding prevention of DVT among eunuchs. It consisted of 25 questions formulated under separate subheadings like general information on DVT, causes and risk factors, management and preventive measures. Each question ended with multiple choices. Eunuchs were asked to select the best answer from the four options given.

S.No	Content	No. of questions
1.	General information on DVT	5
2.	Causes and risk factors	4
3.	Management	5
4.	Preventive measures	11
	<b>TOTAL</b>	<b>25</b>

### Scoring key:

Each correct answer was given '1' mark; whereas, wrong answers and unattended question was given '0' mark. The raw score was converted to percentage to interpret the level of knowledge, the overall score was 25, maximum score is 25 and minimum score is 0.

### Interpretation level of knowledge

The level of knowledge was categorized as;

Score	Level of knowledge
≤50%	Inadequate level of knowledge
51-75%	Moderate level of knowledge
>75%	Adequate level of knowledge



#### **Section D: Observational checklist**

This section consisted of an observational checklist to assess the post test level of skill regarding prevention of DVT among eunuchs which was formulated by the investigator.

<b>S.No</b>	<b>Items</b>	<b>No. of questions</b>
1.	Towel stretch	3
2.	Standing calf stretch	3
3.	Resisted ankle plantar flexion	3
4.	Heel raise	3
5.	Mini squat	3
	<b>TOTAL</b>	<b>15</b>

#### **Scoring key:**

The items were rated as '1' when it was performed correctly and '0' for not performing it appropriately. The raw score was converted to percentage to interpret level of practice, the overall score is 15, maximum score is 15 and minimum score is 0.

#### **Interpretation level of skill**

The overall score percentage was categorized as

<b>Score</b>	<b>Level of skill</b>
≤50%	Needs improvement in skill
51-75%	Fair skill
>75%	Good skill

#### **3.10.1 PART B: INTERVENTION TOOL**

The intervention tool prepared by the investigator is SCP. It refers to the interventions, developed by the investigator, aimed at prevention of DVT, by educating 4-8 eunuchs in groups. It comprises of

- lecture cum discussion on definition, causes, risk factors, pathophysiology, clinical manifestations, diagnostic evaluation, treatment, possible complications and preventive measures including static stretching exercises with the aid of power point presentation for 30 minutes.

- demonstration of static stretching exercises by the investigator, which includes towel stretch, standing calf stretch, resisted ankle plantar flexion, heel raise and mini squat for legs and calf muscle for 15-30 seconds..
- return demonstration of the static stretching exercises by the eunuchs.
- the clients were instructed to repeat each exercise 3-5 minutes, thrice daily which was appraised based on the observational checklist
- the total duration of the intervention was about 30-45 minutes.

### **3.11 CONTENT VALIDITY**

The content validity of the data collection tool and intervention tool was ascertained with the expert's opinion in the following field of expertise;

- ❖ Cardio-Thoracic & Vascular Surgeons (CTVS) – 4
- ❖ MSN experts – 3
- ❖ No Harm Certificate – 2
- ❖ Physiotherapist – 1

Experts suggested to add more questions on the demographic variables and prevention. All the experts had their consensus and then the tool was finalized.

### **3.12 ETHICAL CONSIDERATION**

Ethics is a system of moral values that is concerned with the degree to which the research procedures adheres to the professional, legal and social obligations to the study participants, Polit and Hungler (2012).

The study was approved by **Institutional Ethical Review Board (IERB)** held on December 2014 by **International Centre for Collaborative Research (ICCR) Committee**, Omayal Achi College of Nursing, Chennai.

The ethical principles followed in the study were,

#### **1) BENEFICIENCE AND NON-MALEFFICIENCE**

The researcher followed the fundamental ethical principle of beneficence which includes the right to freedom from harm and discomfort and right to protection from exploitation.

**a) The right to freedom from harm and discomfort**

The study was beneficial for the samples as it enhanced their knowledge regarding prevention of DVT and skill on static stretching exercises. No harm certificate was obtained from the Consultant Physiotherapist for static stretching exercises and safe environment was provided for the samples to re-demonstrate the static stretching exercises.

**b) The right to protection from exploitation**

The researcher explained the nature of the study to the samples and ensured that none of the samples were exploited or denied. Prior to static stretching exercises, the investigator made it clear that if the eunuchs were not willing/not satisfied, they can refrain from doing the exercises and were instructed to meet the physician.

**2) RESPECT FOR HUMAN DIGNITY**

The researcher followed the second ethical principle of respect for human dignity. It includes the right to self determination and right to full disclosure

**a) The right to self determination**

The researcher gave full freedom to the participants to decide voluntarily whether to participate in the study or to withdraw from the study at any point of time and the right to ask questions.

**b) The right to full disclosure**

The researcher had fully described the nature of the study, its purpose and steps involved; based on this oral and written informed consent was obtained from the samples.

**3) JUSTICE**

The researcher adhered to the third ethical principle of justice; it includes participant's right to fair treatment and right to privacy.

**a) The right to fair treatment**

The researcher selected the samples based on research requirements. Immediately after the completion of post test, SCP was executed to the control group. Reinforcement on prevention of DVT was given through a pictorial brochure and communication was maintained via WhatsApp for both the groups.

**c) The right to privacy**

The eunuchs were gathered in a separate room, the researcher collected the data individually from each samples and maintained privacy throughout the study by not revealing the score of the samples.

**4) CONFIDENTIALITY**

The researcher maintained confidentiality by assigning the eunuchs with an identification number and the collected data was not disclosed through WhatsApp.

**3.13 RELIABILITY OF THE TOOL**

VARIABLES	TOOL	METHOD	VALUE	INFERENCE
Knowledge	Structured knowledge questionnaire	Test re- test	'r'= 0.91	Highly reliable
Skill	Observational checklist	Inter-rater	'r'= 0.80	Highly reliable

The above table shows that the tool was considered highly reliable for proceeding in the main study.

**3.14 PILOT STUDY**

The pilot study is a trial study carried out before a research design is finalized to assist in defining the research question or to test the feasibility, reliability and validity of the proposed study design.

The pilot study was conducted at Transgender Rights Association (TRA), Perambur, Chennai and Sahodaran-2 Association (Snehidhi), Washermenpet, Chennai. After obtaining ethical committee clearance from ICCR, a formal written permission was sought from the Principal, Omayal Achi College of Nursing and Founder and Managing Trustee of TRA and Director of Sahodaran -2 Association (Snehidhi). The pilot study was conducted in the month of May from 23/5/15 to 30/5/15.

The setting for the experimental group was TRA in which 300 eunuchs were registered, out of which 150-200 eunuchs were on HRT. A total of 5 samples who

fulfilled the inclusion criteria were selected as samples using non probability purposive sampling technique. A concise explanation was given regarding the purpose of the study and written consent was obtained from the samples.

The setting for the control group was Sahodaran-2 Association (Snehidhi) in which 100 -150 eunuchs were registered, out of which 60-70 eunuchs were on HRT. A total of 5 samples who fulfilled the inclusion criteria were selected as samples using non probability purposive sampling technique. The data collection procedure was started by conducting an interview method, where the self introduction was given by the researcher and a concise explanation was given regarding the purpose of the study to the respective samples. Also, a written consent was obtained.

On the first day, the eunuchs in the experimental group were seated comfortably in a conducive room and the DVT assessment was done to rule out the probability for DVT. Then, the demographic details were collected and investigator assessed each eunuchs regarding pre test level of knowledge on prevention of DVT, using a structured knowledge questionnaire. Following which the investigator executed the SCP to prevent DVT and it comprised of lecture cum discussion with the aid of power point presentation for 30 minutes, along with demonstration of each static stretching exercises and the return demonstration was performed by the eunuchs. They were instructed to perform each static stretching exercises for about 3-5 minutes, thrice daily as trained by the investigator and the total duration of the intervention was about 45 minutes. On 24.05.15, the eunuchs in the control group underwent DVT assessment. Then, the demographic data and pre test level of knowledge on prevention of DVT was also assessed and they followed routine activities of daily living.

At the end of seventh day, for the experimental group the post test level of knowledge and skill was assessed using same questionnaire and observational checklist; while for the control group, only the post test level of knowledge was assessed using same questionnaire.

Immediately, after the completion of post test, the SCP was executed to the control group and reinforcement on prevention of DVT was given through a pictorial brochure for both the groups.

The analysis of the pilot study revealed that the calculated paired 't' value for the pre and post test level of knowledge was  $t = 3.17$  among the experimental group indicating a mild statistical significance at  $p < 0.05$  level; whereas in the control group the calculated paired 't' value was  $t = 0.55$ , showed no statistical significance. The comparison of post test level of knowledge between the experimental and control group indicated a calculated unpaired 't' value of  $t = 6.27$ , statistically very highly significant at  $p < 0.001$  level. The correlation of post test level of knowledge with skill score among the experimental group showed that 'r' value of  $r = 0.55$ , indicates a moderate positive correlation. The results suggest that the knowledge regarding prevention of DVT also has a positive impact in enhancing skill among eunuchs.

The results of pilot study revealed that the assessment and intervention tool was reliable, feasible and practicable to conduct the main study. The following suggestion was given by the experts in the field of medical surgical nursing -

- concentrate more on preventive aspect of DVT.
- obtain No Harm Certificate from the Vascular surgeon.
- eligibility certificate from the Physiotherapist to train static stretching exercises for eunuchs.

### **3.15 DATA COLLECTION PROCEDURE**

The main study was conducted after obtaining formal permission from the Principal and Research Director, ICCR, Omayal Achi College of Nursing; Project Director of Thozhi Association, Aminjikarai, Chennai and Programme Manager of THAA, Saidapet, Chennai. The study was conducted for over a period of 4 weeks in the month of June 2015. The investigator selected the experimental group from Thozhi Association and control group from THAA. A total of 60 samples (with 30 each in experimental and control group) who fulfilled the inclusion criteria were selected as samples using non probability purposive sampling technique. On the first day, the investigator met the experimental group samples, they were seated comfortably in a conference hall, gave a brief self introduction and concise explanation was given regarding the purpose of the study. Then, a verbal and written consent was obtained. A strict confidentiality was maintained throughout the data collection process.

At the initial phase, a DVT assessment was done to rule out the probability for DVT and then the demographic variables were collected from the eunuchs. Followed by that, the investigator assessed each eunuchs regarding pre test level of knowledge on prevention of DVT, using a structured questionnaire. Almost it took around 20 minutes for each sample. Once the pre test had been completed, their name and address were removed immediately from the survey sheets in order to maintain confidentiality.

Soon after that process, on the same day, the investigator executed the SCP by educating 4-8 eunuchs in groups. It comprised of lecture cum discussion for 30 minutes on DVT and explained about the definition, causes, risk factors, pathophysiology, clinical manifestations, diagnostic evaluation, treatment, possible complications and preventive measures including the static stretching exercises. Along with this, a live demonstration was done by the investigator on static stretching exercises which includes towel stretch, standing calf stretch, resisted ankle plantar flexion, heel raise and mini squat and the return demonstration was done by the eunuchs. Then, the eunuchs were instructed to repeat each exercises for about 3-5 minutes, thrice daily and it took around 45 minutes to complete the whole session for the experimental group. The same sequence was repeated for the control group, but SCP was not executed instead they carried out their routine activities of daily living.

On the seventh day, the post test level of knowledge and skill was assessed using structured knowledge questionnaire and observational checklist for the experimental group; while for the control group only the post test level of knowledge was assessed using structured knowledge questionnaire. After the completion of post test, on the same day SCP was executed to the control group.

Similarly, the eunuchs from both the groups were reinforced with the help of a pictorial brochure and an ongoing communication was maintained via WhatsApp technology. All the ethical principles were adhered throughout the course of study.

### **3.16 PLAN FOR DATA ANALYSIS**

The data was analyzed by using descriptive and inferential statistics.

#### **3.16.1 Descriptive statistics**

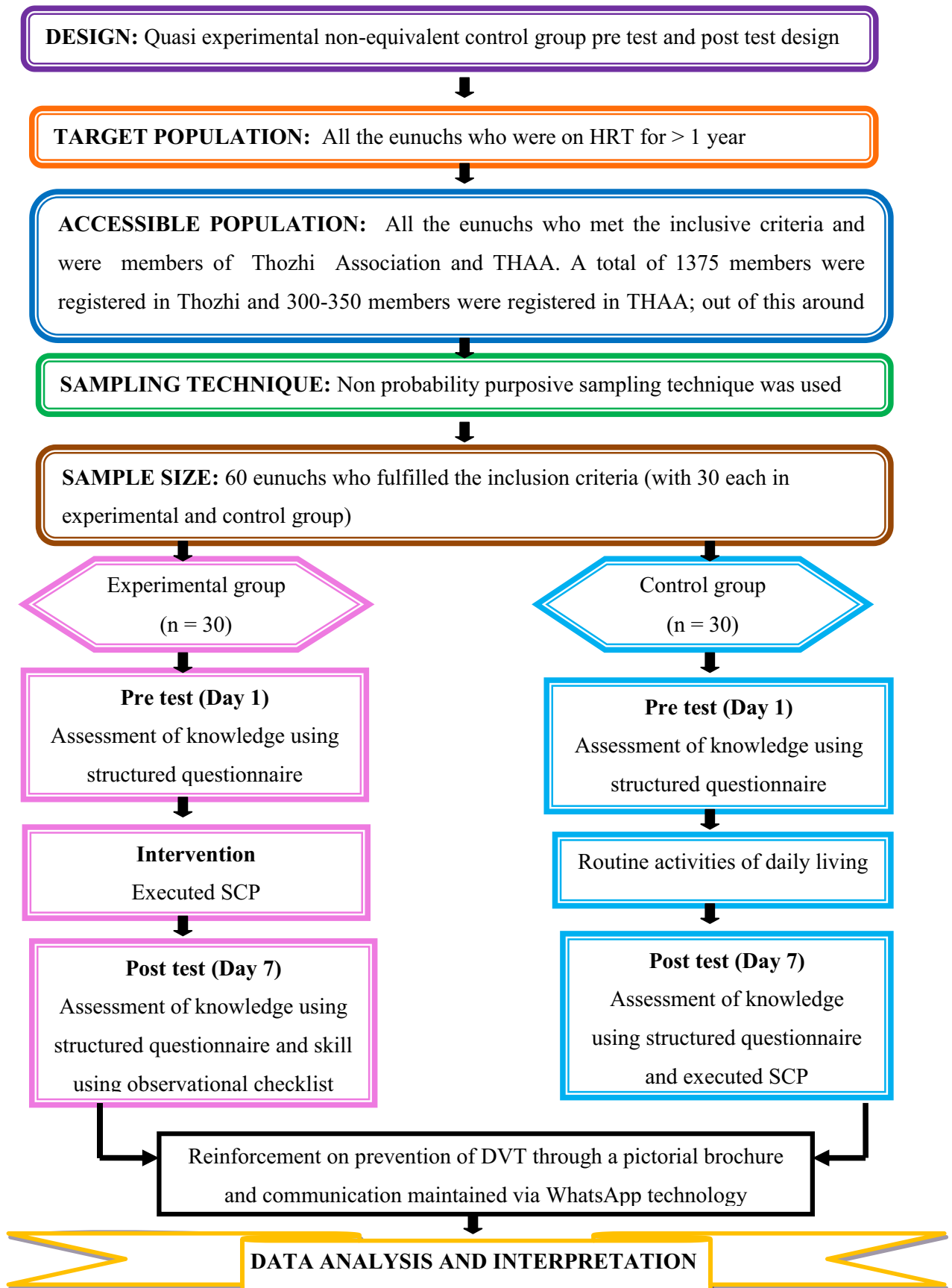
1. Frequency and percentage distribution to analyze the demographic variables
2. Mean and standard deviation to assess the level of knowledge and skill in the experimental group.

#### **3.16.2 Inferential statistics**

1. Paired 't' test and unpaired 't' test to compare the data between the experimental and control group.
2. Karl Pearson correlation co-efficient to find the relationship between the post test level of knowledge with skill in the experimental group
3. One way ANOVA to associate the selected demographic variables with pre and post test mean score of knowledge and post test skill on SCP regarding prevention of DVT in the experimental group.



**Figure 3.1 SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY**



*CHAPTER - 4*  
*DATA ANALYSIS*  
*AND*  
*INTERPRETATION*

## **DATA ANALYSIS AND INTERPRETATION**

The word Analysis refers to the process of organizing and synthesizing the data in such a way that the research question can be answered and hypotheses tested. Polit and Hungler, (2011).

This chapter deals with analysis and interpretation of data to assess the effectiveness of SCP on knowledge and skill regarding prevention of DVT among eunuchs at selected settings, Chennai. The data was organized, tabulated and analyzed according to the objectives and findings based on descriptive and inferential statistical analysis were presented under the following sections.

### **ORGANIZATION OF DATA**

**Section 4.1:** Description of demographic variables of eunuchs in the experimental and control group

**Section 4.2:** Assessment and comparison of the pre and post test level of knowledge regarding prevention of DVT among the experimental and control group

**Section 4.3:** Comparison of pre and post test level of knowledge regarding prevention of DVT between the experimental and control group

**Section 4.4:** Assessment of the post test level of skill regarding prevention of DVT in the experimental group

**Section 4.5:** Correlation of the post test level of knowledge with skill regarding prevention of DVT in the experimental group

**Section 4.6:** Association of the selected demographic variables with pre and post test mean score of knowledge and post test skill on SCP regarding prevention of DVT in the experimental group.

**SECTION 4.1: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF EUNCUHS IN THE EXPERIMENTAL AND CONTROL GROUP**

**Table 4.1.1: Frequency and percentage distribution of demographic variables with respect to age in years, educational status and occupation in the experimental and control group.**

**N=60**

S.No	Demographic variables	Group			
		Experimental (n=30)		Control (n=30)	
		n	%	n	%
<b>1.</b>	<b>Age in years</b>				
	21-30	26	86.7	24	80.0
	31-40	4	13.3	6	20.0
	41-50	-	-	-	-
	51-60	-	-	-	-
<b>2.</b>	<b>Educational status</b>				
	Non-literate			1	3.3
	Primary school certificate	-	-	-	-
	Middle school certificate	9	30.0	7	23.3
	Higher school certificate	8	26.7	13	43.3
	Intermediate or post high school diploma	6	20.0	5	16.7
	Graduate or postgraduate	7	23.3	3	10.0
	Profession or Honors	-	-	1	3.3
<b>3.</b>	<b>Occupation</b>				
	Unemployed	11	36.7	11	36.7
	Unskilled worker	11	36.7	12	40.0
	Semi-skilled worker	5	16.7	3	10.0
	Skilled worker	2	6.7	2	6.7
	Clerical, shop owner	-	-	-	-
	Semi-profession	1	3.3	-	-
	Profession	-	-	2	6.7

The above table signifies that majority of the eunuchs belonged to the age group of 21-30 years with middle school certificate in the experimental group and higher school certificate in the control group. With regard to occupational status, most of the samples were in the unemployed category in the experimental group; whereas in the control group, most of them were in the unskilled category.

**Table 4.1.2: Frequency and percentage distribution of demographic variables with respect to nature of activity, eunuch's family monthly income (in rupees) and eunuch's family size (no. of persons) in the experimental and control group**

**N = 60**

S.No	Demographic variables	Group			
		Experimental (n=30)		Control (n=30)	
		n	%	n	%
<b>4.</b>	<b>Nature of activity</b>				
	Prolonged standing (>8-10hrs/day)	16	53.3	17	56.7
	Prolonged sitting (>8-10hrs/day)	14	46.7	13	43.3
	Long distance travel (> 14 hrs/day)	-	-	-	-
<b>5.</b>	<b>Eunuch's family monthly income ( in rupees)</b>				
	≤1802	-	-	-	-
	1803-5386	4	13.3	1	3.3
	5387-8988	14	46.7	15	50.0
	8989-13494	10	33.3	13	43.3
	13495-17999	1	3.3	1	3.3
	18000-36016	1	3.3	-	-
	≥36017	-	-	-	-
<b>6.</b>	<b>Eunuch's family size ( no. of persons)</b>				
	1	3	10.0	4	13.3
	1-2	10	33.3	12	40.0
	3-4	14	46.7	9	30.0
	5-6	3	10.0	5	16.7
	>6	-	-	-	-

The above table depicts that almost all the samples were standing for a prolonged duration of more than 8-10 hrs/day and their family income was Rs.5387-8988 per month among both the groups. In addition to this, majority of the eunuchs were in the family size of 3-4 in the experimental group and 1-2 in the control group.

**Table 4.1.3: Frequency and percentage distribution of lifestyle variables with respect to diet pattern and type of food and frequency of food intake (no. of days/ week) in the experimental and control group.**

**N = 60**

S.No	Lifestyle variables	Group			
		Experimental (n=30)		Control (n=30)	
		n	%	n	%
<b>7.</b>	<b>Diet pattern</b>				
	Lacto-vegetarian	3	10.0	2	6.7
	Lacto-ova vegetarian	5	16.7	-	-
	Non- vegetarian	22	73.3	28	93.3
<b>8.</b>	<b>Type of food and frequency of food intake ( no. of days/ week)</b>				
	<b>Junk foods</b>				
	Nil	13	43.3	11	36.7
	1-2	9	30.0	13	43.3
	3-4	8	26.7	6	20.3
	5-6	-	-	-	-
	daily	-	-	-	-
	<b>Deep fried items</b>				
	Nil	4	13.3	4	13.3
	1-2	11	36.7	9	30.0
	3-4	14	46.7	10	33.3
	5-6	1	3.3	2	6.7
	daily	-	-	5	16.7
	<b>Meat and poultry products</b>				
	Nil	3	10.0	-	-
	1-2	14	46.7	17	56.7
	3-4	10	33.3	7	23.3
	5-6	2	6.7	3	10.0
	daily	1	3.3	3	10.0

The above table denotes that approximately all the samples consumed non vegetarian among both the groups. With regard to type of food and frequency of food intake majority in the experimental group were not taking junk foods, takes fried items 3-4 times and meat and poultry products once or twice a week. While majority of samples in the control group took junk foods once or twice a day, deep fried items 3-4 times and meat and poultry products once or twice a week.

**Table 4.1.4: Frequency and percentage lifestyle variables with respect to smoking/ tobacco use, alcohol use, type of drinking and drug abuse in the experimental and control group.** N = 60

S.No	Lifestyle variables	Group			
		Experimental (n=30)		Control (n=30)	
		n	%	n	%
<b>9.</b>	<b>Any personal habits</b>				
	<b>Smoking/tobacco use</b>				
	Yes	23	76.7	20	66.7
	No	7	23.3	10	33.3
	<b>If 'yes', specify the no. of packs/day</b>				
	< 3	22	73.3	18	60.0
	4-6	1	3.3	2	6.7
	7-9	-	-	-	-
	≥ 10	-	-	-	-
	5-6	-	-	-	-
	daily	-	-	-	-
	<b>Alcohol use</b>				
	Yes	16	53.3	18	60.0
	No	14	46.7	12	40.0
	<b>If 'yes', quantity (in ml)</b>				
	<100 ml	1	3.3	-	-
	100-150 ml	10	33.3	9	30.0
	151-200 ml	4	13.3	9	30.0
	>200ml	1	3.3	-	-
	<b>Frequency ( days/week)</b>				
	1-2	1	3.3	18	60.0
	3-4	10	33.3	-	-
	5-6	4	13.3	-	-
	daily	1	3.3	-	-
	<b>Type of drinking</b>				
	Non-drinker	14	46.7	12	40.0
	Social drinker	13	43.3	18	60.0
	Daily drinker	3	10.0	-	-
	Binge drinker	-	-	-	-
	Addicted drinker	-	-	-	-
	<b>Drug abuse</b>				
	Yes	-	-	-	-
	No	-	-	-	-

The above table points out that majority of the eunuchs had the habit of consuming tobacco less than 3 packs/day along with alcohol consumption among both the groups. Apart from this, in the control group more than half of the samples were social drinkers whereas in the experimental group most of them were non drinkers.

**Table 4.1.5: Frequency and percentage distribution of personal variables with respect to types of HRT and HRT users in eunuch's family in the experimental and control group.**

N=60

S.No	Personal variables	Group			
		Experimental (n=30)		Control (n=30)	
		n	%	n	%
<b>10.</b>	<b>Types of HRT</b>				
	Estrogen only	20	66.7	24	80.0
	Progesterone only	-	-	-	-
	Cyclical (estrogen followed by progesterone or vice versa)	-	-	-	-
	Continuous combined (both estrogen and progesterone)	10	33.3	6	20.0
	<b>Dose ( in mg)</b>				
	1	12	40.0	11	36.7
	2	18	60.0	19	63.3
	3	-	-	-	-
	>3	-	-	-	-
	<b>Frequency</b>				
	once a day	14	46.7	17	56.7
	twice a day	16	53.3	13	43.3
	thrice a day	-	-	-	-
	<b>Duration ( in years)</b>				
	1-2	5	16.7	9	30.0
	3-4	18	60.0	19	63.3
	5-6	7	23.3	2	6.7
	>6	-	-	-	-
<b>11.</b>	<b>HRT users in eunuch's family (no. of persons)</b>				
	None	12	40.0	13	43.3
	1-2	12	40.0	13	43.3
	3-4	6	20.0	4	13.3
	5-6	-	-	-	-
	Daily	-	-	-	-

The above table shows that almost all the samples were taking estrogen only therapy around 2mg, once or twice a day over a period of 3 - 4 years in both the groups. With regard to no. of family members who were on HRT, either 1-2 members or none of them were taking HRT among the experimental and control group.



**Table 4.1.6: Frequency and percentage distribution of anthropometric variables with respect to height (in cm), weight (in kg) and Body Mass Index (in kg/m<sup>2</sup>) in the experimental and control group.**

**N = 60**

S.No	Anthropometric variables	Group			
		Experimental (n=30)		Control (n=30)	
		n	%	n	%
<b>12.</b>	<b>Height (in cm)</b>				
	150-155	5	16.7	4	13.3
	156-160	14	46.7	19	63.3
	161-165	11	36.7	7	23.3
<b>13.</b>	<b>Weight ( in kg)</b>				
	<50	1	3.3	1	3.3
	51-60	1	3.3	-	-
	61-70	8	26.7	7	23.3
	71-80	15	50.0	14	46.7
	81-90	2	6.7	2	6.7
	>90	3	10.0	6	20.0
<b>14.</b>	<b>BMI (in kg/m<sup>2</sup>)</b>				
	<18.5	1	3.3	1	3.3
	18.5-24.9	1	3.3	-	-
	25-29.9	16	53.3	5	16.7
	>30 or greater	12	40.0	24	80.0

With regard to height and weight, more than half of the eunuchs among both the groups, had a height of 156-160 cm and weight of 71-80 kg and with respect to BMI, half of the eunuchs were between 25-29.9 kg/m<sup>2</sup> in the experimental group; whereas in the control group, majority of eunuchs fell into the category of obesity.

**SECTION 4.2: ASSESSMENT AND COMPARISON OF THE PRE AND POST TEST LEVEL OF KNOWLEDGE REGARDING PREVENTION OF DVT AMONG THE EXPERIMENTAL AND CONTROL GROUP**

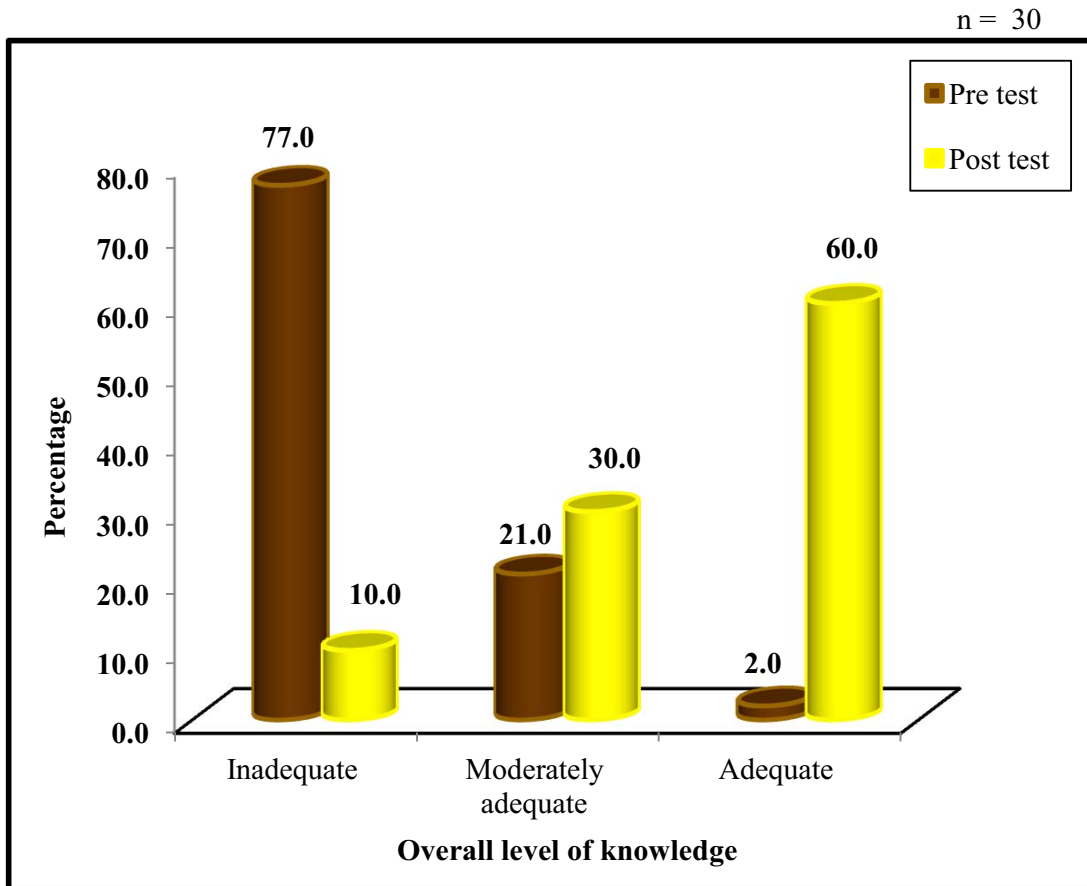
**Table 4.2.1: Frequency and percentage distribution of pre and post test level of knowledge regarding prevention of DVT in the experimental group.**

n = 30

Experimental group	Inadequate (≤50%)				Moderately adequate (51-75%)				Adequate (>75%)			
	Pre test		Post test		Pre test		Post test		Pre test		Post test	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
General information on DVT	23	77	4	13	5	17	3	10	2	6	23	77
Causes and risk factors	21	70	4	13.3	9	30	13	43.3	0	0	13	43.3
Management	24	80	2	7	5	17	6	20	1	3	22	73
Preventive measures	24	80	2	7	6	20	14	47	0	0	14	46
<b>Overall score</b>	<b>23</b>	<b>77</b>	<b>3</b>	<b>10</b>	<b>6</b>	<b>21</b>	<b>9</b>	<b>30</b>	<b>1</b>	<b>2</b>	<b>18</b>	<b>60</b>

The above table denotes the frequency and percentage distribution of pre and post test level of knowledge regarding prevention of DVT in the experimental group. This clearly indicates that in the pre test, most of the eunuchs had inadequate knowledge regarding prevention of DVT; whereas in the post test, majority of the eunuchs had adequate knowledge regarding prevention of DVT.

The result insinuates that the SCP was effective in improving the knowledge regarding prevention of DVT in the experimental group.



**Figure 4.2.1: Percentage distribution of overall pre and post test level of knowledge regarding prevention of DVT in the experimental group.**

The above figure reveals the overall pre and post test level of knowledge regarding prevention of DVT in the experimental group.

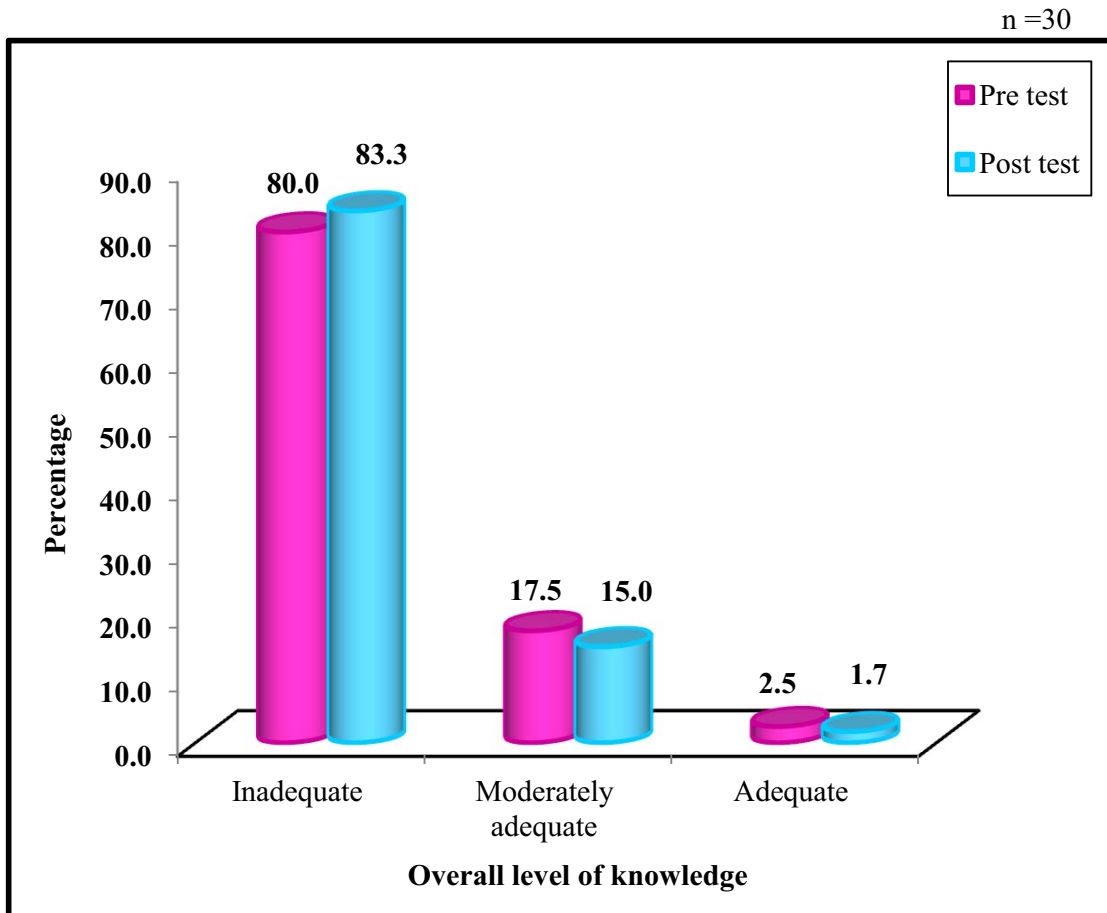
**Table 4.2.2: Frequency and percentage distribution of pre and post test level of knowledge regarding prevention of DVT in the control group.**

n = 30

Control group	Inadequate (≤50%)				Moderately adequate (51-75%)				Adequate (>75%)			
	Pre test		Post test		Pre test		Post test		Pre test		Post test	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
General information on DVT	24	80	26	86.7	5	17	4	13.3	1	3	0	0
Causes and risk factors	22	73	25	83.3	6	20	5	16.7	2	7	0	0
Management	24	80	25	83.3	6	20	3	10	0	0	2	6.7
Preventive measures	26	86.6	24	80	4	13.3	6	20	0	0	0	0
<b>Overall score</b>	<b>24</b>	<b>80</b>	<b>25</b>	<b>83.3</b>	<b>5</b>	<b>17.5</b>	<b>4</b>	<b>15</b>	<b>1</b>	<b>2.5</b>	<b>1</b>	<b>1.7</b>

The above table depicts the frequency and percentage distribution of pre and post test level of knowledge regarding prevention of DVT in the control group. This clearly demonstrates that in the pre and post test, majority of the eunuchs had inadequate knowledge regarding prevention of DVT.

The result signifies that with routine activities of daily living alone, there is no increase in the level of knowledge regarding prevention of DVT in the control group.



**Figure 4.2.2: Percentage distribution of overall pre and post test level of knowledge regarding prevention of DVT in the control group.**

The above figure reveals the overall pre and post test level of knowledge regarding prevention of DVT in the control group.

**Table 4.2.3: Comparison of the pre and post test level of knowledge regarding prevention of DVT among the experimental and control group.**

**N = 60**

Level of knowledge	Pre test		Post test		Paired 't' value
	Mean	S.D	Mean	S.D	
<b>Experimental group</b>	9.33	3.66	19.43	2.45	<b>t = -14.84<sup>***</sup> p = 0.001,S</b>
<b>Control group</b>	8.40	2.90	8.20	2.78	<b>t = 0.20 N.S</b>

<sup>\*\*\*</sup>p<0.001, S –Very highly significant; N.S – Not significant

The above table reveals the comparison of pre and post test knowledge scores regarding prevention of DVT in the experimental and control group.

In the experimental group, the calculated paired 't' value of t = -14.84, statistically showed very high significance at p<0.001 indicating the effectiveness of SCP in enhancing their knowledge; whereas in the control group, it showed a non-significant paired 't' value.

**SECTION 4.3: COMPARISON OF PRE AND POST TEST LEVEL OF KNOWLEDGE REGARDING PREVENTION OF DVT BETWEEN THE EXPERIMENTAL AND CONTROL GROUP**

**Table 4.3.1: Comparison of pre and post test level of knowledge regarding prevention of DVT between the experimental and control group.**

**N=60**

Level of knowledge	Experimental group		Control group		Unpaired 't' value
	Mean	S.D	Mean	S.D	
Pre test	9.33	3.60	8.40	2.85	<b>t = 0.79</b> N.S
Post test	19.43	2.41	8.20	2.73	<b>t = 11.85<sup>***</sup></b> <b>p = 0.001,S</b>

<sup>\*\*\*</sup>p<0.001, S –Very highly significant; N.S – Not significant

The above table shows the comparison of pre and post test level of knowledge regarding prevention of DVT between the experimental and control group.

In the pre test, the calculated unpaired 't' value of t = 0.79, showed no statistical significance; whereas the post test unpaired 't' value of t = 11.85 showed very high statistical significance, pointing the effectiveness of SCP in improving the post test level of knowledge regarding prevention of DVT in the experimental group in comparison to the control group.

**SECTION 4.4: ASSESSMENT OF THE POST TEST LEVEL OF SKILL REGARDING PREVENTION OF DVT IN THE EXPERIMENTAL GROUP**

**Table 4.4.1: Frequency and percentage distribution of post test level of skill regarding prevention of DVT in the experimental group.**

n=30

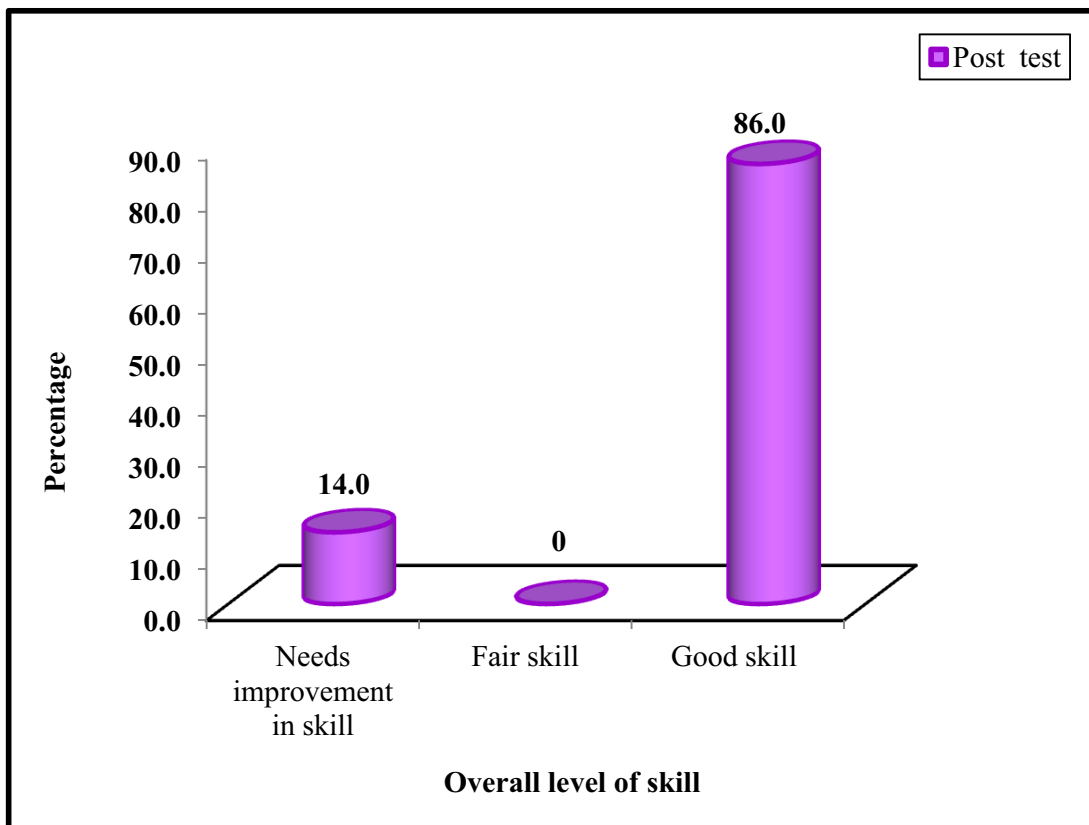
Experimental group	Needs improvement in skill ( $\leq 50\%$ )		Fair skill (51-75%)		Good skill ( $>75\%$ )	
	No.	%	No.	%	No.	%
<b>Post test level of skill</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>
Towel stretch	-	-	-	-	30	100
Standing calf stretch	3	10	-	-	27	90
Resisted ankle plantar flexion	5	16.7	-	-	25	83.3
Heel raise	5	16.7	-	-	25	83.3
Mini squat	8	26.7	-	-	22	73.3
<b>Overall score</b>	<b>4</b>	<b>14</b>	<b>-</b>	<b>-</b>	<b>25</b>	<b>86</b>

The above table signifies the post test level of skill regarding prevention of DVT in the experimental group. This clearly shows that most of the eunuchs in the experimental group had good skill in performing static stretching exercises.

This evidently proves that the SCP on prevention of DVT, resulted in good skill among eunuchs in performing static stretching exercises.



n = 30



**Figure 4.4.1: Percentage distribution of overall post test level of skill regarding static stretching exercises in the experimental group**

The above table represents the overall post test level of skill regarding static stretching exercises in the experimental group, where 86% of the eunuchs had good skill and remaining 14% needs improvement in skill.

**SECTION 4.5: CORRELATION OF THE POST TEST LEVEL OF KNOWLEDGE WITH SKILL REGARDING PREVENTION OF DVT IN THE EXPERIMENTAL GROUP.**

**Table 4.5.1: Correlation of the post test level of knowledge with skill regarding prevention of DVT in the experimental group.**

n = 30

<b>Variables</b>	<b>Mean</b>	<b>S.D</b>	<b>'r' value</b>
Knowledge	19.43	2.41	<b>r = 0.15</b>
Skill	11.16	2.79	<b>N.S</b>

N.S – not significant

The above table shows the correlation of the post test level of knowledge with skill regarding prevention of DVT in the experimental group.

The result concluded that the calculated Karl Pearson's correlation coefficient value of  $r = 0.15$ , was not statistically significant. This is because the eunuchs were embarrassed to perform exercise in front of the investigator and in general, they had a performance anxiety in doing the static stretching exercises in an orderly fashion.

**SECTION 4.6: ASSOCIATION OF THE SELECTED DEMOGRAPHIC VARIABLES WITH THE PRE & POST TEST MEAN SCORE OF KNOWLEDGE & POST TEST SKILL ON SCP REGARDING PREVENTION OF DVT IN THE EXPERIMENTAL GROUP.**

**Table 4.6.1: Association of the selected demographic variables with the pre & post test mean score of knowledge & post test skill on SCP regarding prevention of DVT in the experimental group.**

n = 30

S.No.	Variables	Pre test knowledge		Post test knowledge		Post test skill	
		F	Sig.	F	Sig.	F	Sig.
	<b>Demographic variables</b>						
1.	Age	0.17	0.68	0.02	0.87	1.62	0.21
2.	Educational status	1.09	0.36	1.12	0.35	0.20	0.89
3.	Occupation	0.59	0.67	0.39	0.81	1.01	0.41
4.	Type of job	0.32	0.57	6.73	<b>0.01*</b>	0.21	0.64
5.	Eunuch's family monthly income	1.10	0.37	0.73	0.57	0.51	0.72
6.	Eunuch's family size	0.41	0.74	0.51	0.67	1.34	0.28
7.	Diet pattern	0.62	0.54	1.29	0.29	1.10	0.34
	<b>Lifestyle variables</b>						
8.	Type of food & frequency of food intake						
i)	Junk foods	0.70	0.50	0.47	0.62	0.11	0.88
ii)	Deep fried items	1.40	0.26	0.43	0.73	1.20	0.32
iii)	Meat and poultry products	0.86	0.49	0.58	0.68	1.50	0.23
9.	Any personal habits						
a.	Smoking/tobacco use	0.00	0.96	0.03	0.86	0.77	0.38
	If yes, specify the no. of packs/day	0.00	0.99	0.03	0.96	1.52	0.23
b.	Alcohol use	0.06	0.93	0.21	0.81	1.24	0.30
	Quantity(ml)	0.68	0.60	0.38	0.81	1.15	0.35
	Frequency (days/wk)	1.10	0.38	0.96	0.46	1.05	0.40
c.	Type of drinking	0.57	0.57	0.50	0.61	0.11	0.89
	<b>Personal variables</b>						
10.i)	Types of HRT	0.27	0.60	0.79	0.38	5.77	<b>0.02*</b>
ii)	Dose	0.18	0.67	0.87	0.35	0.06	0.79
iii)	Frequency	0.06	0.80	0.53	0.47	0.35	0.55
iv)	Duration	0.79	0.46	0.85	0.43	0.12	0.88
11.	HRT users in eunuch's family	3.33	0.05	0.00	0.99	0.03	0.96
	<b>Anthropometric variables</b>						
12.	Height (in cm)	0.78	0.46	1.10	0.34	0.92	0.40
13.	Weight (in kg)	0.12	0.98	0.30	0.90	0.25	0.93
14.	BMI (kg/m <sup>2</sup> )	0.07	0.97	0.21	0.88	0.45	0.71

\* p<0.05 level, S- Mild significance

The findings in the above table indicates that the demographic variable nature of activity had shown mild statistical significant association with the post test mean score of knowledge and in addition to this, the types of HRT also reported that there is a mild statistical significant association with the post test mean score of skill on SCP regarding prevention of DVT in the experimental group.

**Table 4.6.2: Association of the selected demographic variable nature of activity with post test mean score of knowledge regarding prevention of DVT in the experimental group.**

n=30

Demographic Variable	Mean Post test Knowledge score	ANOVA Score	
		Experimental group	
Nature of activity		F	Sig.
Prolonged standing (>8-10hrs/day)	18.44	<b>6.73</b>	<b>0.01*</b>
Prolonged sitting (>8-10 hrs/day)	20.57		
Long distance travel (>14 hrs/day)	-		

\* p<0.05 level, S- Mild significance

The above table highlights the association between the post test mean score of knowledge and nature of activity in the experimental group, confirmed using one way analysis of variance.

The nature of activity reported mild statistical significance at p<0.05 level, while the other options did not reveal any significant association with the post test knowledge score. This indicates that eunuchs who were sitting for a prolonged duration (>8-10 hrs/day) involved themselves in chatting and reading books. Hence they showed higher improvement in the post test level of knowledge regarding prevention of DVT in comparison to other samples.

**Table 4.6.3: Association of the selected demographic variable types of HRT with post test mean score of skill regarding prevention of DVT in the experimental group.**

n = 30

Demographic Variable	Mean Post test Skill Score	ANOVA Score	
		Experimental group	
TYPES OF HRT		F	Sig.
Estrogen only	10.35	5.77	0.02*
Continuous combined (both estrogen and progesterone)	12.80		
Progesterone only	-		
Cyclical (estrogen followed by progesterone or vice versa)	-		

\* p<0.05 level, S- Mild significance

The above table depicts the association between the post test mean score of skill and types of HRT in the experimental group, confirmed using one way analysis of variance.

The types of HRT showed mild statistical significance at p<0.05 level. This indicates that eunuchs who were on continuous combined therapy (both estrogen and progesterone) had less side effects, when compared to estrogen only therapy. This makes evident that eunuchs who had less side effects showed less anxiety and more interested to practice the static stretching exercises at home which led to an improvement in skill.

# *CHAPTER - 5*

## *DISCUSSION*

## DISCUSSION

This chapter discusses the analytical findings of the study based on the objectives, the review of literature and null hypotheses specified in the study. The current study was undertaken to evaluate the effectiveness of SCP on knowledge and skill regarding prevention of DVT among eunuchs at selected settings, Chennai.

### **5.1 The findings of the demographic variables of eunuchs in the experimental and control group.**

The demographic variables considered in the study were age in years, educational status, occupation, nature of activity, eunuch's family monthly income (in rupees) and eunuch's family size (no. of persons); the lifestyle variables were diet pattern, type of food and frequency of food intake (no. of days/week), any personal habits like smoking/tobacco use, alcohol use and drug abuse; the personal variables were types of HRT and HRT users in eunuch's family (no. of persons); the anthropometric variables were height (in cm), weight(in kg) and BMI (in kg/m<sup>2</sup>).

In the experimental group, majority of the eunuchs belonged to the age group of 21-30 years with middle school certificate whereas in control group most of the samples completed their high school certificate. With regard to occupational status, most of the samples were in the employed category in the experimental group; while in the control group, most of the eunuchs were in the control group.

Among both the groups, almost all the eunuchs were standing for a prolonged duration of more than 8-10 hrs/day with a family monthly income of Rs.5387-8988 per month. Moreover, majority of them were in the family size of 3-4 in the experimental group and 1-2 in the control group. Pertaining to the dietary pattern, approximately all the samples consumed non-vegetarian and the experimental group samples were not taking junk foods, takes fried items 3-4 times with meat and poultry products once or twice a week. Whilst majority of samples in the control group took junk foods once or twice a day, deep fried items 3-4 times with meat and poultry products once or twice a week.



In addition to this, maximum number of the samples were consuming tobacco less than 3 packs/day with alcohol consumption in both the groups. Also, it reports that in the control group, more than half of the samples were social drinkers whereas in the experimental group most of them were non drinkers.

In relation to the types of HRT, both the groups were taking estrogen only therapy around 2mg, once or twice a day, over a period of 3-4 years and the no. of family members who were on HRT was 1-2 members or none of them were taking HRT among both the groups.

Likewise, with reference to height and weight, more than half of the eunuchs among both the groups, had a height of 156-160 cm and weight of 71-80 kg; with respect to BMI, half of the eunuchs were between 25-29.9 kg/m<sup>2</sup> in the experimental group; whereas in the control group, majority of the eunuchs fell into the category of obesity.

Reardon Gregory, Pandya Naushira, Bookhart Brahmin (2013) carried out a retrospective analysis among the patients who were admitted in nursing homes, USA. The citation reported that the prevalence rate of VTE is high among people who were aged below 50 years.

The NTDS Report on Health and Health Care, (2010) documented that around 26% of the transgenders were completely dependent on alcohol use. This habitual usage was completely due to the discrimination faced by the eunuchs in the community.

ESHRE workshop group, (2013) reported that the VTE risk is more common among the oral contraceptive users. Besides, Rott Hanne lore (2014) conducted a systematic review and reported that the oral HRT is relatively linked to produce more vascular related complications among transwomen and general population.

Mitchell Sheona, (2015) & Yang Genyan, Staercke De Christine, Hooper Craig (2012) identified that obesity is one of the etiological factor for developing VTE among patients with excessive body weight.

## **5.2 The first objective was to assess the effectiveness of Stop Clot Package regarding prevention of Deep Vein Thrombosis in the experimental and control group.**

Comparison of pre and post test knowledge scores regarding prevention of DVT in the experimental and control group, eventuated that the calculated paired 't' value of  $t = -14.84$ , statistically showed very high significance at  $p < 0.001$  level in the experimental group whereas in the control group, it showed a non significant paired 't' value.

Comparison of pre and post test knowledge scores regarding prevention of DVT between the experimental and control group, ascertained that in the pre test, the calculated unpaired 't' value of  $t = 0.79$ , was not statistically significant; while in the post test the unpaired 't' value of  $t = 11.85$ , showed very high statistical significance at  $p < 0.001$  level.

The above finding denotes that the SCP was effective in improving the level of knowledge regarding prevention of DVT in the experimental than the control group.

Nidhi Kumar, (2014) conducted an experimental study to determine the effectiveness of Structured Teaching Programme on level of knowledge about the risk factors and prevention of DVT among registered nurses who were working in an Intensive Care Units (ICUs) of a well renowned hospital in Ludhiana, Punjab. The study proved that this programme was successful in improving the level of knowledge among registered nurses.

Pamela K Sykes., Fitz Gerald Mary (2015) & Marini. L. Bernard (2014) carried out a pilot study to find out whether the VTE video show has an impact on level of knowledge and contentment with regard to DVT and PE prevention among hospitalized patients. The findings suggested that the video show was an important aid in enhancing knowledge and improving contentment among these patients.

Hence the null hypotheses  $NH_1$  stated earlier that **“there is no significant effect of Stop Clot Package on level of knowledge regarding prevention of Deep Vein Thrombosis at  $p < 0.05$  level”** was **rejected** for the experimental group and **accepted** for the control group.

### **5.3 The second objective was to assess the post test level of skill regarding prevention of Deep Vein Thrombosis in the experimental group.**

The analysis of the post test skill among the experimental group, showed that 86% had good skill and 14% needs improvement in skill following the administration of SCP.

This evidently proves that the SCP on prevention of DVT resulted in good skill among eunuchs in performing static stretching exercises.

Macklin. K, Healy. A, Chockalingam. N (2012) conducted a comparative study to assess the effectiveness of calf muscle stretching on ankle joint dorsi flexion and consequent changes that occurred within Peak Plantar Pressures (PPP), force and temporal parameters. The findings of the study proved that it was highly beneficial among patients with ankle joint equinus; this denotes that the training programme on calf muscle stretching had caused a tremendous improvement on ankle joint dorsiflexion.

Eom Ho Jun, Chung Ho Sin, Shim Hun Jae (2014) conducted a comparative study between latrine users and squat position users to investigate the effectiveness of squat exercises to prevent DVT and measured the rate of blood flow in both the extremities by using a portable ultrasound machine. The findings revealed that the squat exercises had shown a significant effect among the squat position users, thereby enhancing the blood flow in the lower extremities, to prevent DVT.

### **5.4 The third objective was to correlate the post test level of knowledge with skill regarding prevention of Deep Vein Thrombosis in the experimental group.**

Correlation between the post test level of knowledge with skill regarding prevention of DVT in the experimental group was calculated by using Karl Pearson's correlation coefficient and it was found that the 'r' value of  $r = 0.15$ , was not statistically significant.

The above findings concluded that the eunuchs were embarrassed to exercise in front of the investigator and also had a performance anxiety while doing the static stretching exercises in a systematic manner.

A M Bhatti, S Ahsin, B Salim, J Mansoor (2012) conducted a cross sectional study to evaluate the level of knowledge, attitude and skill regarding prevention of DVT among the health care professionals at five different hospitals of Rawalpindi. The study revealed that almost all the patients were unaware about the morbidity rates and long term complications of DVT and PE. Therefore, both the knowledge and skill score on prevention of DVT was comparatively very low in these professionals.

A. Golomb Beatrice, T Chan Virginia, Denenberg Julie, Koperski Sabrina, Criqui H. Michael (2013) proceeded with a cross sectional study to research the correlation and risk factor relationship between DVT, PE and Superficial Venous Thrombosis (SVT) among different ethnic groups, aged above 40 years. The result showed that, there was a significant level of correlation identified with respect to SVT which includes prolonged inactivity, positive family history of VTE, inadequate knowledge on VTE, people of African- American origin and female participants. While for DVT and PE, extensive smoking, high blood pressure, prolonged inactivity, familial history and estrogen therapy also evidenced a significant correlation. In general, the risk factor relationship was observed among HRT users, familial history along with prolonged periods of inactivity.

Hence the null hypotheses  $NH_2$  stated earlier that **“there is no significant relationship between the post test level of knowledge with skill regarding prevention of Deep Vein Thrombosis in the experimental group at  $p < 0.05$  level”** was accepted.

#### **5.5 The fourth objective was to associate the selected demographic variables with mean differed level of knowledge and post test skill score regarding Stop Clot Package on prevention of Deep Vein Thrombosis in the experimental group.**

The demographic variable nature of activity reported mild statistical significant association at  $p < 0.05$  level in the experimental group. This is because the eunuchs who were sitting for a prolonged duration ( $> 8-10$  hrs/day) involved themselves in chatting, reading books and they showed greater improvement in the post test level of knowledge regarding prevention of DVT when compared with other samples.

On the other hand, the demographic variable types of HRT also indicated mild statistical significant association at  $p < 0.05$  level in the experimental group. The reason behind this, the eunuchs who were on continuous combined therapy had less side effects, when compared with estrogen only therapy. This clearly demonstrates that eunuchs who had less side effects showed less anxiety and were eagerly interested to carry out this static stretching exercises at home which led to the improvement in skill.

Pascal Jean Fournier (2014) evaluated a case control study to check out if the incidental use of statins and continuous combined HRT pose a significant risk among post menopausal women, aged above 50 years. A mild statistical significant level of association was reported betwixt statin and HRT users. On the other hand, the continuous combined HRT is a substantial risk for VTE; while among the statin users, this VTE prediction rate was comparatively very low.

Hence the null hypotheses  $NH_3$  stated earlier that **“there is no significant association of selected demographic variables with the mean differed level of knowledge and post test skill regarding prevention of Deep Vein Thrombosis in the experimental group at  $p < 0.05$  level”** was **rejected** for nature of activity and types of HRT and **accepted** for all the other demographic variables at  $p < 0.05$  level.

*CHAPTER-6*  
*SUMMARY, CONCLUSION,*  
*IMPLICATIONS,*  
*RECOMMENDATIONS*  
*AND LIMITATIONS*

## **SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS**

This chapter presents the summary, conclusion, implications, recommendations and limitations of the study.

### **6.1 SUMMARY**

DVT is a blood clot that usually forms in the veins of the lower leg and can extend to involve the large deep veins of the upper legs or thigh. It is sometimes called as “economy class syndrome”. DVT can be caused by genetic and behavioral factors. The risk factors for DVT includes HRT or birth control pills, for instance, the estrogen hormone treatment causes the blood to clot more easily and results in much harmful events; injury or surgery to the veins, prolonged bed rest, heart failure, inflammatory bowel disease, prolonged standing, sitting for long periods of time when driving or flying, previous DVT, old age and obesity.

DVT ranks third when compared with other vascular diseases, thus remains a community health problem and revocable patient safety problem (CDC, 2014). DVT and PE is the leading cause of death among 1,00,000 population per year (Medical News Today, 2013).

However there are certain lifestyle modifications to prevent DVT, which includes education on healthy diet, weight control, brisk walking for 30-60 minutes, regular monitoring of blood pressure, adequate fluid intake, smoking and alcohol cessation, managing the side effects of estrogen, practice of static stretching exercises and follow up advice aimed at reducing the occurrence of DVT.

The purpose of the study was to assess the effectiveness of SCP on knowledge and skill regarding prevention of DVT among eunuchs. The findings revealed that SCP developed by the investigator was an effective educational tool in enhancing the knowledge regarding prevention of DVT among eunuchs.

**The objectives of the study were**

1. To assess the effectiveness of Stop Clot Package on level of knowledge regarding prevention of Deep Vein Thrombosis in the experimental and control group.
2. To assess the post test level of skill regarding prevention of Deep Vein Thrombosis in the experimental group.
3. To correlate the post test level of knowledge with skill regarding prevention of Deep Vein Thrombosis in the experimental group.
4. To associate the selected demographic variables with pre and post test mean score of knowledge and post test skill on Stop Clot Package regarding prevention of Deep Vein Thrombosis in the experimental group.

**The study was based on the assumptions that**

1. Eunuchs may use hormonal supplements to exhibit their femininity.
2. Eunuchs are prone to develop DVT due to long term use of hormonal supplements.
3. Eunuchs may have some knowledge regarding prevention of DVT
4. Awareness regarding SCP may enhance their knowledge and skill on prevention of DVT.

**The null hypotheses formulated were**

**NH<sub>1</sub>:** There is no significant effect of Stop Clot Package on level of knowledge regarding prevention of Deep Vein Thrombosis at  $p < 0.05$  level.

**NH<sub>2</sub>:** There is no significant relationship between the post test level of knowledge with skill regarding prevention of Deep Vein Thrombosis in the experimental group at  $p < 0.05$  level.

**NH<sub>3</sub>:** There is no significant association of selected demographic variables with pre and post test mean score of knowledge and post test skill on Stop Clot Package regarding prevention of Deep Vein Thrombosis in the experimental group at  $p < 0.05$  level.

The review of literature was done from the primary, secondary and tertiary sources, investigator's professional experience and expert's guidance from the field of MSN and CHN, provided a strong foundation for the study. It also strengthened



the ideas for conceptual framework, designing the methodology and formulation of data collection tool.

The conceptual framework for the study was based on “**Tannahill’s model of health promotion**” and it provided a holistic framework for achieving the objectives of the study. The framework is comprised of prevention, health education and protection to enhance level of knowledge and skill among eunuchs to prevent DVT.

The researcher had adopted a quasi experimental non-equivalent control group pre test and post test design to assess the effectiveness of SCP on knowledge and skill regarding prevention of DVT among 60 eunuchs by using non probability purposive sampling technique.

The tool constructed for this study has two parts, the first part is Data Collection Tool with four sections (DVT assessment checklist, demographic data, structured knowledge questionnaire and observational checklist) and the second part with Intervention tool (Lecture cum discussion, demonstration of static stretching exercises by the investigator and the return demonstration performed by the eunuchs).

The content validity of the data collection tool and intervention tool were obtained from the Medical experts and Nursing experts in the field of MSN.

The data collected was analyzed and interpreted based on the objectives and null hypotheses, using descriptive and inferential statistics. The findings revealed that there was a significant improvement in the pre and post test level of knowledge regarding prevention of DVT among eunuchs after being provided with SCP.

**The major findings of the study were as follows,**

- The pre test analysis of knowledge revealed that in the experimental group, majority (77%) of the eunuchs had inadequate knowledge regarding prevention of DVT, whereas in the post test, it improved to 60% with adequate knowledge and 30% with moderately adequate knowledge. Apparently in the control group, majority (80%) of the eunuchs had inadequate knowledge in the pre test while in the post test, it remained similar with 83.3% having inadequate knowledge.

- The analysis of the effectiveness of the SCP on knowledge and skill regarding prevention of DVT among eunuchs, showed that, in the experimental group both the calculated paired 't' value of  $t = -14.84$  and the unpaired 't' value of  $t = 11.85$ , was statistically very highly significant at  $p < 0.001$  level. This clearly denotes that the SCP regarding prevention of DVT executed to the eunuchs in the experimental group had significantly improved the level of knowledge than the control group.
- The analysis of the post test skill among the experimental group, showed that 86% had good skill and 14% needs improvement in skill following the administration of SCP.
- The correlation between the post test level of knowledge and skill in the experimental group, revealed that the calculated Karl Pearson's correlation coefficient value of  $r = 0.15$ , was not statistically significant.
- Statistically, a mild significant level of association was identified between the demographic variables nature of activity with the post test mean score of knowledge and types of HRT with the post test mean score of skill on SCP regarding prevention of DVT at  $p < 0.05$  level in the experimental group. This indicates that the eunuchs who were sitting for a prolonged duration involved themselves in chatting, reading books and showed greater interest in knowing about the prevention of DVT, which in turn improved their post test knowledge score. Similarly, the eunuchs who were on continuous combined therapy had less side effects when compared to estrogen only therapy, so they were more interested and motivated to practice the static stretching exercises at home which led to the improvement in skill.

## 6.2 CONCLUSION

The present study assessed the effectiveness of SCP on knowledge and skill regarding prevention of DVT among eunuchs. The study findings revealed that, in comparison to the control group, the experimental group showed a significant improvement in the level of knowledge regarding prevention of DVT, following the administration of SCP developed by the investigator. Hence, it was an effective educational tool to create awareness and skill in preventing DVT and managing the side effects of HRT.

Due to the technological advancements, most of them are online, hence messages which we send are immediately viewed and stored in their personal gadgets. Thereby, it serves as a frequent reminder for them to perform the instructions given. Majority of the time, instructions informed orally is always forgotten whereas; instructions seen by the eyes are always remembered. Every time when a person comes online in WhatsApp, the sender name is displayed which frequently reminds them to perform the exercises.

To conclude, WhatsApp communication is more effective than verbal communication over phone.

### **6.3 IMPLICATIONS**

The investigator has drawn the following implications from the study, which is of vital concern in the field of nursing practice, nursing education, nursing administration and nursing research.

#### **6.3.1 Nursing Practice**

1. The ANP must encourage the novice nurses to gain knowledge regarding transgender health care to manage DVT and other CVD.
2. The ANP should encourage the expert nurses to formulate a primary care protocol for transgenders in order to improve the standards of care.
3. Nurse practitioners can utilize this DVT assessment checklist to rule out the probability of DVT among hospitalized patients.
4. Nurse practitioner can implement DVT prevention protocol for their patients.
5. Nurse practitioner should monitor the patients who are on HRT for any signs of DVT as a part of routine nursing care.

#### **6.3.2 Nursing Education**

1. Nursing curriculum should include transgender health care concepts.
2. Nursing institutions must offer opportunities for the nursing students to get exposed to various transgender associations to facilitate awareness and promote quality care.
3. Seminars, workshops and conferences can be conducted for nursing students to update the information about transgender health.

4. Nurse educator must incorporate the static stretching exercises which can be done for the prevention of DVT.
5. Nursing college students can be motivated to provide health education on static stretching exercises to prevent DVT and for the patients who are prone to develop DVT.

### **6.3.3 Nursing Administration**

1. Nurse administrators can organize Continuing Nursing Education (CNE) on effectiveness of SCP for preventing DVT among eunuchs.
2. Nurse administrators should impart knowledge about this protocol in cardiac care units.
3. Nurse administrators can conduct board meetings to evaluate the effective use of these strategies.
4. Nurse administrators should encourage the appointment of DVT Nurse managers in all hospitals.
5. Nurse administrators can formulate quality care protocol for DVT assessment and prevention.

### **6.3.4 Nursing Research**

1. The findings of the study can be disseminated through conferences, seminars and by publishing in journals and websites.
2. Nurse researcher should encourage the staff nurses to carry out more research in the field of transgender health.
3. Nurse researcher can rule out the health related problem among eunuchs.
4. Nurse researcher should encourage the staff nurses to implement the research findings in their daily care and bring out more standards and protocols to promote health of the eunuchs.
5. Nurse researcher can encourage the nursing students to carry out more research in the field of peripheral vascular disorders.

#### **6.4 RECOMMENDATIONS**

1. The SCP regarding prevention of DVT can be utilized by the members of the Thozhi Association, Aminjikarai, Chennai and THAA, Saidapet, Chennai.
2. Similar study can be conducted in various transgender associations at local level and national level.
3. The researcher recommends the student nurses in nursing colleges to formulate protocol for DVT, exclusively for transgenders.
4. A comparative study can be done among eunuchs in two different cities.
5. The study can be replicated in the same setting for reinforcement.
6. The researcher recommends to find out the effectiveness of SCP on prevention of DVT among post menopausal women.

#### **6.5 LIMITATIONS**

The researcher found difficulty in getting Indian reviews and nursing studies related to the prevention of DVT among eunuchs. Also, found it very difficult to gather the samples during pilot and main study.

#### **6.6 PLAN FOR RESEARCH DISSEMINATION**

- ❖ The research findings will be disseminated through WPATH, Clot care Online Resource and through British Journal of Nursing (BJN), ICCR Journal of Nursing, Indian Journal of CNE and Advanced Nursing, The Nursing Journal of India – Trained Nurses Association of India (TNAI) within 6 months period of time.
- ❖ The research findings of the main study was presented in the 4<sup>th</sup> International Conference organized by ICCR, Omayal Achi College of Nursing on 28<sup>th</sup>, 29<sup>th</sup> and 30<sup>th</sup> January 2016.

#### **6.7 PLAN FOR RESEARCH UTILIZATION**

The research findings will be communicated to the Director of TRA, India and students in nursing colleges and hospitals for utilization by implementing SCP as a prevention component for DVT in all Transgender Association, Chennai.

# *REFERENCES*

## REFERENCES

### BOOKS:

- Agarwal, B. L. (2011). *Textbook of Statistics*. CBS publishers. New Delhi.
- Bailey Louis., McNeil Jay.,(2102). *Transhealth Across the North West*. NHS publications. Manchester .
- Basavanthappa, B.T. (2007). *Nursing Research*. Jaypee Brothers Medical Publishers. New Delhi.
- Basavanthappa, B.T. (2008). *Nursing Theories*. Jaypee Brothers Medical Publishers. New Delhi.
- Braunwald Eugene et.al, (2006). *Harrison's Principles of Internal Medicine*. Mc Graw Hill publishers. New York.
- Burns, Nancy. (2009). *The practice of nursing research*. Saunders publications. Missouriie.
- Chakrapani Venkatesan (2010). *Hijras/Transgender Women in India: HIV, Human Rights and Social Exclusion*. UNDP. India.
- Constance, Hieule J., & Craven, Ruth F. (2007). *Fundamentals of Nursing: human health and function*. Lippincott publishers. Philadelphia.
- Couchman Wendy., Dawsons Jane (2015). *Nursing and Health Care Research a Practical guide*. RCN publishing company Ltd. London.
- Denise, Polit F. (2010). *Nursing research – principles and methods*. Lippincott Publishers. Philadelphia.
- Elakkuvana, Raj Bhaskara. (2010). *Nursing Research and Biostatistics*. Emmess publishers. Bangalore.
- Fawcett, Jacqueline. (2005). *Analysis and Evaluation of Nursing Theories*. F.A Davis Company publishers. Philadelphia.
- Grove, Susan K., & Burns, Nancy. (2005). *The Practice of Nursing Research: appraisal, synthesis and generation of evidence*. Elsevier publishers. USA
- Gurumani (2005). *Introduction to Biostatistics*. Jaypee publishers. Bangalore
- Gustaffson K., Cola De., Pfaff., (2012). *Handbook of Clinical Gender Medicine*. Karger medical and scientific publishers. Sweden.

- Heitkemper Mclean Margaret., Bucher Linda., O'Brien Patricia., Dirksen Ruff Shanon., (2013). *Lewis' Medical Surgical Nursing – Assessment and management of clinical problems*. Elsevier publishers. Philadelphia.
- Hickey V Joanne., Onimette M Ruth, Venegoni L Sander. (2008). *Advanced Practice Nursing- changing roles and clinical applications*. Lipincott publishers. New York.
- Ignavaticus, Donna D., & Workman, Linda M. (2013). *Medical Surgical Nursing Patient-Centered Collaborative Care*. Elsevier publishers. USA
- James, Fain A. (2009). *Reading, Understanding and Applying Nursing Research*. Jaypee publishers. New Delhi.
- Johnson, Betty M., & Webber, Pamela B. (2005). *An Introduction to Theory and Reasoning in nursing*. Elsevier publication. USA.
- Kottke J.Frederick., Lehmann F. Justus (2007) *Krusen's Handbook of Physical Medicine and Rehabilitation*. W.B Saunders publications. Philadelphia.
- Lemone Priscilla., & Burke Karen. (2008). *Medical Surgical Nursing Critical Thinking in Client Care*. Dorling Kindersley publishers. New Delhi.
- Marino Paul (2013). *Marino's – The ICU Book*. Lipincott Williams and Wilkins publications. New York.
- Mcneill Patrick., Chapman Steve (2005). *Research Methods*. Tavistock publications Ltd. USA.
- Mervyn Singer., Andrew Webb., (2011). *Oxford Textbook of Critical Care – Indispensable guide to critical care medicine*. Oxford University Press publications. USA.
- Monohan Donovan Francis., Neighbors Marianne., Sanah Judith., Marek F.Jane., Green J. Carol., (2009) *Phipp's Medical Surgical Nursing. Health and Illness perspectives*. Mosby publications. Missouri.
- Munro Hazard Barbara (2005). *Statistical Methods for Health Care Research*. Lippincott Williams and Wilkins publishers. New York
- Patrick, Joyce Fitz J., et al. (2005) *Conceptual models of nursing – Analysis and Application*. Apprentice Hall publishers.
- Rao, Sundar. (2006). *Introduction to biostatistics and research method*. Prestographic printers. Vellore.
- Rao Visweswara K. (2009). *Biostatistics: a manual of statistical methods*. Jaypee Brothers Medical Publishers. New Delhi.



- Restog Bala Veer. (2009). *Fundamentals of Biostatistics*. Anne Books private limited. New Delhi.
- Shafer, Kathleen Newton.et. al, (2008). *Medical Surgical Nursing*. Mosby publishers. London.
- Suddarth, Doris Smith. (1991). *The Lippincott Manual of Nursing Practice*. Lipincott publishers. Philadelphia.
- Tamara Adrian.,(2011). *WPATH-Book of Abstracts*. Georgia publications. Sweden.
- Wood Libindo Geri., Haber Judith. (2006). *Nursing Research: methods and critical appraisal for evidence based practice*. Elsevier publishers. USA.

## **JOURNALS:**

### **ONLINE JOURNALS:**

- Aggarwal, A. et.al, (2015). Deep Vein Thrombosis and Pulmonary Embolism: Awareness and Prophylaxis Practices Reported by Patients with Cancer 7 (January2016) Doi:10.3109/07357907.2015.1048871.
- Allman-Farinelli, M. (2011). Obesity and venous thrombosis: A review. *Seminars in Thrombosis and Hemostasis*, 37(8), Doi: 10.1055/s-0031-1297369.
- Angral, R., Ms, I., & Kundan, S. (2012). Incidence of deep vein thrombosis and justification of chemoprophylaxis in Indian patients : A prospective study, 67–71.
- Autar, R. (2003). The management of Deep Vein Thrombosis: the Autar DVT risk assessment scale re-visited. *Journal of Orthopaedic Nursing*, 7(3), 114–124. Doi: 10.1016/S1361-3111(03)00051-7.
- Bastos M. et.al, (2014). Combined oral contraceptives: venous thrombosis. *The Cochrane Database of Systematic Reviews*, 3(3), CD010813. Doi:10.1002/14651858.CD010813.
- Beatrice A Golomb., Virginia T Chan., Julie O Denenberg., Sabrina Koperski., Michael H. Criqui (2014) Risk marker associations with Venous thrombotic events: a cross-sectional analysis. *British Medical Journal*, Doi: 10.1136/bmjopen-2013-003208.
- Beeck, J. L. Van, Versfeld, K., & Ehrlich, R. (2014). Deep vein thrombosis following prolonged kneeling : a case report, 305–307. Doi:0.1093/occmed/kqu041.
- Bodenmann, G. (2011). *International Journal of Sexual Health*. Doi:10.1300/J514v19n04.

- Capri & ESHRE Workshop Group, (2013). Venous thromboembolism in women : a specific reproductive health risk, *19*(5), 471–482. Doi:10.1093/humupd/dmt028.
- Chettiar, A. (2015). Problems Faced by Hijras (Male to Female Transgenders) in Mumbai with Reference to Their Health and Harassment by the Police, *5*(9). Doi:10.7763/IJSSH.2015.V5.551.
- Costa E. M. F., & Mendonca, B. B. (2014). Clinical management of transsexual subjects. *58*(2), 188–96. Doi: 10.1590/0004-2730000003091.
- Drobnic, F., Pineda, A., Román, J., & Manuel, J. (2015). Clinical guidelines for the prevention, diagnosis and treatment of Venous thromboembolism in sport, *50* (188), 147–159.
- Eliason, M. J., Dibble, S., & De Joseph, Jeanne. (2010). Nursing's Silence on Lesbian - The Need for Emancipatory Efforts. *Advances in Nursing Science*, *33*(3), 206–218.
- Enga, K. F., Brækkan, S. K., Cessie, S. L. E., & Rosendaal, F. R. (2012). Cigarette smoking and the risk of venous thromboembolism: The Tromsø Study, (June), 2068–2074. Doi:10.1111/j.1538-7836.2012.04880.
- Fenton, M., Greenfield, S., & Boulton, A. (2015). Public Knowledge of Deep Vein Thrombosis Open Access (DVT): A Street Survey in the Suburbs of Brimingham, United Kingdom, *23*, 31–38.
- Filis K., Galyfos, G., & Sigala, F. (2015). Physiotherapies Mobilisation after Lower Limb Deep Vein Thrombosis and Post-Thrombotic Syndrome, *5*(2), 6–7. Doi: 10.4172/2165-7025.1000e137.
- Gooren, L. J., Wierckx, K., & Giltay, E. J. (2014). Cardiovascular disease in transsexual persons treated with cross-sex hormones: reversal of the traditional sex difference in cardiovascular disease pattern. *European Journal of Endocrinology*, *170*(6), 809–819. Doi: 10.1530/EJE-14-0011.
- Grant J. M., Mottet, L., Tanis, J., Herman, J. L., Harrison, J., & Keisling, M. (2010). National Transgender Discrimination Survey Report on Health and Health Care. *National Center for Transgender Equality*, *5*, 23. Doi: 10.1016/S0016-7878(90)80026-2.
- Hong Chun Kee et.al (2012). Risk factors and Incidence of DVT in lower extremities among critically ill patients. *Journal of Clinical Nursing*. *21*(14), Doi: 10.1111/j.1365-2702.2012.04112.x.
- Huisman V.M & Klok F.A.(2013). Diagnostic management of acute Deep Vein Thrombosis and pulmonary embolism, 412–422. Doi: 10.1111/jth.12124s

- Hussain M., Syed N., Ramakrishna P., & Mahapatra, S. (2014). Co Morbidities and Prescription Patterns in Patients with Peripheral Vascular Disease in a Tertiary Care Hospital in India, 8(1), 60–63. Doi: 10.5829/idosi.gjp.2014.8.1.81276
- James Janice.,(2013). Transgender Health Care. *Doctor of Nursing Practice System Change Projects*. 6(41).
- Johnson M., Smyer, T., & Yucha C. (2012). Methodological quality of quantitative lesbian, gay, bisexual, and transgender nursing research from 2000 to 2010. *Advances in Nursing Science*, 35(2), 154–65. Doi: 10.1097/ANS.0b013e31825372b9.
- Jun Ho Eom., Chung Ho Sin., Shim Hun Jae (2014). The effects of Squat exercises in postures for toilet use on blood flow velocity of the leg vein. *Journal of Physical Therapy Science*. 26(9), 1485–1487, Doi: 10.1589/jpts.26.1485.
- Kabrhel, C., Goldhaber, S. Z., & Rimm, E. B. (2012). Original Contribution Prospective Study of Diet and Venous Thromboembolism in US Women and Men, 175(2), 114–126. Doi: 10.1093/aje/kwr377.
- Kakkar, A. K., & Rushton-smith, S. K. (2013). Incidence of Venous Thromboembolism in Orthopedic Surgery, 11–18. Doi: 10.1007/978-1-4471-4336-9.
- Kalra, S. (2012). The eunuchs of India: An endocrine eye opener. *Indian Journal of Endocrinology and Metabolism*, 16(3), 377. Doi: 10.4103/2230-8210.95676.
- Kesieme, & Kesieme. (2011). Deep Vein Thrombosis: a clinical review. *Journal of Blood Medicine*, 2, 59. Doi: 10.2147/JBM.S19009.
- Kwok M. Ho., Ebrahim Bham.,Warren Pavey (2015). Incidence of Venous Thromboembolism and Benefits and Risks of Thromboprophylaxis After Cardiac Surgery. *Journal of American Heart Association. (AHA)* 4, Doi: 10.1161/JAHA.115 .002652
- Lim, F. A., Brown, D. V., & Jones, H. (2013). Lesbian, Gay, Bisexual, and Transgender Health: Fundamentals for Nursing Education. *Journal of Nursing Education*, 52(4), 198–203. Doi: 10.3928/01484834-20130311-02
- Liao.S et.al, (2014). Incidence of Venous thromboembolism in different ethnic groups : a regional direct comparison study, 17 (1) 214–219 Doi: 10.1111/jth.12464.
- Majoor, C. J et.al (2013). Risk of Deep Vein Thrombosis and Pulmonary Embolism in asthma. *The European Respiratory Journal*, 42, 655–61. Doi: 10.1183/09031936 .00150312.
- Mcfarland L et.al, (2013). ExPeKT - Exploring prevention and knowledge of Venous thromboembolism : study protocol, 1–8. Doi: 10.1136/bmjopen-2013-002766.

- Namita Rajput., Shelly Oberoi., Kamna Chopra.(2015). Challenges faced by the third generation- an Indian overview. *International Journal of Social Science and Interdisciplinary Research*.
- Nishiwaki M., Yonemura H., Kurobe K., & Matsumoto N. (2015). Four weeks of regular static stretching reduces arterial stiffness in middle-aged men. *SpringerPlus*. Doi: 10.1186/s40064-015-1337-4.
- Olson C. Nels.et.al, (2015) American Heart Association's Life's Simple 7 and Risk of Venous Thromboembolism: The Reasons for Geographic and Racial Differences in Stroke Study. *Journal of American Heart Association* Doi: 10.1161/JAHA.114.001494.
- Page Phil (2012). Current Concepts in muscle stretching for Exercise and Rehabilitation. *The International Journal of Sports Physical Therapy*. 7(1), 109-114.
- Pitkin Joan., (2013) Should HRT be duration limited? *Journal of Post Reproductive Health*, 19(4) 167-174, Doi: 10.1177/1754045313507176.
- Poul Suadicani., Harald Hannerz., Elsa Bach., Finn Gyntelberg., (2012). Jobs encompassing prolonged sitting in cramped positions and risk of Venous thromboembolism: cohort study. *Journal of Royal Society of Medicine*. 3(28), Doi: 10.1258/shorts.2011.011121
- Prandoni, P. et.al, (2012). Family history of Venous thrombosis or sudden death as a risk factor for Venous thromboembolism. *Thrombosis and Haemostasis*, 107(6), 1191–1192. Doi: 10.1160/TH11-12-0845
- Raskob et.al, (2014). Thrombosis: a major contributor to the global disease burden. *Journal of Thrombosis and Haemostasis*, 12(10), 1580–1590. Doi:10.1111/jth.1269.
- Reisner, S. L et.al, (2015). Comprehensive transgender healthcare: the gender affirming clinical and public health model of Fenway health. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 92(3), 584–92. Doi: 10.1007/s11524-015-9947-2
- Rott, H. (2014). Prevention and treatment of Venous thromboembolism during HRT: current perspectives. *International Journal of General Medicine*, 7, 433–440. Doi: 10.2147/IJGM.S46310.
- Sachdeva, A., Dalton, M., Amaragiri, S. V, & Lees, T. (2014). Graduated compression stockings for prevention of Deep Vein Thrombosis. *The Cochrane Database of Systematic Reviews*. Doi: 10.1002/14651858.CD001484.

- Safiya Intiaz Shaikh & Deep Sengupta (2015). Venous Thromboembolism- Prevention, Management and Anaesthetic considerations. *International Journal of Biomedical Research*. 6(02), 58-64. Doi:10.7439/ijb.
- Savji, N., Rockman, C., Skolnick, A., Adelman, M. A., Riles, T., & Berger, J. (2012). Peripheral Vascular Disease prevalence increases dramatically with advanced age : A. *Journal of the American College of Cardiology*, 59(13), E2107. Doi: 10.1016/S0735-1097(12) 62108-1.
- Singh, R., Muzzafar, K., Bhat, K. A., Ghani, A., & Ali, N. (2015). Incidence of Deep Vein Thrombosis in patients undergoing a major lower limb surgery in tertiary care centre of North India., 3(9), 1073–1077.
- Smit Shah., Rushay Bhalodia., Krunal Patel., Golwala.,(2015). Prevalence of DVT with lower limb trauma patients. *International Journal of Biomedical and Advance Research*. 6(1), Doi: 10.7439/ ijbar.
- Spyropoulos, A. C., Mcginn, T., & Khorana, A. A. (2012). The use of weighted and scored risk assessment models for Venous thromboembolism, (2), 1072–1076. Doi: 10.1160/TH12-07-0508.
- Stasinopoulos Dimitrios., Manias Pantelis., Stasinopoulous Kalliopi., (2012). Comparing the effects of eccentric training with eccentric training and static stretching exercises in the treatment of patellar tendinopathy. *Journal of Clinical Rehabilitation*. 26(5), Doi: 10.1177/0269215511411114.
- Subbiah, R., Aggarwal, V., & Bashir, R. (2015). Compression stockings use to prevent post thrombotic syndrome in DVT patients: a meta-analysis of randomized control studies. *Journal of the American College of Cardiology*, 65(10), A2054. Doi: 10.1016/S0735-1097(15) 62054-X.
- Torbicki Adam et.al, (2014). Guidelines on the diagnosis and management of Pulmonary Embolism. *European Heart Journal*. Doi: 10.1093/eurheartj/ehu 283.
- Walsh David & Hendrickson Sherry. (2013). Transgender related content in Nursing Programs. *Journal of Chemical Information and Modeling*, 53, 1689–1699. Doi:10.1017/CBO9781107415324.004.
- Wierckx et.al, (2013). Prevalence of CVD and cancer during cross-sex hormone therapy in a large cohort of Transpersons. *European Journal of Endocrinology*. 169, 471-478. Doi: 10.1530/EJE-13-0493
- Weinand, J. D., & Safer, J. D. (2015). Hormone therapy in transgender adults is safe with provider supervision; A review of hormone therapy sequelae for transgender

- individuals. *Journal of Clinical and Translational Endocrinology*, 2(2), 55–60. Doi: 10.1016/j.jcte.2015.02.003.
- Wu C., Grandi, S., Fillion, K., Abenhaim, H., Joseph, L., & Eisenberg, M. (2013). Drospirenone-containing oral contraceptive pills and the risk of venous and arterial thrombosis: a systematic review. *BJOG: An International Journal of Obstetrics & Gynaecology*, 120(7), 801–811. Doi: 10.1111/1471-0528.12210.
- Yang Genyan., Staercke De Christine., Hooper Craig. (2012). The effects of obesity on VTE. *The Open Journal of Preventive Medicine*. 2(4), 499-509, Doi: 10.4236/opjpm.2012-24069
- Yeo W.X. Danson et.al, (2015). Incidence of VTE and its Pharmacological Prophylaxis in Asian General Surgery Patients. *World Journal of Surgery*. 39 (1), 150-157.
- Yong Sung Won et.al, (2014). Incidence and Clinical characteristics of DVT after Total Knee Arthroplasty with DVT Chemoprophylaxis. *World Journal of Cardio-Vascular Diseases*. 4, 531-538, Doi: 10.4236/wjcd.2014.411064
- Zhu Teinan., Martinez Isabelle., Emmerich Joseph., (2009). Venous Thrombo-embolism – risk factors for recurrence. *Journal of American Heart Association*. 29, 298-310. Doi: 10.1161/ATVBAHA.108.182428.
- Zobeiri M., & Najafi F. (2011). Prophylaxis for Deep vein Thrombosis : Knowledge and practice of surgeons, 27(1), 16–20.
- Zoller Bengt., (2015). Family history of Venous Thrombo-embolism as a risk factor and genetic research tool. *Journal of Thrombosis and Haemostasis*. 114, 809-900, Doi: 10.1160/TH15-04-0306.

#### **INTERNET RESOURCES:**

- Asscheman et.al., (2014) Venous Thromboembolism as a complication of cross sex hormone treatment of MTF transsexuals. *Journal of Andrologia*. Retrieved from [www.ncbi.nlm.nih.gov/pubmed/23944849](http://www.ncbi.nlm.nih.gov/pubmed/23944849).
- Asschemann et.al., (2011) A Long term follow up study of Mortality in Transsexuals receiving treatment with cross sex hormones. *European Journal of Endocrinology*. Retrieved from [www.ncbi.nlm.nih.gov/pubmed/21266549](http://www.ncbi.nlm.nih.gov/pubmed/21266549)
- Cecilia Dhejne et.al, (2011) Long term follow up of Transsexual persons undergoing Sex Reassignment Surgery. *PLOS Journals*. Retrieved from [Journals.plos.org/plosone/article](http://Journals.plos.org/plosone/article).

- Fidelindo Linn., et.al (2013). Caring for older Lesbian, Gay, Bisexual and Transgender adults. American Nurses Association. Retrieved from [www.americannurse.com](http://www.americannurse.com)
- Joshua D. Safer., Ivy Gardner. H (2013). Progress on the road to better medical care for transgender patients. *Journal of Reproductive Endocrinology*. Retrieved from [www.ncbi.nlm.nih.gov/pubmed/24468757](http://www.ncbi.nlm.nih.gov/pubmed/24468757).
- Lewis D.Sarah., (2014). Hormone Therapy and Safety. *Journal of Transcience project*. Retrieved from [www.transcienceproject.org](http://www.transcienceproject.org)
- Roberts K. Tiffany., Fantz R. Corinne (2014). Barriers to quality health care for the transgender population. Retrieved from [www.ncbi.nlm.nih.gov/pubmed/24560655](http://www.ncbi.nlm.nih.gov/pubmed/24560655).
- Soumya Elizabeth.,(2014). Indian Transgender Health Care Challenges. Retrieved from [www.aljazeera.com/indepth/features/healthcare-distant-india-transgenders](http://www.aljazeera.com/indepth/features/healthcare-distant-india-transgenders).

#### **PUBLISHED REPORTS:**

- Building a movement through grassroot support. *World Thrombosis Day, 2015* Impact report. Retrieved from [www.WorldThrombosisDay.Org](http://www.WorldThrombosisDay.Org).
- Census Report on Hijras or Eunuchs. *Times of India*, 2014
- Global Atlas On Cardio-vascular Disease Prevention and Control. *World Health Organization. World Heart Federation. World Stroke Organisation*, 2011.
- Guidelines for the management of the patients with peripheral artery disease. *American Heart Association*, 2011. Retrieved from <http://circ.ahajournals.org>
- Immobility, circulatory problems and DVT. *World Health Organisation*, 2015.
- Lloyd-jones et.al. (2010). Heart Disease and Stroke Statistics. *American Heart Association*. Retrieved from <http://circ.ahajournals.org>
- Report on Health and Health Care. (2010). National Transgender Discrimination Survey (NTDS), Retrieved from <http://www.thetaskforce.org/downloads/resource-and-tools/ntds-report-on-health.pdf>
- Report on mortality and morbidity rates of DVT and PE. *Medical News Today*. 2013
- Report on Health care Associated VTE in USA. *Centre for Disease Control and prevention*, 2015
- Risk of DVT among long duration air travellers. *WHO Research into the Global Hazards of Travel (WRIGHT)*, 2015
- Report on Prolonged inactivity and DVT. *WRIGHT*, 2015.

Report on HRT risk among elder eunuchs. *Institute Of Medicine (IOM)*, 2014.

Report on Healthy people – Transgender Health Fact Sheet. *Healthy People 2020*, 2010



# *APPENDICES*

**APPENDIX – C****LETTER SEEKING EXPERT’S OPINION FOR CONTENT VALIDITY**

From

**Ms. Monicka James Victor**

M.Sc (N) I year,  
Omayal Achi College of Nursing,  
Puzhal, Chennai-600 066.

To

Respected Sir/Madam,

**Sub: Requisition for expert opinion for content validity.**

I am **Ms. Monicka James Victor**, doing my M.sc Nursing I year specializing in Medical Surgical Nursing at Omayal Achi College of Nursing during May 2014-2016, under the guidance of Dr. Mrs. Kanchana, Principal and Research Director, ICCR and Speciality Guide Mrs. Grace Lydia.M. As a part of my research project to be submitted to The Tamil Nadu Dr.M.G.R. Medical University, Guindy December 2014 session and in partial fulfillment of the University requirement for the award of M.Sc (N) degree, I am conducting **“A quasi experimental study to assess the effectiveness of Stop Clot Package on knowledge and skill regarding prevention of Deep Vein Thrombosis among eunuchs at selected settings, Chennai”2015.**

I have enclosed my data collection and intervention tool for your expert guidance and validation. Kindly do the needful.

Thanking you,

Yours faithfully,  
**( Monicka J.V.)**

**ENCLOSURES:**

1. Research proposal
2. Data collection tool
3. Intervention tool
4. Content validity form
5. Certificate for Content Validity.

## LIST OF EXPERTS FOR CONTENT VALIDITY

### MEDICAL EXPERTS

- 1. Dr. (Mr) V. Devagourou,**  
Additional Professor,  
Department of Cardio-Thoracic & Vascular Surgery (CTVS),  
All India Institute of Medical Sciences (AIIMS),  
Ansari Nagar, New Delhi – 110029.
  
- 2. Dr. Sathya Selvam,**  
Senior Resident,  
Department of Cardio-Thoracic & Vascular surgery (CTVS),  
All India Institute of Medical Sciences (AIIMS),  
Ansari Nagar, New Delhi – 110029.
  
- 3. Dr. (Mr) R. Jaganathan,**  
Additional Chief Health Director,  
Department of Cardio-Thoracic & Vascular Surgery,  
Southern Railway Headquarters Hospital,  
Ayanavaram, Chennai - 600 023, Tamil Nadu.
  
- 4. Dr. (Mr) Ganapathy Subramaniam**  
Consultant Pediatric and Adult,  
Congenital Cardiac Surgeon,  
Department of Cardio-Thoracic & Vascular Surgery,  
Fortis Malar Hospital,  
Adyar, Chennai - 600 020, Tamil Nadu.

**PHYSIOTHERAPIST**

- 5. Mrs. Swapna Susan Simon,**  
Consultant Physiotherapist,  
Healing Touch - Physiotherapy and Pain Relief Centre,  
Jawahar Nagar, Chennai -600 082

**MEDICAL SURGICAL NURSING EXPERTS**

- 6. Prof. Mrs. Malarvizhi,**  
Vice Dean,  
Head of the Department,  
Medical Surgical Nursing,  
Pondicherry Institute of Medical Sciences ( PIIMS),  
Pondicherry -14.
- 7. Mrs. Chandralekha,**  
Associate Professor,  
Indirani College of Nursing,  
Puducherry-605 102
- 8. Mr. L. Gopi Chandran,**  
Lecturer,  
College of Nursing,  
All India Institute of Medical Sciences (AIIMS),  
Ansari Nagar, New Delhi – 110029

**APPENDIX – H**  
**INFORMED CONSENT REQUISITION FORM**

Good morning,

I am Ms. Monicka James Victor, studying M.Sc. (Nursing) II year in Omayal Achi College of Nursing, Puzhal, Chennai. As a partial fulfillment of my course, I am conducting **“A quasi experimental study to assess the effectiveness of Stop Clot Package on knowledge and skill regarding prevention of Deep Vein Thrombosis among eunuchs at selected settings, Chennai” 2015**. So I kindly request you to participate in this study and co-operate with me by giving answer to my questions. I assure you that your responses will be kept confidential and this participation will be useful for your healthy life.

Thank you

MONICKA.J.V.

## INFORMED WRITTEN CONSENT FORM

I understand that I am being asked to participate in a research study conducted by Ms. Monicka J.V. M.Sc. Nursing student of Omayal Achi College of Nursing, Puzhal, Chennai. This research study will evaluate **“A quasi experimental study to assess the effectiveness of Stop Clot Package on knowledge and skill regarding prevention of Deep Vein Thrombosis among eunuchs at selected settings, Chennai”**. If I agree to participate in the study, I will be interviewed; I understand that there is no risk associated with this study .

I realize that the knowledge gained from this study may help either me or other people in the future. I realize that my participation in this study is entirely voluntary and I may withdraw from the study at any time. I wish if I decide to discontinue my participation in this study, I will continue to be treated in the usual and customary fashion.

I understand that all study will be kept confidential. However, this information may be used in nursing publication and presentations. If I need to, I can contact Ms. Monicka.J.V. M.Sc. Nursing student, Omayal Achi College of Nursing, No.45, Ambattur Road, Puzhal, Chennai, Phone no – 044 26501617, Personal no – 9790938206 at any time during the study.

The study has been explained to me. I have read and understood the consent form, my entire question has been answered and I agree to participate. I understand that I will be given a copy of this signed consent form.

\_\_\_\_\_  
Signature of the sample

\_\_\_\_\_  
date

\_\_\_\_\_  
Signature of the investigator

\_\_\_\_\_  
date

## முன் அறிவிப்பு ஒப்பந்த படிவம்

உமையாள் ஆச்சி செவிலியர் கல்லூரியில் முதுநிலை இரண்டாம் ஆண்டு பயிலும் மாணவி மோனிக்கா. ஜே.வி அவர்களால் நடத்தபெறும் இந்த ஆய்வில் என்னை பங்கேற்க கேட்டுக் கொண்டதை நான் ஏற்றுக்கொள்கிறேன். இந்த ஆய்வுக்கு நான் ஒப்புக் கொண்டதால், இதனைத் தொடர்ந்து என்னிடம் **இரத்தக்குழாய் அடைப்பு பற்றிய கேள்விகள் கேட்கப்பட்டு அதன் தடுப்பு முறைகள் பற்றிய கல்வியும் கற்பிக்கப்படும் என்பதை நான் அறிவேன்.**

நான் யாருடைய கட்டாயத்தின் பெயரிலும் ஆய்வில் பங்கு கொள்ளவில்லை என்பதையும், தேவைப்பட்டால் நான் ஆய்விலிருந்து விலகிக்கொள்ளவும் எனக்கு முழு உரிமை உண்டு என்பதையும் அறிவேன்.

என்னைப் பற்றிய அனைத்து தகவல்களும் இரகசியமாக பாதுகாக்கப்படும் என்பதை அறிவேன். தேவைப்படும்போது ஆய்வின் முடிவுகள் செவிலியர் சார்ந்த பத்திரிகைகளிலும், கருத்தரங்குகளிலும் வெளியிட முழு சம்மதமும் அளிக்கிறேன்.

பங்குகொள்ளுபவரின்

கையொப்பம்/கைரேகை:

தேதி:

ஆய்வுநடத்துபவரின் கையொப்பம்:

தேதி:

## APPENDIX – I

### DATA COLLECTION TOOL

#### SECTION-A: DVT ASSESSMENT CHECKLIST

S.No	CLINICAL PARAMETER SCORE	YES	NO
1.	Habit of smoking		
2.	Recently bedridden / Immobilization of the lower extremities for > 3 days or major surgery < 4 weeks		
3.	Calf muscle pain on dorsiflexion of foot		
4.	Localized tenderness along the distribution of the deep venous system		
5.	Entire leg swelling		
6.	Calf swelling >3cm compared with the asymptomatic leg		
7.	Pitting edema( greater in the symptomatic leg)		
8.	Red or discolored skin on the leg		
9.	Increased warmth in the area of swelling/pain (in the symptomatic leg)		
10.	Collateral superficial veins ( non-tortuous /dilated )		

#### Scoring key:

Each “yes” was awarded a score of ‘1’ and each “no” was awarded ‘0’. The overall and the maximum score is 10 and minimum score is 0. The raw data was computed to interpret the probability of DVT.

#### Interpretation of DVT assessment checklist

Score	Inference – Probability for DVT
> 3	High probability
1 or 2	Moderate probability
0	Low probability



Sample No.

**SECTION-B: DEMOGRAPHIC DATA****INSTRUCTIONS:** Kindly tick/fill in your data to all the questions asked below.**Demographic Variables****1. Age (in years)**

- a. 21-30
- b. 31-40
- c. 41-50
- d. 51-60

**2. Educational status**

- a. Non-literate
- b. Primary school certificate
- c. Middle school certificate
- d. Higher school certificate
- e. Intermediate or post high school dip
- f. Graduate or postgraduate
- g. Profession or Honors

**3. Occupation**

- a. Unemployed
- b. Unskilled worker
- c. Semi-Skilled worker
- d. Skilled worker
- e. Clerical, shop-owner
- f. Semi-profession
- g. Profession

**4. Nature of activity**

- a. Prolonged standing (>8-10hrs/day)
- b. Prolonged sitting (>8-10 hrs/day)
- c. Long distance travel (>14hrs/day)

**5. Eunuch's family monthly income (in rupees)**

- a.  $\leq 1802$
- b. 1803-5386
- c. 5387-8988

- d. 8989-13494
  - e. 13495-17999
  - f. 18000-36016
  - g.  $\geq 36017$
- 6. Eunuch's family size (no. of persons)**
- a. 1
  - b. 1-2
  - c. 3-4
  - d. 5-6
  - e.  $>6$

### **Lifestyle Variables**

**7. Diet pattern**

- a. Lacto-vegetarian
- b. Lacto-ova vegetarian
- c. Non-vegetarian

**8. Type of food and frequency of food intake (no. of days/week)**

**i) Junk foods**

- a. Nil
- b. 1-2
- c. 3-4
- d. 5-6
- e. daily

**ii) Deep fried items**

- a. Nil
- b. 1-2
- c. 3-4
- d. 5-6
- e. daily

**iii) Meat and poultry products**

- a. Nil
- b. 1-2
- c. 3-4

- d. 5-6
- e. daily

**9. Any personal habits**

**i) Smoking/tobacco use**

Yes/No

If 'yes' specify the number of packs/day

- a) <3
- b) 4-6
- c) 7-9
- d)  $\geq 10$
- e) daily

**ii) Alcohol use**

Yes/No

If 'yes', quantity in ml

- a) <100 ml
- b) 100-150 ml
- c) 151-200ml
- d) >200 ml

Frequency (days/wk)

- a) 1-2
- b) 3-4
- c) 5-6
- d) daily

**iii) Type of drinking**

- a) Non-drinker
- b) Social drinker
- c) Daily drinker
- d) Binge drinker
- e) Addicted drinker

**iv) Drug abuse**

Yes/No

**Personal Variables****10. i) Types of Hormonal Replacement Therapy (HRT)**

- a. Estrogen only
- b. Progesterone only
- c. Cyclical (estrogen followed by progesterone or vice versa)
- d. Continuous combined (both estrogen and progesterone)

**ii) Dose (mg)**

- a. 1
- b. 2
- c. 3
- d. >3

**iii) Frequency (days/wk)**

- a. once a day
- b. twice a day
- c. thrice a day

**iv) Duration (yrs)**

- a. 1-2
- b. 3-4
- c. 5-6
- d. >6

**11. HRT users in eunuch's family ( no. of persons)**

- a. None
- b. 1-2
- c. 3-4
- d. 5-6
- e. >6

**Anthropometric Variables****12. Height (in cm)\_\_\_\_\_**

- a. 150-155
- b. 156-160
- c. 161-165

**13. Weight (in Kg) \_\_\_\_\_**

- a. <50
- b. 51-60
- c. 61-70
- d. 71-80
- e. 81-90
- f. >90

**14. Body Mass Index (BMI) (in kg/m<sup>2</sup>) \_\_\_\_\_**

- a. <18.5
- b. 18.5-24.9
- c. 25-29.9
- d. >30 or greater

பிரிவு - ஆ : தகவலாளரின் விவரம்

கீழ் வரும் கேள்விகளுக்கு குறியீடுக அல்லது நிரப்புக :

**அடிப்படைப் தகவல்கள்**

**1. வயது (வருடங்களில்)**

அ. 21-30

ஆ. 31-40

இ. 41-50

ஈ. 51-60

**2. கல்வி தகுதி**

அ. படிக்காதவர்

ஆ. ஆரம்பப்பள்ளி சான்றிதழ்

இ. இடைநிலைக்கல்வி சான்றிதழ்

ஈ. மேல்நிலைக் கல்வி

உ. இடைநிலை அல்லது மேல்நிலை, டிப்ளமோ

ஊ. பட்டதாரி அல்லது முதுகலை

எ. தொழில் அல்லது மரியாதை மேற்ப்பாடுகள்

**3. தொழில்**

அ. வேலையற்றவர்

ஆ. ஆற்றம் அற்ற தொழிலாளி

இ. அரை ஆற்றம் பெற்ற தொழிலாளி

ஈ. ஆற்றம் பெற்ற தொழிலாளி

உ. எழுத்தர், கடை உரிமையாளர்

ஊ. அரை தொழில் முறை

எ. தொழில் முறை

**4. தொழிலின் தன்மை**

அ. நீண்ட நேரம் நின்று கொண்டு இருத்தல் (>8-10 நேரம்/ நாள்)

ஆ. நீண்ட நேரம் அமர்ந்திருத்தல் (>8-10 நேரம்/ நாள்)

இ. நீண்ட தூரம் பயணம் புரிபவர் (>14 நேரம்/ நாள்)

5. திருநங்கையரின் மாத வருமானம் ( ரூபாயில் )

அ.  $\leq 1802$

ஆ. 1803-5386

இ. 5387-8988

ஈ. 8989-13494

உ. 13495-17999

ஊ. 18000-36016

எ.  $\geq 36017$

6. திருநங்கையரின் குடும்ப நபர்களின் எண்ணிக்கை

அ. 1

ஆ. 1-2

இ. 3-4

ஈ. 5-6

உ... >6

வாழ்க்கை நிலை வேறுபாடுகள்

7. உணவு முறை

அ. சைவம்

ஆ. சைவம் மற்றும் அசைவம்

இ. அசைவம்

8. உணவின் வகை மற்றும் அளவு (நாட்கள்/வாரம்)

i) துரித உணவு

அ. இல்லை

ஆ. 1-2

இ. 3-4

ஈ. 5-6

உ. தினமும்

ii) எண்ணெயில் நன்கு வறுத்த உணவு

அ.. இல்லை

ஆ. 1-2

இ. 3-4

ஈ. 5-6

உ. தினமும்

iii) இறைச்சி

அ. இல்லை

ஆ. 1-2

இ. 3-4

ஈ. 5-6

உ. தினமும்

9. பழக்க வழக்கங்கள்

i) புகைபிடித்தல்/ புகையிலை எடுத்தல்

ஆம்/இல்லை

ஆம் என்றால் எத்தனை பாக்கெட்/நாள்

அ. <3

ஆ. 4-6

இ. 7-9

ஈ.  $\geq 10$

உ. தினமும்

ii) மது அருந்துதல்

ஆம்/இல்லை

ஆம் என்றால் எடுத்து கொள்ளும் அளவு (மீ.லி)

அ. <100

ஆ. 100-150

இ. 151-200



ஈ. >200

**எத்தனை முறை (நாட்கள்/வாரம்)**

அ. 1-2

ஆ. 3-4

இ. 5-6

ஈ. தினமும்

**iii) மது அருந்தும் முறை**

அ. மது அருந்தாதவர்

ஆ. விழாக்களில் மட்டும் மது அருந்துபவர்

இ. தினமும் மது அருந்துபவர்

ஈ. மது அருந்துதற்கு அடிமையானவர்

**iv) போதை மருந்து பழக்கம்**

ஆம்/இல்லை

**தனிப்பட்ட வேறுபாடுகள்**

**10.i) ஹார்மோன் மாற்று சிகிச்சையின் வகை**

அ. ஈஸ்ட்ரோஜன் மட்டும்

ஆ. புரோஜெஸ்டிரோன் மட்டும்

இ. சுழற்சிமுறை (ஈஸ்ட்ரோஜன் அடுத்து புரோஜெஸ்டிரோன் எடுத்து கொள்ளுதல் )

ஈ. தொடர்ந்து சேர்ந்து எடுத்தல் (ஈஸ்ட்ரோஜன் மற்றும் புரோஜெஸ்டிரோன்)

**ii) மருந்து அளவு (மில்லிகிராம்)**

அ. 1

ஆ. 2

இ. 3

ஈ. >3

**iii) எத்தனை முறை**

அ. ஒரு முறை

ஆ. இரண்டு முறை

இ. மூன்று முறை

**(iv) கால அளவு (வருடங்களில்)**

அ.1-2

ஆ.3-4

இ. 5-6

ஈ. >6

**11. திருநங்கையரின் குடும்பத்தில் ஹார்மோன் மாற்று சிகிச்சை எடுத்து**

**கொள்பவரின் எண்ணிக்கை**

அ. இல்லை

ஆ. 1-2

இ. 3-4

ஈ. 5-6

உ. >6

**அடிப்படை உடல் குறியீட்டு அளவீடு (அந்தரோபோமெட்ரிக் அளவீடு)**

**12. உயரம்( செ.மீ )**

அ. 150-155

ஆ. 156-160

இ. 161-165

**13. எடை (கி.லோ)**

அ. <50

ஆ. 51-60

இ. 61-70

ஈ. 71-80

உ. 81-90

ஊ. >90

14. பி.எம்.ஐ (கி/மி<sup>2</sup>)

அ. <18.5

ஆ. 18.5-24.9

இ. 25-29.9

ஈ. >30 அல்லது அதற்கும் மேல்

**SECTION-C: STRUCTURED KNOWLEDGE QUESTIONNAIRE**

**INSTRUCTION:** Please read the following items carefully and circle the most appropriate option of your choice. Answer all the items.

**A) GENERAL INFORMATION ON DEEP VEIN THROMBOSIS (DVT)**

1. DVT refers to the
  - a. formation of fluid collection in the legs
  - b. formation of plaques in the veins
  - c. formation of blood clots in the veins
  - d. formation of air collection in the thorax
  
2. DVT is otherwise called as
  - a. Classic syndrome
  - b. Economy class syndrome
  - c. Traditional syndrome
  - d. Modern syndrome
  
3. A blood clot mainly affects the large veins in the
  - a. lower leg and thigh
  - b. upper arm
  - c. forearm
  - d. pelvic floor
  
4. A transgender woman who takes estrogen may have increased risk for developing
  - a. mucus plugs
  - b. oozing wounds
  - c. stomach ulcers
  - d. blood clots
  
5. The risk of clot formation is more common among transwoman aged
  - a. above 40 yrs of age
  - b. below 40 yrs of age
  - c. above 20 yrs of age
  - d. below 20 yrs of age

**B) CAUSES AND RISK FACTORS OF DVT**

6. The most common cause of clot formation is
  - a. smoking

- b. over-eating
  - c. walking
  - d. swimming
7. The primary causes of DVT are
- a. genetic and unknown
  - b. genetic and behavioural
  - c. behavioural and unknown
  - d. environmental and genetic
8. Prolonged exposure to smoking may result in
- a. clot formation
  - b. acid formation
  - c. cement formation
  - d. fluid formation
9. The medication which increases the risk for clot formation is
- a. progesterone
  - b. testosterone
  - c. estrogen
  - d. androgen

### **C) MANAGEMENT**

10. The classical sign of DVT is
- a. joint pain
  - b. chest pain
  - c. back pain
  - d. pain or tenderness in the calf muscle or groin
11. A test which is used to confirm the presence of clot formation is
- a. X ray
  - b. DEXA scan
  - c. CT scan
  - d. PET scan
12. Application of compression stockings helps to reduce
- a. pain and swelling
  - b. muscle cramps
  - c. itching
  - d. burning sensation

13. Prolonged persistent symptoms of DVT can lead to ulcers on
  - a. abdominal muscle
  - b. forearm
  - c. pelvic muscle
  - d. calf muscle
  
14. A large clot can cause the lungs to collapse and result in
  - a. heart failure
  - b. permanent failure
  - c. multiorgan failure
  - d. temporary failure

#### **D) PREVENTIVE MEASURES**

15. The main goal for treating DVT is to prevent
  - a. bleeding
  - b. inflammation
  - c. infection
  - d. blockage in the lung artery
  
16. DVT may be reduced by
  - a. Healthy diet and exercise
  - b. Walking and drinking alcohol
  - c. Smoking and walking
  - d. Swimming and sitting
  
17. The risk of clot formation is reduced by the intake of
  - a. Red meat
  - b. Fruits and vegetables
  - c. Processed meats
  - d. Packaged foods
  
18. Blood pooling can be prevented by \_\_\_\_\_ for about 30-60 minutes.
  - a. Brisk walking
  - b. Sitting
  - c. Standing
  - d. Sleeping
  
19. Vitamin E rich foods lowers the incidence of
  - a. sugar and cholesterol levels
  - b. blood clots and cholesterol levels

- c. carbohydrate and protein levels
  - d. blood clot and protein levels
20. An effective way to prevent DVT is
- a. smoking and drinking alcohol
  - b. taking certain vitamins
  - c. wearing tight clothing
  - d. following low fat vegetarian diet
21. The stress and risk of injury to joints, muscles and tendons are relieved by
- a. static stretching exercises
  - b. calf strain exercises
  - c. rehabilitation exercises
  - d. breathing exercises
22. A regular static stretching exercise helps to minimize the
- a. nausea
  - b. indigestion
  - c. leg cramps
  - d. breast tenderness
23. Static stretching exercises can be done for at least \_\_\_\_\_ a day
- a. 5 times
  - b. 6 times
  - c. 3 times
  - d. 4 times
24. Static stretching exercises involves stretching of
- a. calf muscles
  - b. abdominal muscles
  - c. shoulder muscles
  - d. cardiac muscles
25. Ankle mobility can be maintained by
- a. Standing calf stretch
  - b. Toe-touch
  - c. Mini-squat
  - d. Wall jump

**Scoring key:**

Each correct answer was given '1' mark; whereas, wrong answers and unattended question was given '0' mark. The raw score was converted to percentage to interpret the level of knowledge, the overall score was 25, maximum score is 25 and minimum score is 0.

**Interpretation level of knowledge**

The level of knowledge was categorized as;

<b>Score</b>	<b>Level of knowledge</b>
$\leq 50\%$	Inadequate level of knowledge
51-75%	Moderate level of knowledge
$>75\%$	Adequate level of knowledge

**KEY:**

<b>1</b>	C	<b>6</b>	A	<b>11</b>	C	<b>16</b>	A	<b>21</b>	A
<b>2</b>	B	<b>7</b>	B	<b>12</b>	A	<b>17</b>	B	<b>22</b>	C
<b>3</b>	A	<b>8</b>	A	<b>13</b>	D	<b>18</b>	A	<b>23</b>	C
<b>4</b>	D	<b>9</b>	C	<b>14</b>	A	<b>19</b>	B	<b>24</b>	A
<b>5</b>	A	<b>10</b>	D	<b>15</b>	D	<b>20</b>	D	<b>25</b>	C



## பிரிவு இ

### வடிவமைக்கப்பட்ட வினாத்தாள்

கீழே கொடுக்கப்பட்டுள்ள அனைத்து வினாக்களுக்கும் நன்றாக  
படித்து விட்டு உங்கள் பதில்களை வட்டமிட்டு காண்பிக்கவும்.

**அ) இரத்தக்குழாய் அடைப்பு பற்றிய பொதுதகவல்கள்**

1. இரத்தக்குழாய் அடைப்பு என்றால் என்ன?

அ) கால்களில் நீர் சேருதல்.

ஆ) இரத்த நாளங்களில் கொழுப்பு உருவாதல்.

இ) இரத்த நாளங்களில் இரத்தக்கட்டு உருவாதல்.

ஈ) மார்புக் கூட்டில் காற்று உருவாகுதல்.

2. இரத்தக்குழாய் அடைப்பை இப்படியும் அழைக்கலாம்.

அ) முதல்தர நோய்

ஆ) சிக்கன நோய்

இ) பரம்பரை நோய்

ஈ) நவீன நோய்

3. இரத்தக்கட்டு பெரும்பாலும் உடலில் எந்த பகுதியை தாக்குகிறது?

அ) தொடை மற்றும் கால்களின் கீழ்பகுதி

ஆ) கைப்பகுதி

இ) முடிங்கை

ஈ) இடுப்பு பகுதி

4. ஈஸ்ட்ரோஜன் எடுத்துக்கொள்ளும் திருநங்கைக்கு அதிகரிக்கும்

ஆபத்து.

அ) சளி

ஆ) காயங்களில் நீர் வடிதல்

இ) வயிற்றுப்புண்

ஈ) இரத்தக்கட்டு உருவாகுதல்

5. திருநங்கைகளில் பின்வரும் எந்த வயதினாரிடையே

இரத்தக்கட்டு அதிகம் காணப்படுகிறது.

அ) 40 வயதிற்கு மேல்

ஆ) 40 வயதிற்கு கீழே

இ) 20 வயதிற்கு மேல்

ஈ) 20 வயதிற்கு கீழே

ஆ) இரத்தக்குழாய் அடைப்பு ஏற்படுவதற்கான காரணங்கள் மற்றும்

ஆபத்துக்கள்

6. இரத்தக்கட்டுகள் ஏற்படுவதற்கான பொதுவான காரணம்

அ) புகைப்பிடித்தல்

ஆ) அதிகமாக சாப்பிடுதல்

இ) நடைபயிற்சி

ஈ) நீச்சல் பயிற்சி

7. இரத்தக்குழாய் அடைப்பு ஏற்பட முக்கிய காரணிகள்

அ) மரபணு மற்றும் அறியப்படாத காரணங்கள்

ஆ) மரபணு மற்றும் பழுக்கவாழ்க்கை

இ) பழுக்கவாழ்க்கை மற்றும் அறியப்படாத காரணங்கள்

ஈ) சுற்றுப்புற சூழல் மற்றும் மரபணு

8. தொடர்ந்து புகைப்பிடிப்பதினால் ஏற்படும் விளைவுகள்

அ) இரத்தக்கட்டு உருவாகுதல்

ஆ) அமிலம் உருவாகுதல்

- இ) சிமெண்ட் உருவாகுதல்
- ஈ) நீர் உருவாகுதல்
9. பின்வரும் எந்த மாத்திரையை உட்கொள்வதால் இரத்தக்கட்டு நோய் உருவாக வாய்ப்புகள் அதிகம்.
- அ) புரோஜெஸ்டிரோன்
- ஆ) டெஸ்டோஸ்டிரோன்
- இ) ஈஸ்ட்ரோஜன்
- ஈ) ஆண்ட்ரோஜன்
- இ) சிகிச்சை முறைகள்
10. இரத்தக்கட்டு வருவதற்கான முதல்தர அறிகுறிகள்
- அ) மூட்டு வலி
- ஆ) நெஞ்சு வலி
- இ) இடுப்பு வலி
- ஈ) பின்னங்கால் தசை பகுதியில் அல்லது தொடைப்பகுதியில் வலி
11. எந்த பரிசோதனை செய்வதன் மூலம் இரத்தக்கட்டு இருப்பதை உறுதிசெய்யலாம்
- அ) எக்ஸ்ரே
- ஆ) டெக்ஸா ஸ்கேன்
- இ) சி.டி. ஸ்கேன்
- ஈ) டபிள் ஸ்கேன்
12. அழுத்தம் தரும் காலுறைகளை அணிவதன் மூலம் ஏற்படும் நன்மைகள்
- அ) வலி மற்றும் வீக்கம் குறைதல்
- ஆ) தசைப்பிடிப்பு

- இ) அரிப்பு எடுத்தல்
- ஈ) ளிகின்ற உணர்வு
13. தொடர்ந்து நீண்டகாலமாக இருக்கும் இரத்தக்கட்டால் ஏற்படும் பின்விளைவுகள்
- அ) வயிற்று தசை பகுதியில் சீழ் வடிதல்
- ஆ) கை தசைகளில் சீழ் வடிதல்
- இ) இடுப்பு தசைகளில் சீழ் வடிதல்
- ஈ) பின்னங்கால் தசையில் சீழ் வடிதல்
14. பெரிய இரத்தக்கட்டு நுரையீரலில் உருவாவதால் ஏற்படும் பின்விளைவு
- அ) இதயம் பலவீனமாகும்
- ஆ) நுரையீரல் நிரந்தரமாக செயலிழப்பது
- இ) பல உறுப்புகள் சேர்ந்து செயலிழப்பது
- ஈ) நுரையீரல் தற்காலிக செயலிழப்பு
- ஈ) தடுக்கும் வழிமுறைகள்
15. இரத்தக்குழாய் அடைப்பு சிகிச்சையின் முக்கிய நோக்கம்
- அ) இரத்தக்கசிவை தடுத்தல்
- ஆ) வீக்கம் வராமல் தடுத்தல்
- இ) நோய்தொற்று ஏற்படாமல் தடுத்தல்
- ஈ) நுரையீரலில் அடைப்பு ஏற்படாமல் இருத்தல்
16. இரத்தக்குழாய் அடைப்பை பின்வரும் முறையினால் குறைக்கலாம்
- அ) ஆரோக்கிய உணவு மற்றும் உடற்பயிற்சி
- ஆ) நடைபயிற்சி மற்றும் மது அருந்துதல்

- இ) புகைப்பிடித்தல் மற்றும் நடைபயிற்சி
- ஈ) நீச்சல் பயிற்சி மற்றும் உட்கார்ந்திருத்தல்
17. பின்வரும் எந்த வகையான உணவுகளை சேர்த்துக் கொண்டால் இரத்தக்கட்டு ஏற்பட வாய்ப்பு குறைவு
- அ) இறைச்சி
- ஆ) பழங்கள் மற்றும் காய்கறிகள்
- இ) பதப்படுத்தப்பட்ட இறைச்சி
- ஈ) பாக்கெட்டில் அடைக்கப்பட்ட உணவுகள்
18. இரத்தம் உறையாமல் இருக்க மேற்கொள்ளும் பயிற்சி
- அ) சுறுசுறுப்பான நடைபயிற்சி (30-60 நிமிடம்)
- ஆ) நின்று கொண்டு இருத்தல் (30-60 நிமிடம்)
- இ) அமர்ந்து கொண்டு (30-60 நிமிடம்) இருத்தல்
- ஈ) உறங்குதல் (30-60 நிமிடம்)
19. வைட்டமின் ஈ நிறைந்த உணவை உட்கொண்டால்
- அ) சர்க்கரை மற்றும் கொழுப்பின் அளவு குறைகிறது.
- ஆ) இரத்தக்கட்டு மற்றும் கொழுப்பின் அளவு குறைகிறது.
- இ) மாவுசத்து மற்றும் புரதத்தின் அளவு குறைகிறது.
- ஈ) இரத்தக்கட்டு மற்றும் புரதத்தின் அளவு குறைகிறது.
20. இரத்தக்குழாய் அடைப்பு வராமல் தடுக்கும் பயனான வாழிமுறை
- அ) புகைப்பிடித்தல் மற்றும் மது அருந்துதல்
- ஆ) குறிப்பிட்ட வைட்டமின்களை எடுத்துக்கொள்ளுதல்
- இ) இறுக்கமான உடை அணிதல்
- ஈ) கொழுப்பு குறைந்த உணவை உட்கொள்ளுதல்

21. தசை, மூட்டு பகுதியில் ஏற்படும் அழுத்தம் மற்றும் காயங்கள் பின்வரும் பயிற்சியால் தடுக்கலாம்.

- அ) நிலையான நீட்டும் உடற்பயிற்சி
- ஆ) பின்னங்கால் தசை பயிற்சி
- இ) மறுவாழ்வு பயிற்சி
- ஈ) சுவாச பயிற்சி

22. முறையான உடற்பயிற்சி செய்வதால் உடலில் ----- குறையும்

- அ) குமட்டல்
- ஆ) அஜீர்ணம்
- இ) கால் சதை பிடிப்பு
- ஈ) மார்பக வலி

23. நிலையான நீட்டும் உடற்பயிற்சியை நாள் ஒன்றுக்கு எத்தனை முறை மேற்கொள்ள வேண்டும்?

- அ) 5 முறை
- ஆ) 6 முறை
- இ) 3 முறை
- ஈ) 4 முறை

24. நிலையான நீட்டும் உடற்பயிற்சி மேற்கொண்டால் ----- பகுதி வலுவாகும்.

- அ) பின்னங்கால் தசை
- ஆ) வயிற்றின் தசை
- இ) தோள் பட்டையின் தசை
- ஈ) இருதயத்தின் தசை

25. குதிகால் சீராக இயங்க உதவும் பயிற்சி-----

அ) நின்றுகொண்டு பின்னங்காலை நீட்டுதல்

ஆ) நுனிவிரல்களை தொடுதல்

இ) அரைமண்டியில் உட்காருதல்

ஈ) சுவர் ஏறி குதித்தல்

**SECTION-D: OBSERVATIONAL CHECKLIST****CHECKLIST FOR EVALUATION OF SKILL IN DOING STATIC STRETCHING EXERCISES**

<b>S.No.</b>	<b>ACTIVITY</b>	<b>YES</b>	<b>NO</b>
<b>1.</b>	<b>TOWEL STRETCH</b>		
	i) Client wraps the towel around the ball of foot		
	ii) Gently pulls the towel towards the body to keep the knee straight		
	iii) Holds the stretched position for 15-30 seconds and then slowly releases the stretch		
<b>2.</b>	<b>STANDING CALF STRETCH</b>		
	i) Positions the hands against the wall at about eye level		
	ii) Keeps one leg with the heel on the floor, and the other leg forward		
	iii) Turns the back foot slightly inwards		
<b>3.</b>	<b>RESISTED ANKLE PLANTAR FLEXION</b>		
	i) Lies in supine position with knee extended and foot in neutral position		
	ii) Holds the end of the tubing in both hands		
	iii) Places the elastic tubing around the foot and press the foot downwards		
<b>4.</b>	<b>HEEL RAISE</b>		
	i) Stands with three feet a few inches apart, with hands lightly resting on a counter or a chair		
	ii) Slowly raises the heels off the floor while keeping the knees straight		
	iii) Holds for about 5-6seconds and then slowly lowers the heels to the floor		
<b>5.</b>	<b>MINISQUAT</b>		
	i) Keeps the feet forward, hands apart and flexes the body at 45 degrees		
	ii) Maintains shoulder, hip and heel in a straight line		
	iii) Holds this position for about 10-15 seconds		



**Scoring key:**

The items were rated as '1' when it was performed correctly and '0' for not performing it appropriately. The raw score was converted to percentage to interpret level of practice, the overall score is 15, maximum score is 15 and minimum score is 0.

**Interpretation level of skill**

The overall score percentage was categorized as

<b>Score</b>	<b>Level of skill</b>
$\leq 50\%$	Needs improvement in skill
51-75%	Fair skill
$>75\%$	Good skill

**APPENDIX – J**  
**CODING FOR DEMOGRAPHIC VARIABLES**

<b>DEMOGRAPHIC VARIABLES</b>	<b>CODE NO.</b>
<b>1. Age (in years)</b>	
a. 21-30	1
b. 31-40	2
c. 41-50	3
d. 51-60	4
<b>2. Educational status</b>	
a. Non-literate	1
b. Primary school certificate	2
c. Middle school certificate	3
d. Higher school certificate	4
e. Intermediate or post high school dip	5
f. Graduate or postgraduate	6
g. Profession or Honors	7
<b>3. Occupation</b>	
a. Unemployed	1
b. Unskilled worker	2
c. Semi-Skilled worker	3
d. Skilled worker	4
e. Clerical, shop-owner	5
f. Semi-profession	6
g. Profession	7
<b>4. Nature of activity</b>	
a. Prolonged standing (>8-10hrs/day)	1
b. Prolonged sitting (>8-10 hrs/day)	2
c. Long distance travel (>14hrs/day)	3

**5. Eunuch's family monthly income (in rupees)**

a. $\leq 1802$	1
b. 1803-5386	2
c. 5387-8988	3
d. 8989-13494	4
e. 13495-17999	5
f. 18000-36016	6
g. $\geq 36017$	7

**6. Eunuch's family size (no. of persons)**

a. 1	1
b. 1-2	2
c. 3-4	3
d. 5-6	4
e. $>6$	5

**LIFESTYLE VARIABLES****7. Diet pattern**

a. Lacto-vegetarian	1
b. Lacto-ova vegetarian	2
c. Non-vegetarian	3

**8. Type of food and frequency of food intake (no. of days/week)****i) Junk foods**

a. Nil	1
b. 1-2	2
c. 3-4	3
d. 5-6	4
e. daily	5

**ii) Deep fried items**

a. Nil	1
b. 1-2	2
c. 3-4	3
d. 5-6	4
e. daily	5

**iii) Meat and poultry products**

- |          |   |
|----------|---|
| a. Nil   | 1 |
| b. 1-2   | 2 |
| c. 3-4   | 3 |
| d. 5-6   | 4 |
| e. daily | 5 |

**9. Any personal habits****i) Smoking/tobacco use**

- |        |   |
|--------|---|
| a. Yes | 1 |
| b. No  | 2 |

If 'yes' specify the number of packs/day

- |              |   |
|--------------|---|
| a) <3        | 1 |
| b) 4-6       | 2 |
| c) 7-9       | 3 |
| d) $\geq 10$ | 4 |
| e) daily     | 5 |

**ii) Alcohol use**

- |        |   |
|--------|---|
| a. Yes | 1 |
| b. No  | 2 |

If 'yes', quantity in ml

- |               |   |
|---------------|---|
| a) <100 ml    | 1 |
| b) 100-150 ml | 2 |
| c) 151-200ml  | 3 |
| d) >200 ml    | 4 |

Frequency (days/wk)

- |          |   |
|----------|---|
| a) 1-2   | 1 |
| b) 3-4   | 2 |
| c) 5-6   | 3 |
| d) daily | 4 |

**iii) Type of drinking**

- |                   |   |
|-------------------|---|
| a) Non-drinker    | 1 |
| b) Social drinker | 2 |
| c) Daily drinker  | 3 |

- d) Binge drinker 4
- e) Addicted drinker 5

**iv) Drug abuse**

- a. Yes 1
- b. No 2

**PERSONAL VARIABLES**

**10.i) Types of Hormonal Replacement Therapy (HRT)**

- a. Estrogen only 1
- b. Progesterone only 2
- c. Cyclical (estrogen followed by progesterone or vice versa) 3
- d. Continuous combined (both estrogen and progesterone) 4

**ii) Dose (mg)**

- a. 1 1
- b. 2 2
- c. 3 3
- d.>3 4

**iii) Frequency (days/wk)**

- a. once a day 1
- b. twice a day 2
- c. thrice a day 3

**iii) Duration (yrs)**

- a. 1-2 1
- b. 3-4 2
- c. 5-6 3
- d. >6 4

**11. HRT users in eunuch's family ( no. of persons)**

- a. None 1
- b. 1-2 2
- c. 3-4 3
- d. 5-6 4
- e. >6 5

**ANTHROPOMETRIC VARIABLES**

**12. Height (in cm)**

- a. 150-155 1

- |            |   |
|------------|---|
| b. 156-160 | 2 |
| c. 161-165 | 3 |

**13. Weight (in kg)**

- |          |   |
|----------|---|
| a. <50   | 1 |
| b. 51-60 | 2 |
| c. 61-70 | 3 |
| d. 71-80 | 4 |
| e. 81-90 | 5 |
| f. >90   | 6 |

**14. Body Mass Index (BMI) (in kg/m<sup>2</sup>)**

- |                   |   |
|-------------------|---|
| a. <18.5          | 1 |
| b. 18.5-24.9      | 2 |
| c. 25-29.9        | 3 |
| d. >30 or greater | 4 |

**APPENDIX – K**  
**BLUE PRINT OF DATA COLLECTION TOOL**

<b>S.No.</b>	<b>CONTENT</b>	<b>ITEM</b>	<b>TOTAL ITEM</b>	<b>PERCENTAGE</b>
1.	DVT Assessment checklist	1-10	10	15.62
2.	Demographic data	1-14	14	21.87
3.	Structured knowledge questionnaire			
	- General information on DVT	1-5	5	7.81
	- Causes and risk factors of DVT	6-9	4	6.25
	- Management	10-14	5	7.81
	- Preventive measures	15-25	11	17.18
4.	Observational checklist			
	- Towel stretch	1-3	3	4.68
	- Standing calf stretch	4-6	3	4.68
	- Resisted Ankle Plantar Flexion	7-9	3	4.68
	- Heel Raise	10-12	3	4.68
	- Minisquat	13-15	3	4.68
		<b>64</b>	<b>64</b>	<b>100%</b>

**APPENDIX – L**  
**INTERVENTION TOOL**  
**LESSON PLAN ON PREVENTION OF DEEP VEIN THROMBOSIS**

<b>Topic</b>	:	Prevention of Deep Vein Thrombosis (DVT)
<b>Group</b>	:	Eunuchs
<b>Place</b>	:	Community
<b>Duration</b>	:	30-45 minutes
<b>Type of teaching</b>	:	Group
<b>No of persons</b>	:	4-8 members
<b>Teaching method</b>	:	Lecture cum discussion and Demonstration
<b>Instructor</b>	:	Investigator
<b>Instructional Aids</b>	:	Power point presentation, Pictorial brochure
<b>Seating arrangement</b>	:	Theatre method
<b>General objectives</b>	:	At the end of the session, the eunuchs will gain adequate knowledge and demonstrate static stretching exercises for preventing DVT with the instruction given regarding DVT.

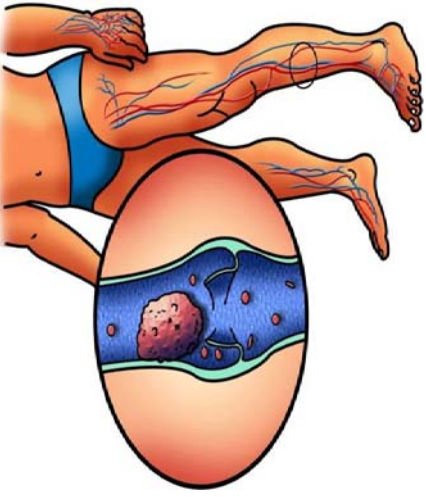


**Specific objectives:**

At the end of the session, the eunuchs will be able to

1. define DVT
2. enlist the causes of DVT
3. identify the risk factors of DVT
4. describe the pathophysiology of DVT
5. list down the clinical manifestations of DVT
6. determine the diagnostic evaluation for DVT
7. specify the treatment for DVT
8. enumerate the complications related to DVT
9. illustrate the preventive measures related to DVT
10. demonstrate the static stretching exercises for preventing DVT

<b>TIME</b>	<b>CONTRIBUTORY OBJECTIVES</b>	<b>CONTENT</b>	<b>INVESTIGATOR LEARNER ACTIVITY</b>	<b>AV AIDS</b>	<b>EVALUATION</b>
2 min	Introduces the topic	<p><b>INTRODUCTION</b></p> <p>According to the World Professional Association of Transgender Health (WPATH) standards of care lists that transwomen who are above 40, highly sedentary, obese, and who have underlying thrombophilic disorders are at greater risk for DVT. Similarly, eunuchs who take estrogen and have the habit of smoking may have the higher incidence of blood clots and other cardiovascular events.</p>	Researcher introduces the topic and learner listens	Power point presentation	

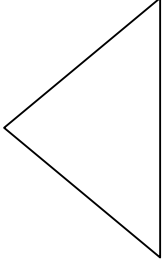
TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
2 min	define DVT	<p><b>DEFINITION:</b>            Deep vein thrombosis (DVT) is a blood clot that usually forms in the veins of the lower leg or calf, and can extend to involve the large deep veins of the upper legs or thigh. It is sometimes called as “economy class syndrome”.</p> 	Researcher defines and learner listens	Power point presenta-tion	

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
2 min	enlist the causes of DVT	<p><b>CAUSES:</b>  <b>PRIMARY DVT CAUSES:</b>  DVT can be caused by genetic and behavioral factors.</p> <ul style="list-style-type: none"> <li>➤ The genetic factors include - Family history of parents or siblings suffering from blood clots.</li> <li>➤ Behavioral factors include - Smoking and obesity, where smoking reduces the amount of oxygen in the bloodstream and may damage the vessel walls, potentially leading to clot formation. Similarly obese people tend to be less physically active and have overall poorer circulation in the blood.</li> </ul> <p>In addition, when in a seated position, the extra body weight carried by an obese person can increase the compression of the back of the upper thighs, thereby constricting blood flow and hindering its return to the heart which further increases the DVT risk.</p>	Researcher enlists the causes and learner listens	Power point presentation	

<b>TIME</b>	<b>CONTRIBUTORY OBJECTIVES</b>	<b>CONTENT</b>	<b>INVESTIGATOR LEARNER ACTIVITY</b>	<b>AV AIDS</b>	<b>EVALUATION</b>

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
2 min	identify the risk factors of DVT	<p><b>RISK FACTORS :</b>            Following is a list of factors that ultimately increases the risk of developing DVT –</p> <ul style="list-style-type: none"> <li>● <b>Injury or surgery</b> to the veins</li> <li>● Birth control pills or hormonal replacement therapy.              For instance, the estrogen hormone treatments causes the blood to clot more easily and results in much harmful events</li> <li>● Prolonged bed rest, such as during a long hospital stay or paralysis</li> <li>● Some forms of cancer treatment</li> <li>● Heart failure</li> <li>● Sitting for long periods of time when driving or flying</li> <li>● Inflammatory bowel disease</li> <li>● Other factors include: Previous DVT, age(risk increases as age increases) and obesity.</li> </ul>	Researcher explains the risk factors and learner listens	Power point presentation	

<b>TIME</b>	<b>CONTRIBUTORY OBJECTIVES</b>	<b>CONTENT</b>	<b>INVESTIGATOR LEARNER ACTIVITY</b>	<b>AV AIDS</b>	<b>EVALUATION</b>

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
3 min	describe the pathophysiology of DVT	<p><b>PATHOPHYSIOLOGY:</b>            It was described by Virchow, German pathologist which includes a triad of possible changes in the venous system i.e            Changes in the vessel wall</p>  <p>changes in the pattern of blood flow</p> <p>changes in the constituency of blood flow</p> <p>i) <u>Changes in the vessel wall</u> : Vessel wall injury may occur from a trauma or surgery, heart valve disease, chemical irritation and indwelling catheters</p> <p>ii) <u>Changes in the pattern of blood flow</u>: May be due to prolonged bed rest/immobility or paralysis, venous obstruction from tumor, obesity or pregnancy.</p> <p>iii) <u>Changes in the constituency of blood flow</u>: Sudden stoppage of anti-coagulant medications, use of oral contraceptive pills, cancer may</p>	Researcher describes the pathophysiology and learner listens	Power point presentation	



TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>increase the blood coagulability.</p> <p>Hence the above mentioned factors may predispose to thrombosis.</p> <p style="padding-left: 40px;">Due to the above mentioned contributing factors</p> <p style="text-align: center;">⇓</p> <p>The deep veins that lie near the center of the leg are surrounded by powerful muscles</p> <p style="text-align: center;">⇓</p> <p>These muscles contract and force deoxygenated blood back to the lungs and heart.</p> <p style="text-align: center;">⇓</p> <p>Therefore, the one-way valves prevent the back-flow of blood between the contractions. (Blood is squeezed up the leg against gravity and the valves prevent it from flowing back to the feet.)</p> <p style="text-align: center;">⇓</p> <p>Thus, when the circulation of the blood slows down due to illness, injury or inactivity, blood can accumulate or “pool”</p> <p style="text-align: center;">⇓</p>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
2 min	list down the clinical manifestations of DVT	<p>which intumescence leads to a clot formation</p> <p style="text-align: center;">⇓</p> <p>resulting in calf muscle pain and swelling</p> <p style="text-align: center;">⇓</p> <p>Then, the clot breaks off and travels in the bloodstream and causes damage to the lungs</p> <p><b>CLINICAL MANIFESTATIONS:</b> Symptoms of DVT only occur in about half of the people who have this condition. The common signs and symptoms includes:</p> <ul style="list-style-type: none"> <li>▪ Swelling of the entire leg or, along a vein in the leg</li> <li>▪ Increased warmth in the area of the leg that's swollen or painful</li> <li>▪ Red or discolored skin on the leg</li> <li>▪ Calf muscle pain on dorsiflexion of foot</li> <li>▪ Elevated body temperature greater than 100.4°F</li> <li>▪ Pain or tenderness in the leg, which you may feel only when</li> </ul>	Researcher lists down the clinical features and learner listens	Power point presentation	

<b>TIME</b>	<b>CONTRIBUTORY OBJECTIVES</b>	<b>CONTENT</b>	<b>INVESTIGATOR LEARNER ACTIVITY</b>	<b>AV AIDS</b>	<b>EVALUATION</b>
		standing or walking			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
2 min	determine the diagnostic evaluation for DVT	<p><b>DIAGNOSTIC EVALUATION:</b></p> <p>To diagnose DVT, the physician may collect a medical history and perform a physical examination to check for swelling, tenderness or discoloration on skin. Followed by this, the physician may suggest further testing, if you are likely to have a clot and it includes-</p> <ul style="list-style-type: none"> <li>• <b>Ultrasound</b> – To evaluate the flow of blood in veins</li> <li>• <b>D-dimer</b> – A blood test that can be used to rule out a clot. This test is used as a positive or a negative indicator. If the result is positive, then it indicates a presence of an abnormal clot. Similarly when it is negative, then it might be an absence of blood clot.</li> <li>• <b>Venography</b> – A dye is injected into the vein and X ray is taken to see if the clots are present.</li> <li>• <b>CT scan/MRI scan</b> – To confirm DVT and rule out sudden blockage in the lung artery</li> </ul>	<p>Researcher determines the diagnostic evaluation and the learner listens</p>	<p>Power point presentation</p>	

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
2 min	specify the treatment for DVT	<p><b>TREATMENT:</b> The main goal for treating DVT is to prevent long lasting complications, such as leg pain and swelling and to prevent the clots travelling into the lungs.</p> <p><b>BLOOD THINNERS</b> – can keep a clot from growing or breaking off and prevents the formation of new clots and it is otherwise called as anti-coagulants. Hence, the main types of anticoagulant used to treat DVT's are :</p> <ul style="list-style-type: none"> <li>• Heparin</li> <li>• Warfarin</li> <li>• Dabigatran</li> <li>• Apixaban</li> <li>• Rivaroxaban</li> </ul> <p><b>CLOT BUSTERS</b> – are mainly given intravenously to break up blood</p>	Researcher specifies the treatment for DVT and learner listens	Power point presentation	

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>clots and are used generally in life threatening situations under prescription. An example of a clot buster is streptokinase, urokinase and tissue plasminogen activator. The most common and serious sideeffect of clot busters or thrombolytics are bleeding, vomiting and allergic reactions.</p> <p><b>COMPRESSION STOCKINGS</b> – One of the best and common method to reduce DVT. These stockings are worn around feet, lower legs and thighs, and fit tightly to encourage your blood to flow more quickly around the body and to improve circulation by providing a graduated pressure on the leg to help return the venous blood flow to the heart.</p> <p>These stockings function by applying external pressure to the legs that reduces swelling and assists the leg (calf) muscles to pump blood. This added pumping action helps to reduce the pain and swelling in the calf muscle</p>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
5 min	<p>enumerate the complications related to DVT</p>	<p><b>COMPLICATIONS:</b>  DVT complications are common and can be serious and life-threatening. The two main complications of DVT are : a moving clot obstructing the blood vessels in the lungs and venous stress disorder.</p> <ul style="list-style-type: none"> <li>✓ <b>SUDDEN BLOCKAGE IN THE LUNG ARTERY:</b>  Can cause breathing difficulties and chest pain which further makes the lungs to collapse. In severe cases, it might result in heart failure which can be fatal.</li> <li>✓ <b>VENOUS STRESS DISORDER:</b> Prolonged persistent symptoms of DVT may affect the tissues of calf and affects around 20-40% of the people with a history of DVT.  This may lead to several symptoms that includes <ul style="list-style-type: none"> <li>▪ Calf muscle pain</li> </ul> </li> </ul>	<p>Researcher specifies the complications and learner listens</p>	<p>Power point presentation</p>	

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<ul style="list-style-type: none"> <li>▪ Leg swelling</li> <li>▪ Leg ulcers</li> </ul>			
4 min	illustrate the preventive measures related to DVT	<p><b>“An ounce of prevention is worth a pound of cure”</b></p> <p><b>PREVENTIVE MEASURES:</b></p> <p>There are certain lifestyle modifications which includes:</p> <ul style="list-style-type: none"> <li>✓ <b>Healthy diet</b> – Diets rich in fruits, vegetables and fish may reduce the risk of DVT. Evidence suggests that consuming kiwifruit 2-3 per day and vitamin E rich foods such as nuts, vegetable oils (sunflower, palm oil), oats and wheat lowers the risk of blood clots and cholesterol levels too. For instance, garlic, onions and ginger also helps to prevent the blood clots. <p>Apart from this, omega- 3 fish oils once in a week helps to reduce the stickiness of blood and lowers the incidence of</p> </li></ul>	Researcher explains the preventive measures and learner listens	Power point presentation	



TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>DVT about 30-45%.</p> <ul style="list-style-type: none"> <li>✓ <b>Weight control</b> – Obesity increases the risk for developing DVT. Cut all the foods high in fat and low in fiber and increase foods low in fat and full of fiber.</li> <li>Choose foods from plant sources. Avoid all animal products and keep vegetable oils to a bare minimum. This low fat vegetarian approach is safe and remarkably effective.</li> <li>✓ <b>Positioning</b> – Raise the foot of your bed at night a few inches. For this to work, be sure your legs are higher than your hips. Even if you are affected with flu or any another illness has you resting in bed during the day, get up and walk around as often as you can.</li> <li>✓ <b>Walking</b> – If possible, avoid long periods of immobility, such as sitting in a chair for many hours. If you are able to get up and walk around now and then. A daily brisk walk for 30-60 minutes is even better if you can do this. The aim is</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>to stop the blood pooling and to improve circulation in the legs while moving. Regular exercise of the calf muscles also helps. You can do some calf exercises even when you are sitting.</p> <ul style="list-style-type: none"> <li>✓ <b>Regular monitoring of blood pressure</b> – Monitor your blood pressure regularly and keep a written record to share with your doctor.</li> <li>✓ <b>Adequate fluid intake</b> - Drink plenty of water to prevent dehydration because this can cause the blood to thicken, increasing the risk for a blood clot. To make sure that you are well hydrated, drink at least 6-8 ounce glasses of water per day.</li> <li>✓ <b>Sip red wine or grape juice</b> - Research suggests that drinking moderate amounts of red wine or purple grape juice contains a substance called flavonoids in purple grapes can help prevent blood clots by making platelets.</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<ul style="list-style-type: none"> <li>✓ <b>Smoking cessation</b> – Stay active, quit smoking (the second hand exposure) and tobacco, develop healthy eating habits which can lower the risk of DVT.</li> <li>✓ <b>Alcohol cessation</b> - Avoid alcohol and caffeinated tea, coffee and soda, which all act like mild diuretics. These type of drinks would add an risk for dehydration.</li> <li>✓ <b>Avoid sitting still</b> – Do not sit or lie down in the same position for long periods. But if you are sitting for a while, try not to cross your legs because this can limit blood flow.  <ul style="list-style-type: none"> <li>Prop up your legs on a stool or a chair if your legs swell when you sit. If swelling is a problem, keep your legs resting above the heart.</li> </ul> </li> <li>✓ <b>Managing the side-effects of estrogen</b> – It includes fluid retention, bloating, breast tenderness or swelling, nausea, leg</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>cramps, headache and indigestion. In order to prevent these side effects small lifestyle changes can be done such as taking estrogen dose with food, may help to reduce nausea and indigestion. Eating a low fat, high carbohydrate diet may reduce breast tenderness and regular static stretching exercises can help to reduce the leg cramps.</p> <ul style="list-style-type: none"> <li>✓ <b>Avoid taking sleeping pills</b> – because it can lead to immobility</li> <li>✓ <b>Wear clothing</b> – that does not restrict your movement and avoid tight underwear.</li> <li>✓ <b>Practice of static stretching exercises-</b> It is used to stretch the muscles when the body is at rest and it is composed of various techniques. When done properly it helps to relieve the stress and reduce the risk of injury to joints, muscles and tendons.</li> <li>✓ <b>Follow up advice-</b> Report to the vascular surgeon immediately – if any of these signs and symptoms occur such</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>as pain, tenderness, unilateral edema , erythema and warmth in the calf muscle.</p>			
20 min	<p>demonstrate the static stretching exercises for preventing DVT</p>	<p><b>STATIC STRETCHING EXERCISES :</b>                      Static stretching exercise is performed consistently to improve the flexibility and joint range of motion which includes 5 important exercises i.e.,  <b>1.Towel stretch</b>  <b>2.Standing calf stretch</b>  <b>3.Resisted ankle plantar flexion</b>  <b>4.Heel raise</b>  <b>5.Minisquat</b>  <b>SCIENTIFIC PRINCIPLES BEHIND THIS EXERCISE:</b>                      ✓ Static stretching hinders maximum contraction of a muscle                      ✓ Static stretching is most beneficial when administered during the warm down phase of the workout to increase flexibility and</p>	<p>Researcher demonstrates the exercises and the learner does the return demonstration</p>		

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>eliminate delayed onset muscle soreness</p> <ul style="list-style-type: none"> <li>✓ Power is reduced</li> <li>✓ The ability to apply maximum force is hindered thus reducing speed, power and agility.</li> </ul> <p><b>GUIDELINES TO BE FOLLOWED BEFORE AND AFTER STRETCHING:</b></p> <ul style="list-style-type: none"> <li>▪ Warm-up before stretching vigorously.</li> <li>▪ Stretch only to the point where you feel tightness or resistance to stretch. Stretching should not be painful.</li> <li>▪ Be sure to continue normal breathing during a stretch. Do not hold your breath.</li> <li>▪ Exercise caution when stretching muscles surrounding painful joints. Pain is an indication that something is wrong and should not be ignored.</li> <li>▪ Stop exercising immediately if you experience any of these symptoms such as :</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<ul style="list-style-type: none"> <li>✓ Chest pain or other pain that could indicate a heart attack, including pain in the neck and jaw, pain travelling down the arm or pain between the shoulder blades</li> <li>✓ Extreme breathlessness</li> <li>✓ A very rapid or irregular heartbeat during exercise.</li> <li>✓ Discomfort or pain</li> <li>▪ After the completion of exercise, switch on to cool down phase slow down gradually to a light jog or brisk walk, then finish off with five to 10 minutes of stretching to reduce muscle soreness and stiffness</li> <li>▪ Once you complete, drink more to ensure you are fully rehydrated. Don't drink alcohol, tea or coffee after exercising, as these beverages promote fluid loss.</li> </ul> <p><b>1.TOWEL STRETCH :</b></p> <p><b>STEPS TO BE FOLLOWED:</b></p> <ul style="list-style-type: none"> <li>▪ Sit on a hard surface with one leg stretched out in front of</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>you.</p> <ul style="list-style-type: none"> <li>▪ Loop a towel around the ball of your foot and pull the towel toward your body keeping your knee straight.</li> <li>▪ Hold this position for 15 to 30 seconds then relax. Repeat 3 times.</li> <li>▪ You can begin by gently stretching your calf muscle using the towel stretch and make sure you only get a gentle pull and not a sharp pain while you are doing this stretch</li> </ul> <p><b>2.STANDING CALF STRETCH :</b></p> <p><b>STEPS TO BE FOLLOWED :</b></p> <ul style="list-style-type: none"> <li>▪ Facing a wall, put your hands against the wall at about eye level.</li> <li>▪ Keep one leg with the heel on the floor, and the other leg forward.</li> <li>▪ Turn your back foot slightly inward(as if you were pigeon-</li> </ul>			



TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<p>toed) as you slowly lean into the wall until you feel a stretch in the back of your calf.</p> <ul style="list-style-type: none"> <li>▪ Hold for 15 to 30 seconds. Repeat three times. Make sure that you perform this exercise three times a day.</li> </ul> <p><b>3. RESISTED ANKLE PLANTAR FLEXION:</b></p> <p><b>STEPS TO BE FOLLOWED:</b></p> <ul style="list-style-type: none"> <li>▪ Lie in supine position with knee extended and foot in neutral position.</li> <li>▪ Strengthen your calf and lower leg muscles using elastic band around the ball of your foot.</li> <li>▪ Hold the ends of the tubing in both hands.</li> <li>▪ Gently press the ball of your foot down and point your toes, stretching the tubing.</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<ul style="list-style-type: none"> <li>▪ Return to the starting position. Do 3 sets of 10.</li> </ul> <p><b>4.HEEL RAISE</b></p> <p><b>STEPS TO BE FOLLOWED:</b></p> <ul style="list-style-type: none"> <li>▪ Balance yourself while standing behind a chair or counter.</li> <li>▪ Raise your body up onto your toes and hold for 5 seconds. Then slowly lower yourself down.</li> <li>▪ Hold onto the chair or counter if you need to.</li> </ul> <ul style="list-style-type: none"> <li>▪ When this exercise becomes less painful, try lowering on one leg only. Repeat 10 times. Do 3 sets of 10.</li> </ul> <p><b>5.MINISQUAT FOR LEGS AND CALF MUSCLE:</b></p> <p><b>STEPS TO BE FOLLOWED:</b></p> <ul style="list-style-type: none"> <li>▪ Stand by a low window ledge, a table or a sofa back.</li> <li>▪ Keep the feet forward and a hands breadth apart.</li> <li>▪ Slowly bend at the hips and lower your body until the knees are flexed 45 degrees.</li> </ul>			

TIME	CONTRIBUTORY OBJECTIVES	CONTENT	INVESTIGATOR LEARNER ACTIVITY	AV AIDS	EVALUATION
		<ul style="list-style-type: none"> <li>▪ The shoulder, hip and heel should be in a straight line. Hold this position for 10 seconds.</li> <li>▪ Slowly stand up again. Repeat 4-5 times.</li> </ul> <p>Minisquat is a simple way to maintain ankle mobility</p> <p><b>CONCLUSION:</b> Finally in a nutshell, the above mentioned set of interventions are mainly aimed and reinforced to reduce the occurrence of DVT.</p>			


## இரத்தக்குழாய் அடைப்பை தடுக்கும் முறை பற்றிய பாடத்திட்டம்

தலைப்பு	:	இரத்தக்குழாய் அடைப்பை தடுப்பது
பிரிவு	:	திருநங்கைகள்
இடம்	:	சமுதாய கூடம்
நேரம்	:	30-45 நிமிடங்கள்
பயிற்றுவிக்கும் முறை	:	குழுக்கள்
நபர்களின் எண்ணிக்கை	:	4-8 வரை
கற்பிக்கும் வழிகள்	:	விரிவுரை - கலந்துரையாடல் மற்றும் செயல்முறை
கற்பிப்பவர்	:	ஆய்வாளர்
கற்பிக்க தேவைப்படும் உபகரணங்கள்	:	கணினி வாயிலாக ஒலி - ஒளி காட்சிகள் மற்றும் தொடர்பு கையேடு
அமர்வதற்கான	:	காட்சி அரங்கு ஏற்பாடுகள்
பொதுவான நோக்கம்	:	இக்கலந்துரையாடல் முடிவில் திருநங்கைகள் இரத்தக்குழாய் அடைப்பை பற்றிய அறிவு, செயல்முறை உடற்பயிற்சிகள் மூலமாக அதை தடுக்கும் முறை பற்றியும் அறிந்துகொள்வார்கள்
குறிப்பிட்ட நோக்கம்	:	இக்கலந்துரையாடல் முடிவில் திருநங்கைகள் கீழ்க்கண்டவற்றை பற்றி தெரிந்துகொள்ளமுடியும்

- இரத்தக் குழாய் அடைப்பு என்பதின் விளக்கம்
- இரத்தக் குழாய் அடைப்பிற்கான காரணங்களின் பட்டியல்
- இரத்தக் குழாய் அடைப்பிற்கான ஆபத்துகளை இனம் கண்டுபிடிப்பது
- இரத்தக் குழாய் அடைப்பிற்கான உடற்கூறுகளை விவரித்தல்
- இரத்தக் குழாய் அடைப்பு நோய்க்கான அறிகுறிகள் பட்டியல்
- இரத்தக் குழாய் அடைப்பை கண்டறியும் மதிப்பீடு
- இரத்தக்குழாய் அடைப்பிற்கான சிகிச்சை முறையை குறிப்பிடுதல்
- இரத்தக்குழாய் அடைப்பிற்கான பின் விளைவுகளை பற்றி விவரித்தல்
- இரத்தக்குழாய் அடைப்பை தடுக்கும் அளவீடுகளை அறிந்து கொள்ளுதல்
- இரத்தக்குழாய் அடைப்பை தடுக்கும் உடற்பயிற்சி செயல்முறைகளை விளக்குதல்

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
-------	-----------------------	------------	-----------------------------------	--------------------------------------	-------------

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
2 நிமிடம்	தலைப்பை அறிமுகம் செய்தல்	<p><b>அறிமுகவுரை:</b></p> <p>திருநங்கைகளின் உடல் நலம் சார்ந்த உலக தொழில் சங்கத்தின் பாதுகாப்பு பட்டியலில் உடல்நலத்தியான உழைப்பு எதுவுமின்றி பருமனாக உள்ள 40 வயதுக்கு மேற்பட்ட திருநங்கைகள், இதே போல் திருநங்கையர்கள் பெண்மை இயக்குநர் ஊக்கியான ஈஸ்ட்ரோஜன் எடுத்துக் கொள்பவர்களாக இருந்தாலும், புகைபிடிக்கும் பழக்கம் உள்ளவர்களாய் இருந்தாலும் இரத்தக் குழாய் அடைப்பு வருவதற்கு அதிகபடியான வாப்ப்பு உள்ளதோடு மட்டுமல்லாமல் இருதய அடைப்பு நோய்க்கும் வழி வகுக்கும்.</p>	ஆராய்ச்சியாளர் தலைப்பை அறிமுகம் செய்வதும், கற்றுக் கொள்பவர் கேட்பதும்	கணினி வாயிலாக ஒலி -ஒளி காட்சிகள் மூலம் பாடங்களை நடத்துதல்	
2 நிமிடம்	இரத்தக்குழாய் அடைப்பு	இரத்தக் குழாய் அடைப்பு என்பது இரத்தக்கட்டி. இது பொதுவாக கீழ்காலிலோ அல்லது கெண்டைக்	ஆராய்ச்சியாளர் விவரிப்பதும்	கணினி வாயிலாக	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
2 நிமிடம்	என்பதின் விளக்கம் இரத்தக்குழாய்	<p>காலிலோ தசையில் உள்ள சிரையிலோ உருவாகும். அப்படி உருவாகி மேல் கால் அல்லது தொடை பகுதியில் உள்ள பெரிய ஆழ்சிரைக்கும் பரவும். இது சில சமயங்களில் சிக்கன நோய் அல்லது பொருளாதார வகுப்பு குறைபாடு என்றும் அழைக்கப்படும்.</p>  <p><b>காரணங்கள்:</b></p>	கற்பவர் கேட்பதும் ஆராய்ச்சியாளர்	ஒலி -ஒளி காட்சிகள் மூலம் பாடங்களை நடத்துதல் கணினி	

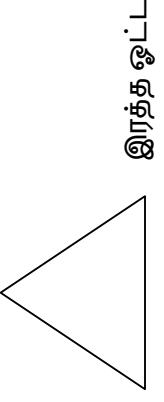
நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
	<p>அடைப்பிற்கான காரணங்களின் பட்டியல்</p>	<p><b>இரத்தக்குழாய் அடைப்பிற்கான முதல்நிலை காரணங்கள்:</b></p> <ul style="list-style-type: none"> <li>➤ பரம்பரை என்பது பெற்றோர்களுடைய குடும்ப வரலாறு மற்றும் அவர்களுடைய குழந்தைகள் இரத்தம் உறைந்து போகும் வியாதியில் துன்பப்படுவதாக இருத்தல்.</li> <li>➤ பழக்கவழக்கங்களின் மூலமாக வருவது என்பது புகைபிடித்தல் மற்றும் உடல் பருமனாக இருப்பதால் வருவது. புகைபிடிப்பதால் இரத்த ஓட்டத்தில் உள்ள ஆக்ஸிஜன் அளவானது குறைந்து இரத்த நாளங்களின் சுவரானதும் செயலிழந்து இரத்தக்கட்டியை உருவாக்குகிறது. இதே மாதிரியாக உடல் பருமனாக உள்ளவர்கள் உடலளவில் உழைப்பு மற்றும் வேலைகளில்</li> </ul>	<p>இரத்தக் குழாய் அடைப்பிற்கான காரணங்களை பட்டியல் இடுவர், கற்பவர் கேட்பதும்</p>	<p>வாயிலாக ஒலி -ஒளி காட்சிகள் மூலம் பாடங்களை நடத்துதல்</p>	



நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
2 நிமிடம்	<p>இரத்தக்குழாய் அடைப்பிற்கான ஆபத்துக்களை இனம் கண்டு பிடிப்பது</p>	<p>குறைந்த அளவே ஈடுபடுவதால் இரத்த ஓட்டமானது மிக மிகக் குறைவாகவே உள்ளது. மேலும், உடல்பருமனாக உள்ளவர்கள் உட்கார்ந்திருக்கும் நிலையில் இருக்கும்போது தொடர்பு பகுதி அழுத்தப்படுவதால் இரத்தம் செல்லும் குழாய்கள் சுருங்கி இதயத்திற்கும் செல்லும் இரத்த ஓட்டம் தடுக்கப்படுகிறது. இதனால் இரத்தக்குழாய் அடைப்பு ஏற்பட ஏதுவாகிறது.</p> <p><b>ஆபத்துக்கான காரணங்கள்:</b>  இரத்தக்குழாய் அடைப்பு ஏற்படுவதற்கான காரணங்களின் பட்டியல் கீழே கொடுக்கப்பட்டுள்ளது:</p>	<p>ஆராய்ச்சியாளர் ஆபத்துக்கான காரணங்களை பட்டியலிட்டு</p>	<p>கணினி வாயிலாக ஒலி -ஒளி காட்சிகள்</p>	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>✓ இரத்த நாளங்களில் ஏற்படும் காயம் மற்றும் அறுவை சிகிச்சைகள்</p> <p>✓ குழந்தை பிறப்பை தடுக்கும் மாத்திரைகள் மற்றும் (ஹார்மோன்கள்) இடம் மாற்ற சிகிச்சை. இதற்கு எடுத்துக்காட்டாக, ஈஸ்ட்ரோஜன் ஹார்மோன் சிகிச்சையானது இரத்தக் கட்டி நோயை ஏற்படுத்தி பெரும்பாலும் ஆபத்துகளை விளைவிக்கிறது.</p> <p>✓ நீண்டகாலமாக படுக்கையிலே ஓய்வு, அதாவது மருத்துவமனையிலேயே வெகு நாட்கள் தங்கியிருப்பது அல்லது பக்கவாதம் வந்தவர்கள்.</p> <p>✓ புற்று நோய்க்கான சிகிச்சை எடுத்தவர்கள்.</p> <p>✓ இருதய நோய் உள்ளவர்கள்</p>	<p>விவரிப்பார், கற்பவர் கேட்பதும்</p>	<p>மூலம் பாடங்களை நடத்துதல்</p>	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
3 நிமிடம்	<p>இரத்தக் குழாய் அடைப்பின் உடல்கூறு பற்றி விவரித்தல்</p>	<p>✓ வாகனம் ஓட்டும் போதும், விமானத்தில் பயணம் செய்யும் போதும் நீண்ட நேரம் உட்கார்ந்திருத்தல்.</p> <p><b>மற்ற காரணங்கள்:</b> குடல் அழற்சி நோய், ஏற்கெனவே, இரத்தக் குழாய் அடைப்பால் பாதிக்கப்பட்டவர்கள், முதுமை (வயது அதிகமாகும் போது இதன் ஆபத்தும் அதிகமாகும்) மற்றும் உடல்பருமன்.</p> <p><b>நோயின் இயல்பை எடுத்துக்கூறும் உடல்கூறு:</b> மருத்துவரான விர்சோ என்னும் ஜெர்மானிய மருத்துவர் இரத்த நாளங்களில் இரத்த ஓட்டத்தை மூன்று வழிகளில் மாற்ற முடியும் என்று கூறுகிறார்.</p>	<p>ஆராய்ச்சியாளர் உடல்கூறு பற்றி விவரிப்பதும், கற்பவர் கேட்பதும்</p>	<p>கணினி வாயிலாக ஒலி -ஒளி காட்சிகள் மூலம்</p>	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>இரத்த நாளங்களில் சுவரின் மாற்றம்</p>  <p>இரத்த ஓட்ட முறையில் மாற்றம்</p> <p>இரத்த ஓட்ட தொகுதியில் மாற்றம்</p> <p><b>இரத்த நாளங்களில் சுவரின் மாற்றம் :</b></p> <p>அதிர்ச்சி, அறுவை சிகிச்சை மற்றும் இருதய குழாய்களில் அடைப்புகள், இரசாயன அரிப்புகள் மற்றும் சிறுநீர் வடிகுழாய்களில் இருக்கும் கிருமிகள் மூலமாக இரத்த குழாய் சுவர்களில் மாற்றம் வரலாம்.</p> <p><b>இரத்த ஓட்ட முறையில் வரும் மாற்றம்:</b></p> <p>நீண்ட காலமாக படுக்கையில் அசைய முடியாமல்</p>		பாடங்களை நடத்துதல்	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>இருத்தல், பக்கவாதம், கட்டியில் ஏற்பட்டிருக்கும் இரத்த அடைப்பு, உடல் பருமன் மற்றும் கர்ப்பமாக இருக்கும் போது.</p> <p><b>இரத்த ஓட்ட தொகுதியில் மாற்றம்:</b></p> <p>இரத்தம் உறையாமல் இருக்கும் மருந்துகளை திரென்று நிறுத்துவது, கர்ப்பத்தை மருந்துகளை உட்கொள்ளுவது மற்றும் புற்றுநோய்கள் இரத்தத்தை உரையவிடாமல் தடுக்கும். மேலே கொடுக்கப்பட்டுள்ள காரணிகள் இரத்தக்கட்டி வர காரணமாகிறது.</p> <p>மேலே கொடுக்கப்பட்ட காரணங்களால், காலின் மத்தியில் அமைந்துள்ள ஆழமான நரம்புகள், சக்தி வாய்ந்த தசைகளால் முழுவதும் தூழப்பட்டுள்ளன</p>			



நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>இந்த தகைகள் கார்பன்டை ஆக்ஸைடு நிறைந்த இரத்தத்தை நுரையீரலுக்கும், இதயத்திற்கும் எடுத்து செல்ல உதவுகின்றன.</p> <p style="text-align: center;">↓</p> <p>மேலும், ஒருவழிப்பாதை இரத்தக் குழாய்கள் சுருங்குவதால் பின்னோக்கி ஓடும் இரத்த ஓட்டத்தை தடுக்கின்றது.</p> <p style="text-align: center;">↓</p> <p>அதாவது, உடல் நிலை சரியில்லாதபோது, காயம் ஏற்படுதல் அல்லது உடலியக்கம் இல்லாமல் இருக்கும் போது இரத்த ஓட்டம் குறைந்து, ஒரே இடத்தில் இரத்தமானது தேங்கி விடுவதால் இரத்தக்கட்டி உருவாகிறது.</p> <p style="text-align: center;">↓</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
2 நிமிடம்	இரத்தக்குழாய் அடைப்பு நோய்க்கான அறிகுறிகளின் பட்டியல்	<p>இதனால் பின்னங்கால் தசையில் வலி மற்றும் வீக்கம் ஏற்படுகிறது</p> <p style="text-align: center;">↓</p> <p>பிறகு, இரத்தக்கட்டி உடைந்து இரத்தநாளங்களில் சென்று நுரையீரலில் அடைப்பு உருவாகிறது. <u>நோய்க்கான அறிகுறிகளின் பட்டியல்:</u></p> <p>இரத்தக் குழாய் அடைப்பு இருப்பவர்களில் பாதிக்கும் மேற்பட்டவர்களுக்கு இந்த அறிகுறிகள் தென்படும்.</p> <p><u>பொதுவான அறிகுறிகள்:</u></p> <ul style="list-style-type: none"> <li>❖ கால்வீக்கம் அல்லது இரத்தநாளங்களில் வலியும் வீக்கமும் இருக்கும்.</li> <li>❖ கால்களின் மேலே உள்ள தோலின் நிறம் சிவப்பாகவோ அல்லது வெளிறியதாகவோ</li> </ul>	ஆராய்ச்சியாளர் நோய்க்கான அறிகுறிகளை பட்டியல் இடுவர், கற்பவர் கேட்பதும்	கணினி வாயிலாக ஒலி -ஒளி காட்சிகள் மூலம் பாடங்களை நடத்துதல்	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
2 நிமிடம்	இரத்தக் குழாய் அடைப்பை கண்டறிதலின் மதிப்பீட்டை விவரித்தல்	<p>மாறும்.</p> <ul style="list-style-type: none"> <li>❖ பாதங்களை மடக்கும் பொழுது பின்னங்கால் தசையில் வலி ஏற்படும்.</li> <li>❖ உடல் நிலையின் வெப்பம் 100 .4° F விட அதிகரிக்கும்.</li> <li>❖ நிற்கும் போது அல்லது நடக்கும் போதும் வலி அல்லது உணர்ச்சியற்ற தன்மை தெரியும்.</li> </ul> <p><b>கண்டறிதலின் மதிப்பீடு:</b></p> <p>இரத்தக்குழாய் அடைப்பை கண்டுபிடிக்க மருத்துவர், நோய்யுற்றவருடைய மருத்துவ வரலாறையும் மற்றும் கால் வீங்கிப் போதல், தொடு வலியுணர்வு மற்றும் தோல் நிறம் மாறிப் போதல் போன்ற உடல் சம்மந்தமான மருத்துவ பரிசோதனைகளை மேற்கொண்ட பிறகு உங்களுக்கு</p>	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
			ஆராய்ச்சியாளர் மருத்துவ பரிசோதனை முறைகளை பட்டியல் இடுவர், கற்பவர் கேட்பதும்	கணினி வாயிலாக ஒலி -ஒளி காட்சிகள் மூலம் பாடங்களை நடத்துதல்	



நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>இரத்தக்கட்டி இருப்பதற்கான அறிகுறி இருந்தால் மேற்கொண்டு சில பரிசோதனைகளை செய்யும்படி அறிவுறுத்துவார்.</p> <p><u>அல்ட்ரா சவுண்ட்</u> - சோதனை சிரையில் பாயும் இரத்தத்தைப் பற்றிய மதிப்பீடு.</p> <p><u>டி-டைமர்</u>- இரத்தக்கட்டியை கண்டறிவதற்கான இரத்த பரிசோதனை செய்யப்படும். இந்த பரிசோதனை நேரிடையாகவோ அல்லது எதிர்மறையாகவோ இருக்கலாம். சோதனை முடிவு நேர்மையாக இருந்தால் அளவிற்கு அதிகமான இரத்தக்கட்டியாக இருக்கலாம். எதிர்மறையாக இருந்தால் இரத்தக்கட்டி இல்லாமல் இருக்கும்.</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
2 நிமிடம்	<p>இரத்தக்குழாய் அடைப்புக்கான சிகிச்சை முறைகள்</p>	<p><b>வீனோகிராபி (ரத்தநாளப்பாடம்)-</b>  சாய தன்மை கொண்டுள்ள மருந்துகளை சிரையில் உள்ளே செலுத்தி எக்ஸ்-கதிர்கள் மூலமாக இரத்தக்கட்டி உள்ளதா என்று பார்ப்பார்கள்.  <b>சி.டி.ஸ்கேன் / எம்.ஆர்.ஐ.ஸ்கேன்-</b>  இரத்தக்கட்டி மற்றும் திடீரென்று நுரையீரலில் அடைப்பு ஏற்படுவதை இந்த ஸ்கேன் மூலம் உறுதி செய்ய முடியும்.  <b>சிகிச்சை முறை:</b> இரத்தக் குழாய் அடைப்பை தடுக்கும் முக்கிய நோக்கம் நீண்ட காலமாக இருக்கும் சிக்கல்கள் அதாவது கால்வலி, கால் வீக்கம் நுரையீரலில் அடைப்பு ஏற்படுதல் போன்றவற்றை தடுப்பது  <b>இரத்தத்தை நீர்மமாக்கும் முறைகள்:</b></p>	<p>ஆராய்ச்சியாளர் சிகிச்சை முறைகளை சொல்வதும், கற்பவர் கேட்பதும்</p>	<p>கணினி வாயிலாக ஒலி -ஒளி காட்சிகள் மூலம் பாடங்களை</p>	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>இரத்தக்கட்டி மேலும் பெரிதாவதை தடுத்தல் (அ) அதை உடைத்தல் மற்றும் புதிய இரத்தக்கட்டிகள் உருவாவதைத் தடுத்தல் போன்றவையாகும். இதற்கு ஆண்டிகொயகுலன்ட்ஸ் (இரத்தக்கட்டி உருவாவதை தடுக்கும் மருந்து) பயன்படுகிறது. அவையாவன</p> <ul style="list-style-type: none"> <li>➤ ஹெப்பாரின்</li> <li>➤ வார்பேரின்</li> <li>➤ டாபிஜட்ரான்</li> <li>➤ அபிக்ஸாபன்</li> <li>➤ ரிவார்ஸோபான்</li> </ul> <p><b>இரத்தக்கட்டிகளை உடைய வைக்கும் முறை:</b> இம்முறை உயிருக்கு ஆபத்தான சூழ்நிலையின் போது மருந்துவர்களால் பரிந்துரைக்கப்பட்டால்</p>		நடத்துதல்	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>மட்டுமே செய்யப்படும். இம்முறையில் சிரை வழியாக மருந்தைச் செலுத்தி இரத்தக்கட்டியை உடைய வைப்பர். இதற்கு எடுத்துக்காட்டு ஸ்டெரப்டோகைனேஸ், யுரோகைனேஸ் மற்றும் திசுபிளாஸ்மிநோஜன் போன்றவையாகும். இதன் முக்கிய எதிர்விளைவுகள் இரத்தப்போக்கு, வாந்தி, உடலில் ஒவ்வாமை போன்ற அறிகுறிகள் தோன்றுவதாகும்.</p> <p><b>அழுத்தம் தரும் காலுறைகள்:</b></p> <p>இரத்தக்கட்டியை குறைக்கும் மிகச் சிறந்த பொதுவான முறை - அழுத்தமான காலுறைகள் அணிவதாகும். இந்த காலுறைகள் பாதம், காலின் கீழ்ப்பகுதி மற்றும் தொடைப் பகுதியையும் பற்றியிருக்குமாறு இறுக்கமாக மற்றும்</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
5 நிமிடம்	<p>இரத்தக் குழாய் அடைப்பின் பின் விளைவுகளை பற்றி விவரித்தல்</p>	<p>பொருத்தமாக அணிந்திருப்பதால் நம்முடைய உடல் முழுவதும் இரத்தம் சீக்கிரமாக பாய்வதற்கு ஊக்கப்படுத்துவதாக அமைவதோடு மட்டுமல்லாமல் சரிசமமான அழுத்தம் கால்களுக்கு தருவதன் மூலம் சிரையில் பாயும் இரத்த ஓட்டமானது மீண்டும் இருதயத்திற்கு செல்கிறது. இந்த அழுத்தமான காலுறைகள் வெளிப்புறமான அழுத்தத்தை கால்களுக்கு கொடுக்கும்போது கால்களில் உள்ள வீக்கம் குறைந்து கெண்டைக் கால்களில் உள்ள தசைகள் இரத்தத்தை வெளிக்கொணர உதவுகிறது. இந்த செயலானது வலியை குறைத்து கெண்டைக்கால் தசையில் உள்ள வீக்கத்தை குறைக்கிறது.</p> <p><u>பின்விளைவுகள்:</u> இரத்தக் குழாய் அடைப்பானது</p>	<p>ஆராய்ச்சியாளர் பின்விளைவுகளை சொல்வதும்,</p>	<p>கணினி</p>	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>மிகப் பொதுவானதாகவும், அபாயகரமானதும் மனிதர்களின் வாழ்க்கையை அச்சுறுத்துவதாகும் உள்ளது. இரண்டு முக்கியமான பின்விளைவுகள் என்னவென்றால் -</p> <p>நகரும் இரத்தக்கட்டியானது நுரையீரல்களில் உள்ள வீக்கம் இரத்தக்குழாய்களில் தடையை ஏற்படுத்தும் காரணியாகவும், இரத்த நாளங்களில் இரத்த அழுத்தத்தை சரியில்லாமல் செய்கிறது.</p> <p><b>நுரையீரல் தமனியில் ஏற்படும் திடீர் அடைப்பு:</b></p> <p>இவை மூச்சு விடுவதற்கு சிரமத்தையும் மற்றும் நெஞ்சுவலியையும் ஏற்படுத்தி நுரையீரலை செயலிழக்க செய்கிறது. சில சமயங்களில் அதாவது கால்களில் உள்ள வீக்கம் தீவிரமான நேரங்களில் இது இதயத்தை செயலிழக்க</p>	கற்பவர் கேட்பதும்	<p>வாயிலாக</p> <p>ஒலி -ஒளி</p> <p>காட்சிகள்</p> <p>மூலம்</p> <p>பாடங்களை</p> <p>நடத்துதல்</p>	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
4 நிமிடம்	பாதுகாப்பு முறைகளை விவரித்தல்	<p>செய்வதுடன் மரணத்தையும் ஏற்படுத்தும்.</p> <p><b>சிரை அழுத்தத்தை ஏற்படுத்தும் நோய்:</b></p> <p>தொடர்ந்து நீண்ட காலமாக இருக்கும் இரத்தக்கட்டி</p> <ul style="list-style-type: none"> <li>- கெண்டைக் கால் திசுக்களையும் பாதிக்கும்.</li> </ul> <p>இந்நிலை இரத்த குழாய் அடைப்பு வரலாற்றில் 20% முதல் 40% வரை மக்களை பாதித்துள்ளது. இது நோய்க்குரிய பல அறிகுறிகள் ஏற்பட வழிவகுக்கும். அவை,</p> <ul style="list-style-type: none"> <li>➤ கெண்டைக்கால் தசை வலி</li> <li>➤ கால் வக்கம்</li> <li>➤ கால் புண்கள்</li> </ul> <p>"விரற்கடை அளவு தடுப்பு முறையானது பல மடங்கு சுகத்துக்கு நிகரான மதிப்புடையது."</p> <p><b>தடுப்பு வழிமுறைகள்:</b></p>	<p>ஆராய்ச்சியாளர் பாதுகாப்பு வழிமுறைகள் சொல்வதும், கற்பவர் கேட்பதும்</p>	<p>கணினி வாயிலாக ஒலி -ஒளி</p>	

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>சில வாழ்க்கை முறை மாற்றங்கள்:</p> <p><u>ஆரோக்கியமான உணவு :</u></p> <p>நம் உணவில் பழங்கள், காய்கறிகள், மீன்கள் அதிகமாக சேர்த்துக் கொள்ளும்போது ஆழ்சிரையில் இரத்தக்கட்டி ஏற்படுவதற்கான அபாயத்தை குறைக்கிறது. 2 அல்லது 3 கிவி பழங்களை தினந்தோறும் உணவில் சேர்த்துக்கொள்ள வேண்டும். வைட்டமின் 'ஈ' நிறைந்த உணவு பொருட்களாவன- கொட்டைகளையும், சூரியகாந்தி எண்ணெய், பனை எண்ணெய், ஓட்ஸ் மற்றும் கோதுமை உணவை உட்கொண்டால் இரத்தக்கட்டி மற்றும் உடலில் உள்ள கொழுப்பின் அளவையும் குறைக்கிறது. மேலும் பூண்டு, வெங்காயம், இஞ்சி ஆகியவையும்</p>		<p>காட்சிகள்</p> <p>மூலம்</p> <p>பாடங்களை</p> <p>நடத்துதல்</p>	



நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>இரத்தக்கட்டி ஏற்படுவதை தடுக்கிறது. இவை மட்டுமல்லாமல் வாரத்திற்கு ஒருமுறை ஒமேகா-3-பீன் எண்ணெயை உணவில் சேர்த்துக்கொண்டால் கால்களில் உள்ள சிரையில் இரத்தக்கட்டி ஏற்படுவதை 30%-45% வரை குறைக்கிறது.</p> <p><b>உடல் எடையை கட்டுப்படுத்தல்:</b></p> <p>அதிக உடல் பருமன், சிரையில் இரத்தக்கட்டி உருவாகும் ஆபத்தை அதிகப்படுத்தும். நாம் உண்ணும் உணவில் அதிக கொழுப்பு குறைவான நார்சத்து உள்ள உணவை தவிர்க்க வேண்டும். மாறாக குறைந்த கொழுப்பு, அதிக நார்சத்து உள்ள உணவை உட்கொள்ளவேண்டும்.</p> <p>தாவரங்களை மூலமாக கொண்ட உணவை தேர்வு செய்து உட்கொள்ளவேண்டும். விலங்கு</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>வகை சார்ந்த உணவு பொருட்களை தவிர்த்தும், தாவர எண்ணெயை குறைவாகவும் உட்கொள்ள வேண்டும். இவ்வாறு குறைந்த அளவு கொழுப்பு மற்றும் தாவரவகையை சார்ந்த உணவுகளை உட்கொள்வது பாதுகாப்பானதும் மற்றும் குறிப்பிடத்தக்க நல்ல மாற்றங்களையும் நம் உடலில் ஏற்படுத்தும்.</p> <p><b>உடல்அமர்வுநிலை:</b></p> <p>நீங்கள் படுக்கும் உங்கள் மெத்தை யை சில அங்குலங்களுக்கு உயர்த்திக்கொள்ளுங்கள். உங்களுடைய கால்கள் உங்கள் இடுப்பை விட உயரமாக இருக்கும்படி பார்த்துகொள்ளுங்கள். நீங்கள் காயிச்சலிலோ அல்லது வேறு ஏதாவது நோயினாலும் பாதிக்கப்பட்டு உங்கள் மெத்தையின்</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>மீது அமர்ந்தவாரே ஓய்வில் இருப்பீர்கள் என்றால் உங்களால் எவ்வளவு முடியுமோ அந்த அளவிற்கு படுக்கையை விட்டு எழுந்து அடிக்கடி நடைபயிற்சி மேற்கொள்ளுங்கள்.</p> <p><b>நடைபயிற்சி:</b></p> <p>முடிந்த அளவிற்கு நீண்ட நேரமாக நாற்காலியில் உட்கார்ந்திருக்கும் பழக்கத்தை தவிர்த்துக் கொள்ளுங்கள். அவ்வப்போது நாற்காலியில் இருந்து எழுந்து அங்குமிங்கும் சிறிது நேரம் நடக்கவும், தினமும் 30-60 நிமிடம் சுறுசுறுப்பான உற்சாகமான நடைபயிற்சியை செய்யுங்கள். நம்முடைய குறிக்கோள் இரத்தம் ஒரே இடத்தில் தேங்கி நிற்பதை தடுப்பதும், நடக்கும்போதும் அசையும்போதும் கால்களில்</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>இரத்த ஓட்டம் சீராக இருக்குமாறு செய்வதுமே ஆகும். ஒழுங்கான உடற்பயிற்சியை கெண்டைக்கால் தசைகளின் மூலம் செய்வதும், இரத்த ஓட்டத்தை சீராக்கும். நாம் உட்கார்ந்து இருக்கும்போது கெண்டைக் கால் தசை உடற்பயிற்சியை மேற்கொள்ளலாம்.</p> <p>இரத்த அழுத்தத்தை ஒழுங்காக கண்காணிப்பது: உங்களின் இரத்த அழுத்தத்தை தினமும் ஒழுங்காக கண்காணித்து தனியாக ஒரு பதிவேட்டில் குறிப்பு எடுத்துக்கொண்டு உங்கள் மருத்துவரிடம் காட்ட வேண்டும்.</p> <p><b>போதுமான நீரை தினமும் உட்கொள்ளல்:</b> நம் உடலில் நீற்ற நிலை அல்லது உடல்வறட்சி ஏற்படாதவாறு இருக்க தினமும் அதிகமான நீரை</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>அருந்துவது மிகவும் நல்லது. உடல் நீரற்ற நிலையில் இருந்தால் இரத்தமானது மிகவும் கெட்டியாக அல்லது அடர்த்தியாக மாறும் அபாயம் உண்டு. தினமும் 6-8 லிட்டர் வரை நீர் அருந்தி உடல் வறட்சியை தடுக்க வேண்டும்.</p> <p><u>செந்நிற திராட்சை ரசத்தை குடித்தல்:</u> மிதமான அல்லது போதுமான அளவு சிவப்புநிற திராட்சை ரசத்தை நாம் குடிக்கும்போது அதிலுள்ள ஃபிளாவனாய்டுஸ் என்ற பொருள் இரத்தக்கட்டி உருவாவதை தடுக்கும் இரத்தக்கட்டுகளை தோற்றுவிக்கிறது. இது ஆராய்ச்சியின் மூலம் நிரூபிக்கப்பட்டுள்ளது.</p> <p><u>புகைபிடித்தலை தவிர்ப்பது அல்லது நிறுத்துவது:</u></p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>சுறுசுறுப்பாக இருப்பதற்கு புகைபிடிக்கும் பழக்கத்தையும், புகையிலையையும் விட்டு விட வேண்டும். நல வாழ்விற்கு உறுதுணையாக இருக்கும் ஆரோக்கியமான உணவுப் பழக்கவழக்கங்களை மேற்கொள்வதன் மூலம் இரத்தக் குழாய் அடைப்பை தவிர்க்கலாம்.</p> <p><b>மதுவை தவிர்ப்பது :</b></p> <p>மது மற்றும் தேநீர், காபி, சோடா இவற்றை தவிர்ப்பது நல்லது. ஏனெனில் இவை அனைத்தும் மிதமாக சிறுநீர் ஊக்கிகளாக செயல்படுகின்றன. இத்தகைய பாணங்கள் உடலில் வறட்சி நிலையை ஏற்படுத்தும் காரணிகளாக அமையும்.</p> <p><b>செயலற்ற நிலையில் இருப்பதை தவிர்ப்பது:</b></p> <p>நீண்ட நேரமாக ஒரே நிலையில் அமர்ந்திருப்பதோ</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>அல்லது படுத்திருப்பதோ கூடாது. இந்த நிலையில் இருக்கும் போது உங்கள் கால்களை குறுக்காக வைத்தல் கூடாது. இந்த நிலையில் இருக்கும் போது உங்கள் கால்களை குறுக்காக வைத்தல் கூடாது. இது உங்கள் இரத்த ஓட்டத்தை கட்டுப்படுத்தும்.</p> <p><u>பெண்மை இயக்குநரின் (ஈஸ்ட்ரோஜன்) பக்க விளைவுகளை சமாளிக்கும் முறைகள்:</u></p> <p>சிறுநீர் தேக்கம், வயிற்று உப்பசம் (அ) பொருமல், மார்பகங்களில் வலியுணர்வு மற்றும் வீக்கம், வாந்தி மற்றும் குமட்டல், கால்தசை நார்ப்பிடிப்பு, தலைவலி, அஜீரணம் போன்ற விளைவுகள் ஏற்படும். இத்தகைய பின்விளைவுகளை தடுக்க வேண்டும் எனில் நம்முடைய வாழ்க்கை</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>முறையில் ஈஸ்ட்ரோஜன் மாத்திரைகளை உணவுடன் சேர்த்துக் கொள்ளும்போது வாந்தி, குமட்டல், உணவு செரிமானம் ஆகாமல் இருத்தல் போன்றவற்றை தவிர்க்கலாம். குறைந்த அளவு கொழுப்பு உணவுகளையும், அதிக அளவு மாவுச்சத்து உணவுகளையும் உட்கொள்ளும்போது மார்பகவலியைக் குறைத்து கொள்ளலாம். நிலையான நீட்டும் உடற்பயிற்சியை செய்யும் போது கால்தசை நார்ப்பிடிப்புகளில் ஏற்படும் வலியை குறைக்கும்.</p> <p><b>தூக்க மாத்திரைகள் உட்கொள்வதை தவிர்ப்பது:</b></p> <p>தூக்க மாத்திரைகளை நாம் அடிக்கடி பயன்படுத்துவதால், அது நம்மை அசைவற்ற நிலைக்கு கொண்டு செல்லும்.</p>			



நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p><u>உடை உடுக்கும் முறை:</u> உடையானது உங்கள் உடலின் இயக்கத்தை கட்டுப்படுத்துவதாக இருக்கக்கூடாது. இறுக்கமான உள்ளடைகளை தவிர்ப்பது நல்லது.</p> <p><u>நிலையான நீட்டும் உடற்பயிற்சியை வழக்கமாக கடைபிடிப்பது:</u> உடல் ஓய்வு எடுக்கும்போது இந்த பயிற்சியை மேற்கொள்ளும்போது இது பல விதமான உத்திகளை ஒன்றுபட்டு உருவாக்கி உடலை அமைதிப்படுத்துகிறது. இதை நீங்கள் முறையாக செய்யும் போது உங்கள் மன அழுத்தத்தை விடுவிக்கும் மற்றும் உங்கள் மூட்டுகளில், தசை நரம்புகளில் காயம் ஏற்படுவதை தடுக்கிறது.</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p><b>தொடர் நடவடிக்கைகளில் ஆலோசனை:</b></p> <p>வலி மற்றும் தொடு வலியுணர்வு, நீர்க்கட்டுகள், தோளின் மீது பட்டை பட்டையாக தடிப்பு விழும் நோய், அதிக வெப்பத்தை உணர்ந்தாலோ உடனடியாக மருத்துவரை அணுகுங்கள்.</p> <p><b>நிலையான நீட்டும் உடற்பயிற்சி:</b></p> <p>நிலையான நீட்டும் உடற்பயிற்சியை ஒரே மாதிரியாக செய்வதன் மூலம் அது வளைந்து கொடுக்கும் தன்மையையும் மூட்டுகளில் ஒரே மாதிரியான இயக்கத்தையும் ஏற்படுத்துகிறது. இதில் முக்கியமான 5 பயிற்சிகள் உள்ளன :</p> <p>1. துவாலை நீட்டுதல்</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
	பங்களிப்பு நோக்கங்கள்	<p>2. நின்ற நிலையில் பின்னங்கால் தசையை நீட்டுதல்</p> <p>3. கணுக்கால் நரம்பு வளைந்து கொடுப்பதற்கு கைகள் மூலம் பயிற்சி செய்தல்</p> <p>4. குதிகால் உயர்த்துதல்</p> <p>5. அரைமண்டியில் உட்காருதல்</p> <p><b>இப்பயிற்சியின் பின்னால் காணப்படும் அறிவியல் ரீதியான (அ) சம்மந்தப்பட்ட உண்மைகள் :</b></p> <p>➤ நிலையான நீட்டும் உடற்பயிற்சி பெரும்பாலான தசைகளின் சுருக்கத்தை கட்டுப்படுத்துகிறது.</p>			
	இரத்தக் குழாய் அடைப்பை				

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
20 நிமிடம்	<p>தடுப்பதற்காக செய்யப்படும் நிலையான நீட்டும் உடற்பயிற்சியின் செயல் முறையை விளக்குதல்</p>	<p>நிலையான நீட்டும் பயிற்சியினை நாம் வேலையை முடித்து விட்டு வந்தவுடன் செய்யும்போது மிகவும் பயனுள்ளதாக இருக்கும். அதவாது தசைகளின் சோர்வை நீக்கியும் சுறுசுறுப்பை அதிகரிக்கவும் செய்யும்.</p> <p>ஆற்றல் குறைக்கப்படுகின்றது.</p> <p><b>இப்பயிற்சியின் முன்னும் பின்னும் மேற்கொள்ள வேண்டிய வழி முறைகள் :</b></p> <ul style="list-style-type: none"> <li>➤ உடல் நல உறுதி வாய்ந்த இந்த நீட்டுதல் பயிற்சியை செய்வதற்கு முன் உங்களை தயார்ப்படுத்திகொள்ளுங்கள்</li> <li>➤ உங்கள் உடம்பில் எந்த இடத்தில் இறுக்கத்தை உணருகிறீர்களோ அல்லது நீட்டுவதற்கு எதிர்ப்பு எங்கு இருக்கிறதோ</li> </ul>	<p>ஆராய்ச்சியாளர் நிலையான நீட்டும் உடற்பயிற்சியை செயல் முறையால் விளக்கிக் காண்பித்தல்</p> <p>கற்பவர் அதை மறுபடியும்</p>		

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>அந்த இடத்தை நோக்கியே நீங்கள் நீட்டுதல் பயிற்சி மேற்கொள்ள வேண்டும். நீங்கள் இப்பயிற்சியை செய்யும்போது நீங்கள் வலியை உணரக்கூடாது.</p> <p>&gt; நீங்கள் நீட்டுதல் பயிற்சி செய்யும் போது இயல்பான மூச்சு விடுதலை உறுதி செய்து கொள்ளுங்கள். உங்கள் மூச்சை பிடித்து வைத்துக் கொள்ள வேண்டாம்.</p> <p>&gt; பயிற்சியின் போது எச்சரிக்கை என்னவென்றால் நீங்கள் தசையை நீட்டும் போது சுற்றியுள்ள மூட்டுகளில் வலி இருந்தால் நீங்கள் செய்யும் பயிற்சி முறை தவறானது. அதை அசட்டை செய்ய வேண்டாம்.</p>	<p>செய்து காண்பித்தல்</p>		

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>➤ மேலே சொல்லப்பட்ட அறிகுறிகளை நீங்கள் அனுபவித்தால் பயிற்சி செய்வதை நிறுத்திவிடுங்கள்.</p> <p>➤ நெஞ்சு வலியோ அல்லது வேறு விதமான வலியோ இருந்தால் அது மாரடைப்புக்கு அறிகுறியாக இருக்கும் . இதோடு கழுத்தை சுற்றிலும் வலி, தாடை எலும்பில் வலி, வலியானது மேற்கையில் ஆரம்பித்து கீழ் நோக்கி பயணம் செய்தாலோ அல்லது பின்புறத்தோள் எலும்புகளில் இடையே வலி இருந்தாலோ அது மாரடைப்புக்கான அறிகுறி ஆகும்.</p> <p>➤ உச்ச நிலையில் மூச்சுவிட முடியாமல் இருப்பது.</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>பயிற்சி செய்யும் போது மிக தீவரமான அல்லது ஒழுங்கற்ற இதய துடிப்பு இருத்தல்.</p> <p>நிம்மதியின்மை (அ) அசௌகிரியம் மற்றும் வலி, பயிற்சியை முடித்த பின் அமைதியான நிலைக்கு திரும்பி ஓட்டமோ அல்லது, சுறுசுறுப்பான உற்சாகமான நடையையே மேற்கொள்ளுங்கள். 5 அல்லது 10 நிமிட பயிற்சி உங்கள் தசைகளின் வலியையும், பிடிப்பும் மற்றும் திமிர்ப்பு தன்மையையும் குறைத்துவிடும். இந்த பயிற்சியை முடித்ததும் அதிகமான அளவிற்கு நீரை அருந்தி உடல் வறட்சி இல்லாமல் பார்த்துக்கொள்ளுங்கள். பயிற்சிக்கு பின் மதுவோ, தேநீரோ அல்லது காபியோ குடிக்க</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>வேண்டாம். இத்தகைய பானங்கள் நீரிழம்பை ஏற்படுத்தும்.</p> <p>1. <u>துவாலை நீட்டுதல்</u> :</p> <p><u>பின்பற்ற வேண்டிய படிநிலைகள்</u> :</p> <ul style="list-style-type: none"> <li>✓ சமதள தரையில் உட்கார்ந்து ஒரு காலை மட்டும் உங்களுக்கு முன்பாக நீட்டுங்கள்.</li> <li>✓ உங்கள் பாதத்தை துவாலையில் சுற்றிகொள்ளுங்கள். உங்கள் உடம்பை நோக்கி துவாலையை இழுங்கள்.</li> <li>உங்களுடைய முழங்கால் நேராக இருக்க வேண்டும்.</li> <li>✓ 15-30 நொடி வரை இதே நிலையில் இருக்க வேண்டும். இதை மூன்று முறை திரும்ப</li> </ul>			



நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>திருமபச் செய்யுங்கள்.</p> <p>✓ உங்கள் கெண்டைக்கால் தசையில் தசையில் இந்த பயிற்சியை துவாலை நீட்டுதல் கொண்டு தொடங்குங்கள். இந்த நீட்டுதல் பயிற்சியை செய்யும்போது துவாலையை மெதுவாக இழுக்கவும், அதிகமான வலி உண்டாகுமாறு இழுக்க வேண்டாம்.</p> <p>2. <u>நின்ற நிலையில் பின்னங்கால் தசையை நீட்டுதல்:</u></p> <p><u>பின்பற்ற வேண்டிய படிநிலைகள்:</u></p> <p>✓ சுவர்புறமாக திருமபி உங்கள் கரங்களை அளவுக்கு உங்கள் கண்களின் அளவுக்கு நேராக வைப்புகள்.</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>✓ ஒரு காலை குதிகால் மூலமாக தரையில் வைத்து மறுகாலை முன்புறமாக வைக்கவும். உங்கள் பின் பாதங்களை உள்ளாக திருப்பி மெதுவாக சுவரில் சாய்ந்து உங்கள் கெண்டைக் கால் தசையில் நீட்சியை உணரும் வரை பயிற்சியை செய்யுங்கள்.</p> <p>✓ 15 முதல் 30 நொடி வரை அப்படியே இருங்கள். மூன்று முறை திரும்பச் செய்யவும். இந்த பயிற்சியை தினமும் மூன்று முறை செய்ய வேண்டும்.</p> <p>3. <b>கணுக் கால் நரம்பு வளைந்து கொடுப்பதற்கு கைகள் மூலம் பயிற்சி செய்தல்:</b>  <b>பின்பற்ற வேண்டிய படிநிலைகள் :</b></p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>✓ நீங்கள் மல்லாந்த நிலையில் தரையில் படுத்து உங்கள் முழங்கால்களை நன்றாக நீட்டி கொள்ளுங்கள்.</p> <p>✓ உங்கள் கெண்டைக் கால் தசைகளையும் கீழ்காலில் தசைகளையும் ஒரு நீட்சியில் வட்டு கொண்டு உங்கள் கால்களில் உள்ள மூட்டை சுற்றி கொண்டு உறுதிப்படுத்தி கொள்ளுங்கள்.</p> <p>✓ இரு முனைகளையும் உறுதியாக பிடித்துக் கொள்ளுங்கள்.</p> <p>✓ உங்கள் பாதத்தில் உள்ள மூட்டை கொஞ்சம் கொஞ்சமாக பிடித்துக் கொண்டே நீட்சியியல் பயிற்சியை மேற்கொள்ளுங்கள்.</p> <p>ஆரம்ப நிலைக்கு வந்து விடுங்கள்.</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>✓ இந்த பயிற்சியை தினமும் மூன்று மூறை செய்ய வேண்டும்.</p> <p>4. குதிகால் உயர்த்துதல் : பின்பற்ற வேண்டிய படி நிலைகள்:</p> <p>✓ ஒரு நாற்காலிக்கு பின்னாக நின்று உங்களை நீங்களே சமன் செய்து கொள்ளுங்கள்.</p> <p>✓ உங்கள் குதிகாலை உயர்த்தி உங்கள் உடம்பை உயர்த்திக் கொள்ளுங்கள்.</p> <p>5 நொடிகளுக்கு இப்படியே இருங்கள்.</p> <p>பிறகு மெதுவாக பழைய நிலைக்கு வரவும்.</p> <p>✓ உங்களுக்கு தேவைப்பட்டால் நாற்காலியை பிடித்துக்கொள்ளுங்கள்.</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>✓ இந்த பயிற்சியில் மிக குறைந்த வழியை மட்டுமே நீங்கள் உணர்ந்தால் அடுத்த காலையும் இந்த பயிற்சிக்கு பயன் படுத்துங்கள். பத்து முறை திரும்ப திரும்பச் செய்யுங்கள். இந்த பயிற்சியை தினமும் மூன்று முறை செய்வது நல்லது.</p> <p>5. <u>அரைமண்டியில் உட்காருதல்:</u>  <u>பின்பற்ற வேண்டிய படிநிலைகள்:</u></p> <p>✓ ஜன்னல் ஓரத்திலோ, நாற்காலியின் அருகிலோ சோபாவின் பின்புறமாகவோ நிற்கவும்.</p> <p>✓ உடலின் மேற்புறத்தை நிமிர்த்தி வைத்துக் கொண்டு முழங்கால்களை மெதுவாக மடக்கி வசதியாக ஒரு பிடிமானத்தின்</p>			

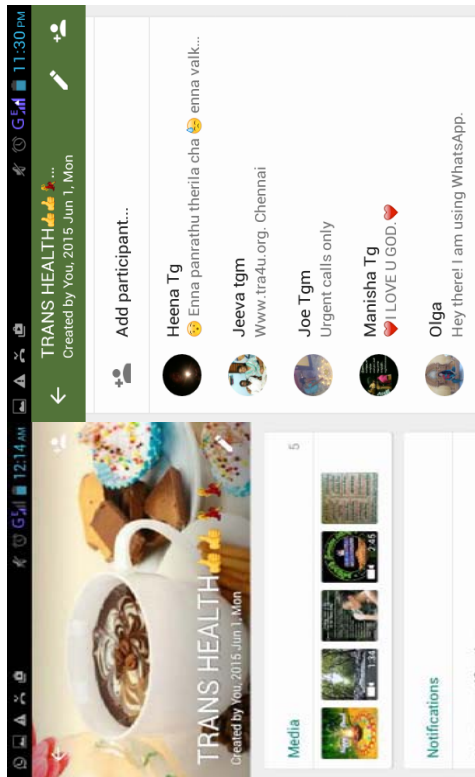
நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்பாய்வு
		<p>உதவியுடன் அரை மண்டி போடவும்.</p> <p>✓ உங்கள் தோள்கள், இடுப்பு, குதிகால் அனைத்தும் ஒரே நேர்க்கோட்டில் இருக்க வேண்டும். 10 நொடிகள் இதே நிலையில் இருக்கவும்.</p> <p>✓ பிறகு மெதுவாக எழுந்து நிற்கவும். இப்பயிற்சியினை 4-5 முறை திரும்ப திரும்பத் செய்யவும். இப்பயிற்சி நம் குதிகால் மூட்டினை நன்முறையில் வைத்திருக்க உதவும்.</p> <p><b>முடிவுரை :</b> மேலே கூறப்பட்ட அனைத்து பயிற்சி முறைகளும், சிரையில் இரத்தக்கட்டி ஏற்படுவதை தடுப்பதற்கான வழிவகைகளாகும். அதனை தடுப்பதே இப்பாடத்திட்டத்தின் முழுமையான</p>			

நேரம்	பங்களிப்பு நோக்கங்கள்	உள்ளடக்கம்	ஆராய்ச்சியாளர் கற்பவர் செயல்திறன்	ஒலியுடன் கூடிய காட்சி உதவி பொருட்கள்	மதிப்- பாய்வு
		நோக்கமாகும்.			

**APPENDIX – O**  
**PHOTOGRAPHS**









*Oral consent obtained for publishing photographs in Research Dissertation Book*

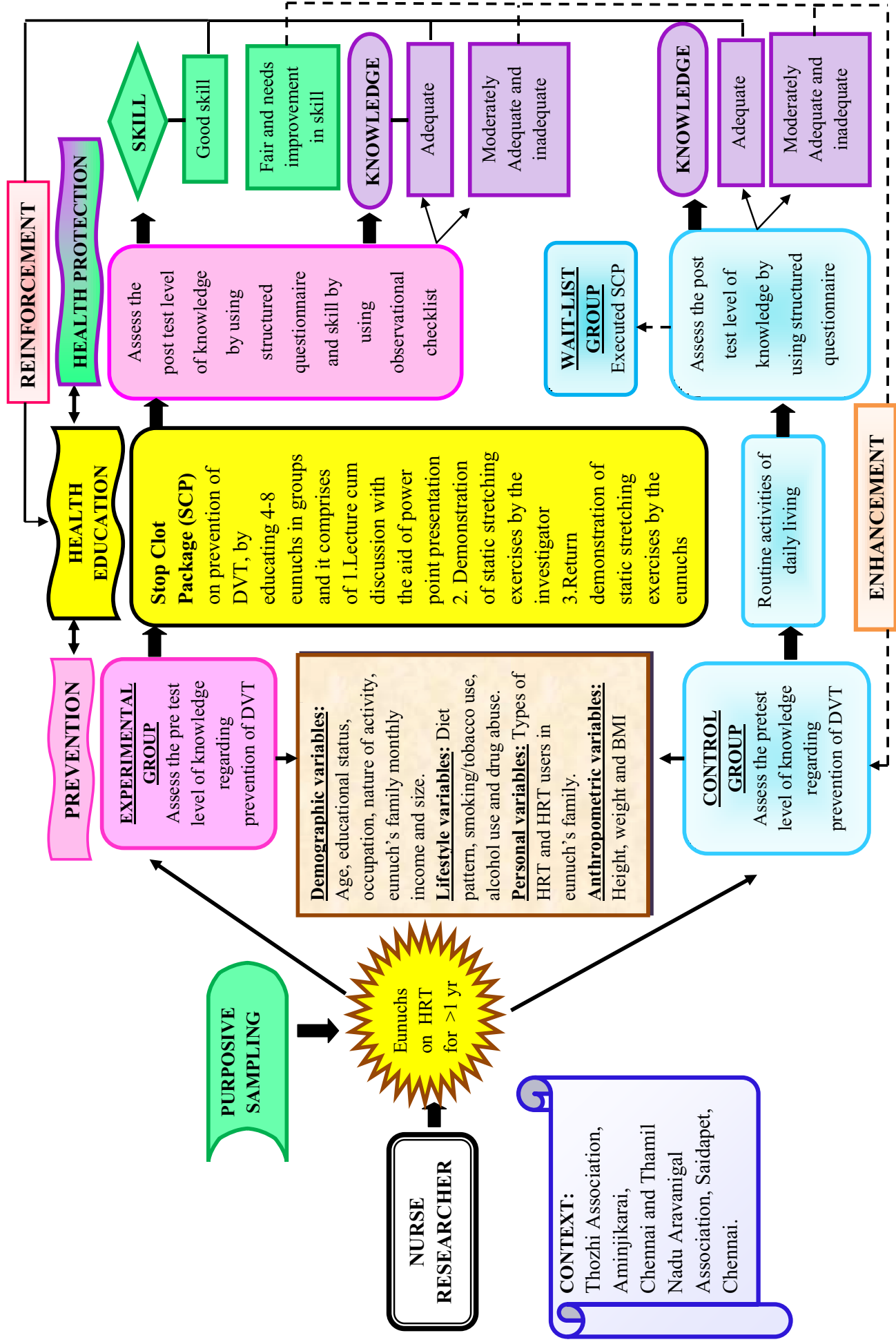


Figure 1.9.1 CONCEPTUAL FRAMEWORK BASED ON TANNAHILL'S MODEL OF HEALTH PROMOTION

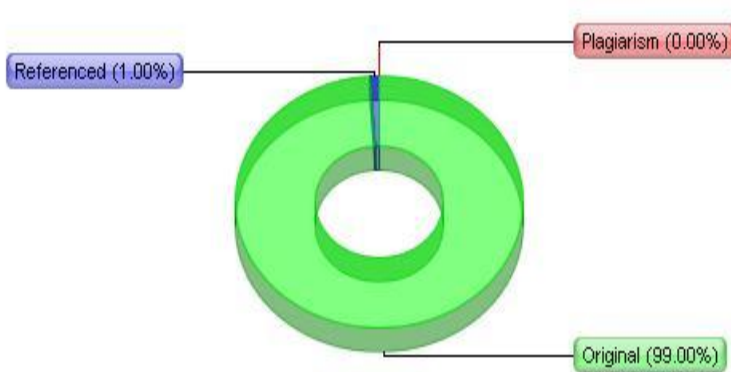
APPENDIX – M

# Plagiarism Detector - Originality Report:

Analyzed document:

## "Monicka J.V.docx"

Relation chart:



Core version:

902

Size:

119743 words

Registered to:

Dr. Kanchana Khan\_License2

Generated:

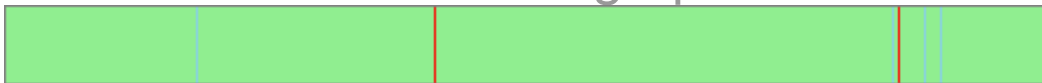
2/12/2016 3:47:13 PM

License type:

Plagiarism Detector

ChartDirector (unregistered) from www.advsofteng.com

Distribution graph:



Top sources of plagiarism:

Top referenced sources:

Processed resources details:

86 - Ok / 20 - Failed

Important notes:

Wikipedia:



[not detected]

Google Books:



[not detected]

Ghostwriting services:



[not detected]

Anti-cheating:



[not detected]

# திருநங்கையரின் ஆரோக்கியம்



தொகுப்பாளர்

மோனிக்கா. ஜே.வி

முதுநிலை இரண்டாம் ஆண்டு

உமையாள் ஆச்சி செவிலியர் கல்லூரி

முதுநிலை செவிலியரின்

தமிழ்நாடு டாக்டர் எம். ஜி. ஆர் மருத்துவ பல்கலைக்கழகத்தின்

கீழ்ப்பகுதி நிறைவேற்றுதல்

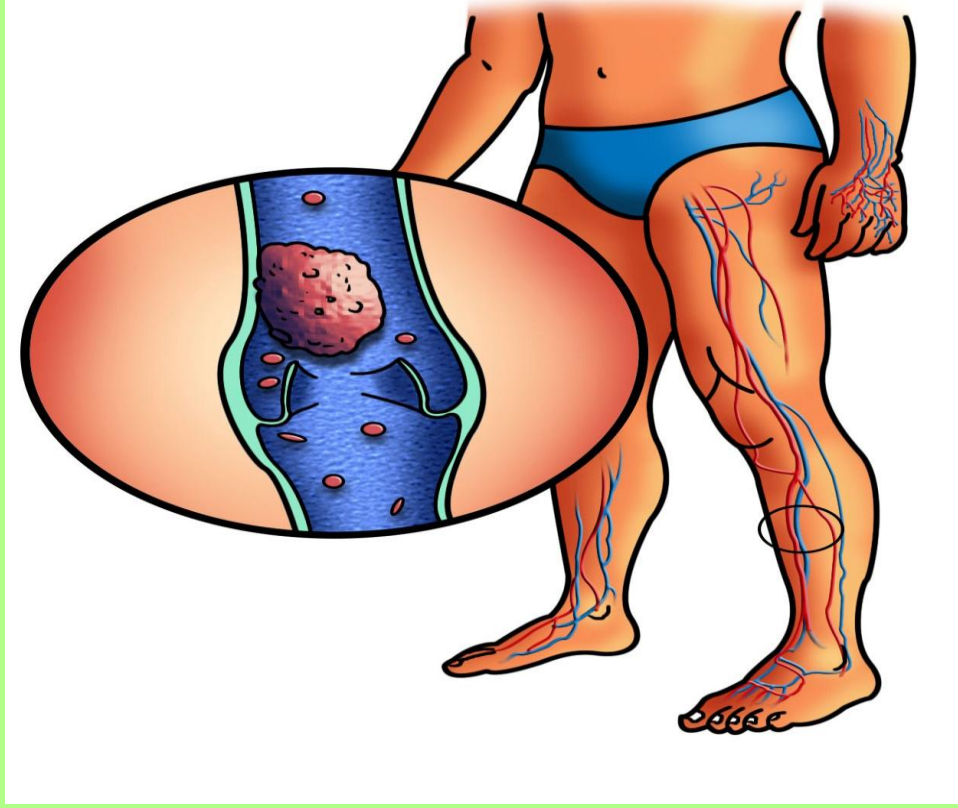
ஏப்ரல் 2015

## அட்டவணை

வ. எண்	உள்ளடக்கம்	பக்கம் எண்
1	இரத்தக்குழாய் அடைப்பு என்பதன் விளக்கம்	3
2	காரணங்கள்	3
2.1	மற்ற அபாய காரணிகள்	4-7
3	நோயின் அறிகுறிகள்	8,9
4	நோய் ஆய்வுறுதி	9,10
5	சிகிச்சை முறைகள்	11
6	பின் விளைவுகள்	11,12
7	தடுக்கும் வழிமுறைகள்	12-16
7.1	நிலையான நீட்டும் உடற்பயிற்சி	17-19

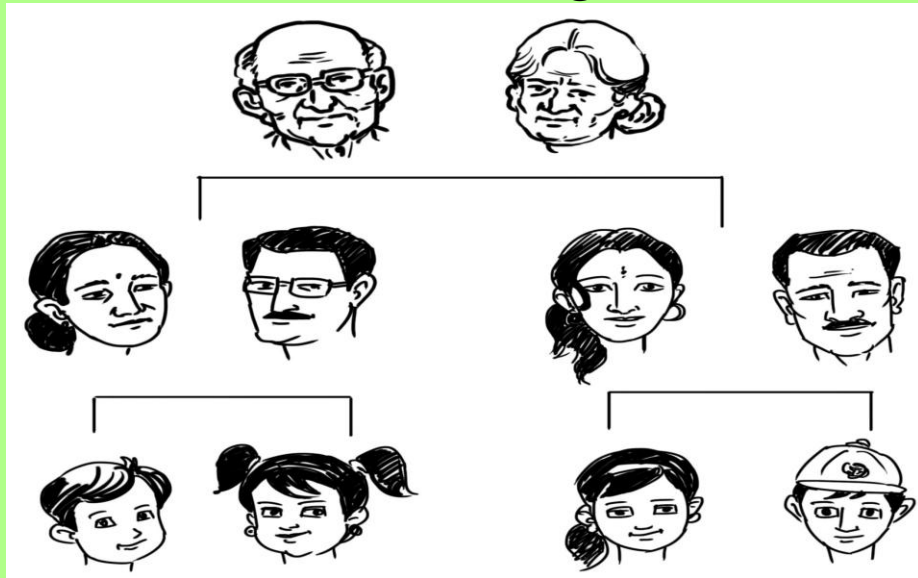


## 1. இரத்தக்குழாய் அடைப்பு என்பதன் விளக்கம்



## 2. காரணங்கள்

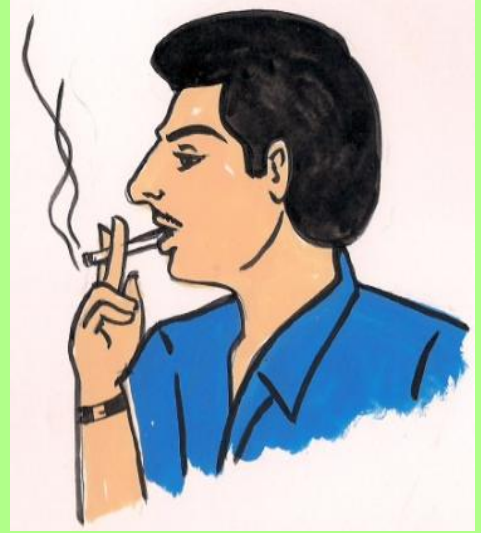
குடும்ப வரலாறு



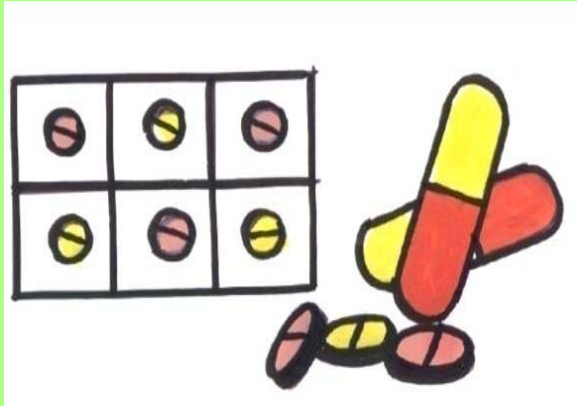


உடல் பருமன்

புகை பழக்கம்



## 2.1 மற்ற அபாய காரணிகள்



பிறப்பு  
கட்டுப்பாடு  
மாத்திரைகள்

அதிக அளவில் ஈஸ்ட்ரோஜன் மாத்திரைகள்  
உட்கொள்ளுதல்



நீண்ட நேரம் அமர்ந்திருத்தல்



முதுமை



பக்கவாதம்

இதய  
பலவீனம்

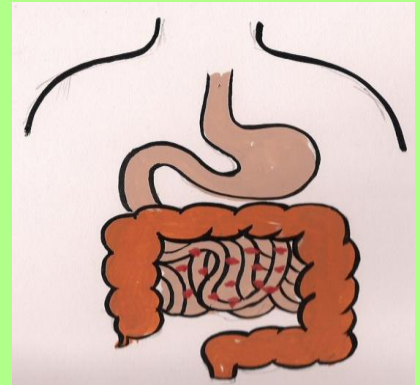


## அறுவை சிகிச்சை



படுக்கையில்  
நீண்ட நேரம்  
ஓய்வு

குடல் அழற்சி  
நோய்



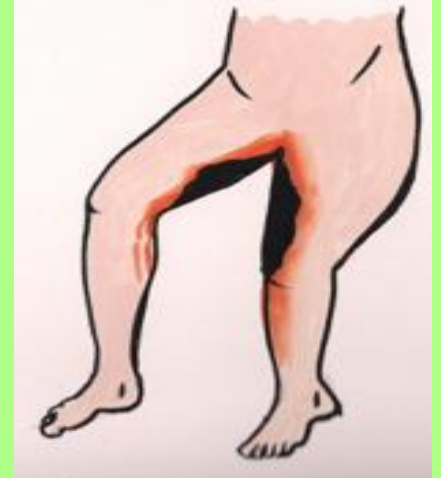
### 3. நோயின் அறிகுறிகள்

கால் வலி

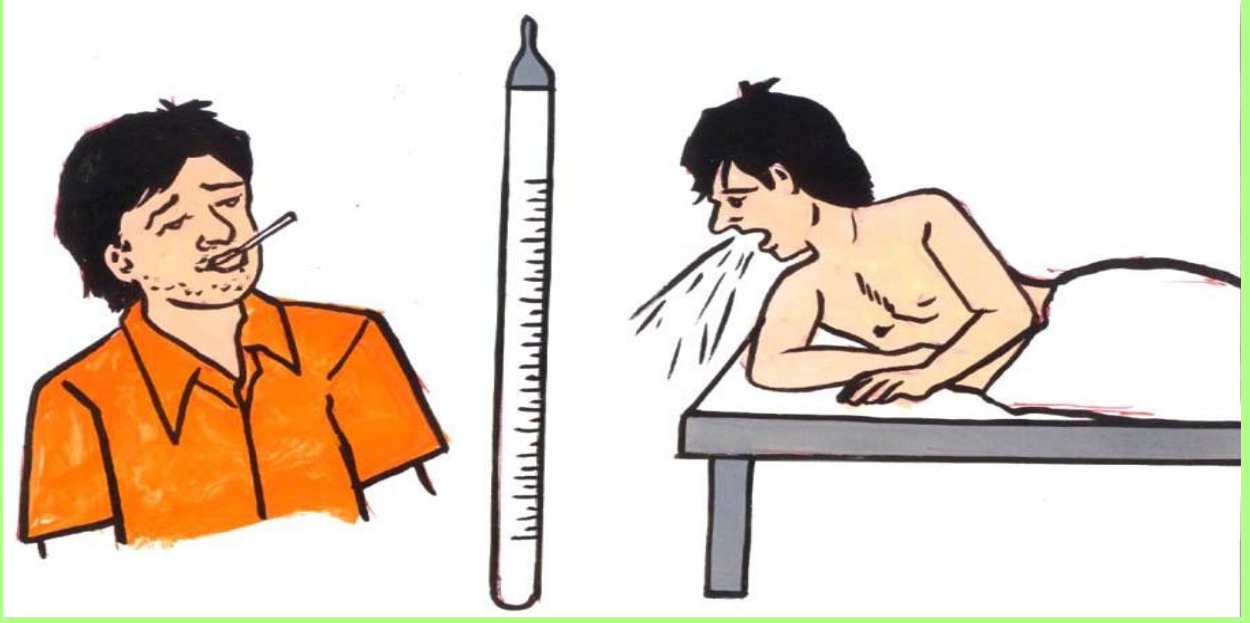


கால் வீக்கம்

தோல் நிறம்  
மாற்றமடைதல்



காய்ச்சல்



4. நோய் ஆய்வுறுதி

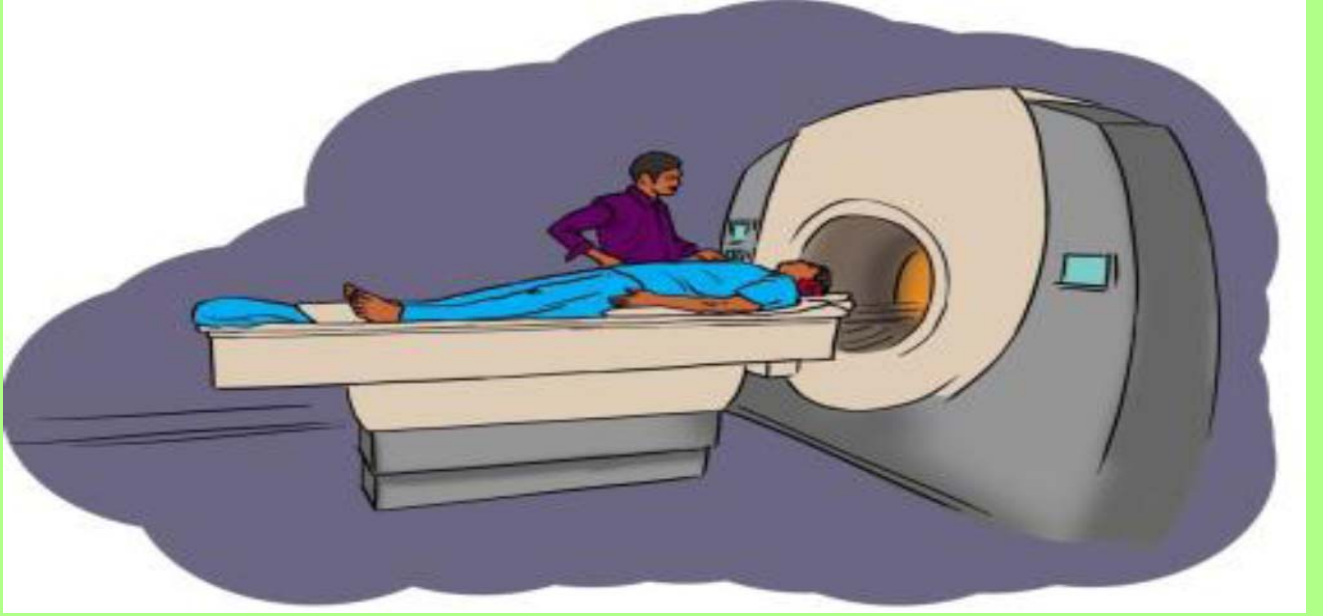
அல்ட்ரா சவுண்ட்



## இரத்த பரிசோதனை



## சிடி ஸ்கேன்



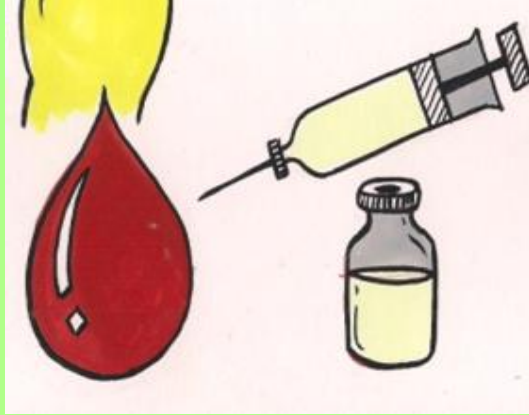
## ரத்தநாளப் படம்



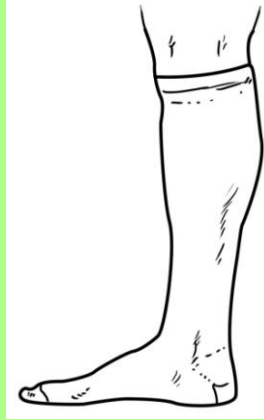


## 5. சிகிச்சை முறைகள்

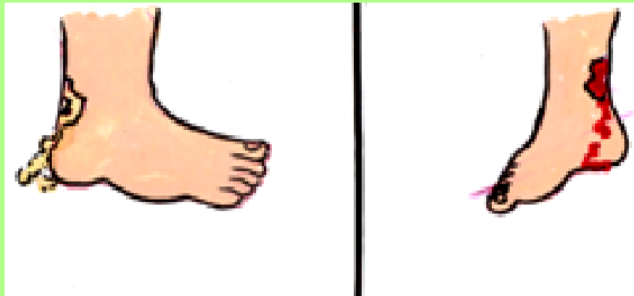
உறைவு உடைப்பு மருந்துகள்



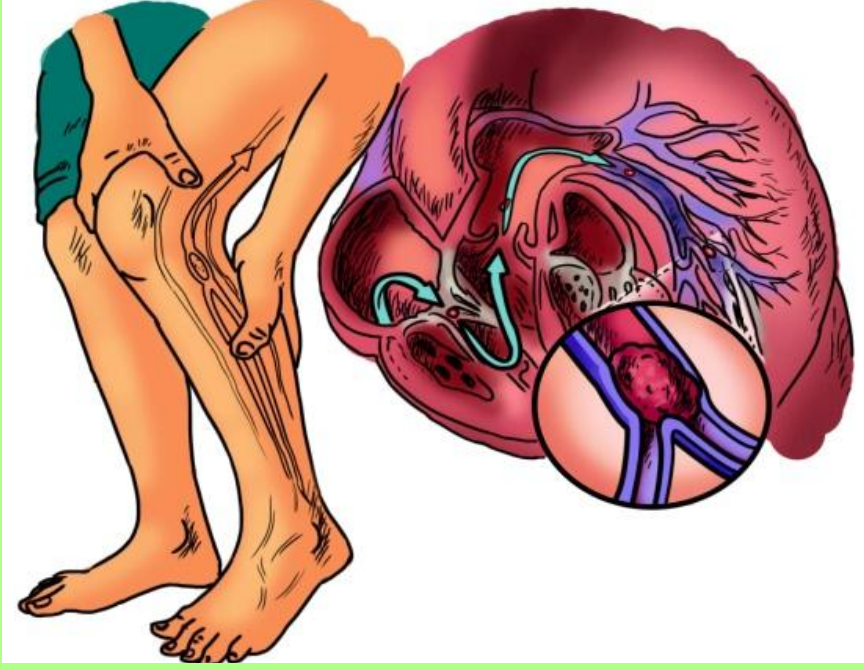
அழுத்தம்  
தரும்  
காலுறைகள்



## 6. பின் விளைவுகள்



சிரை  
அழுத்தம்



நுரையீரலில்  
அடைப்பு

## 7. தடுக்கும் வழிமுறைகள்

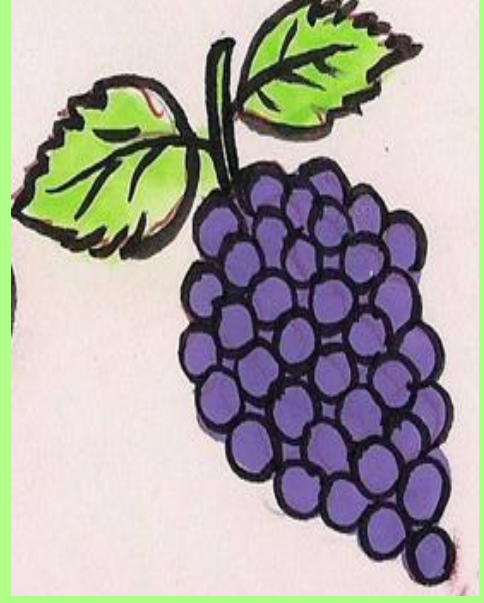
மது அருந்துதல் மற்றும் புகைபிடித்தலை தவிர்ப்பது



ஆரோக்கியமான  
உணவு



திராட்சை  
சாறு



அதிக  
தண்ணீர்  
குடித்தல்

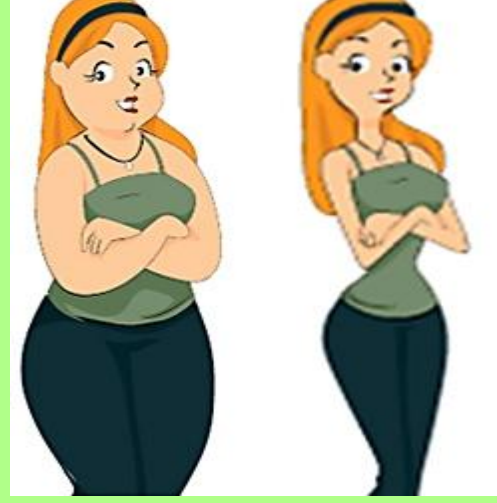


படுக்கும்  
நிலை

சுறுசுறுப்பான  
நடைபயிற்சி



எடை  
கட்டுபாடு



உடற்பயிற்சி

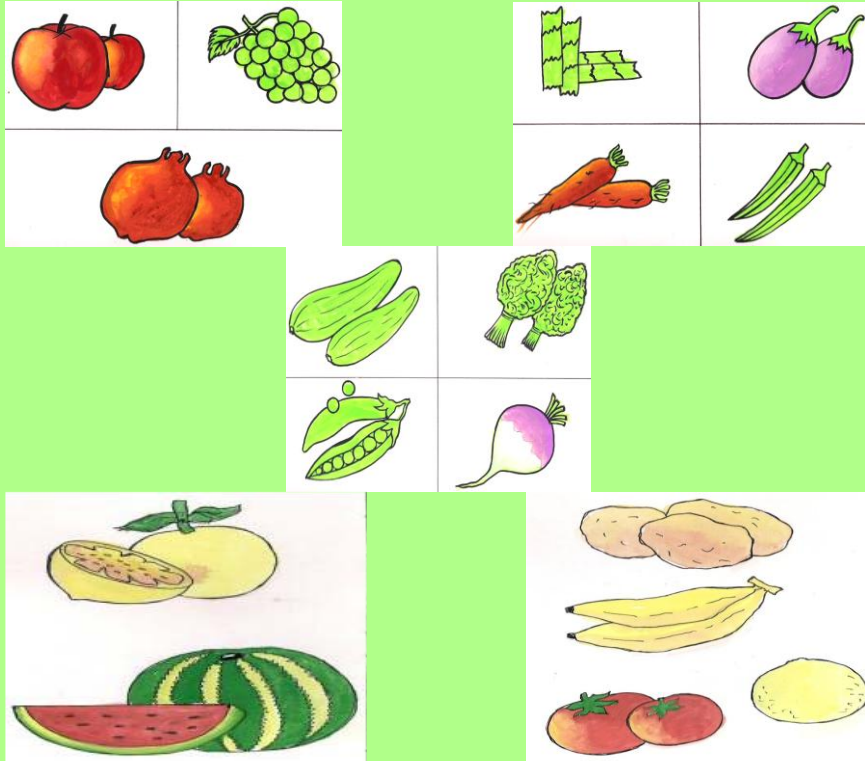


நிற்க  
உதவுதல்

கை மற்றும் கால் பயிற்சிகள்



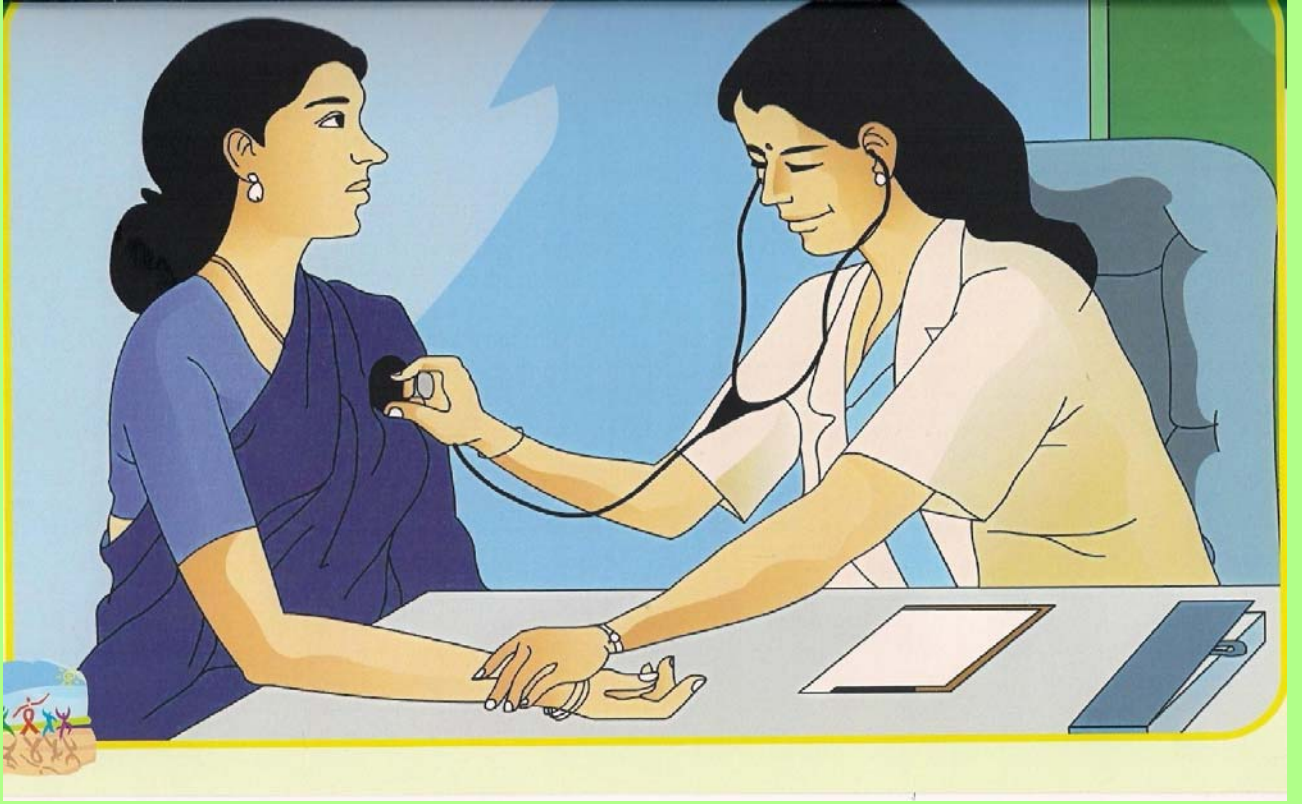
பழங்கள் மற்றும் காய்கறிகள்





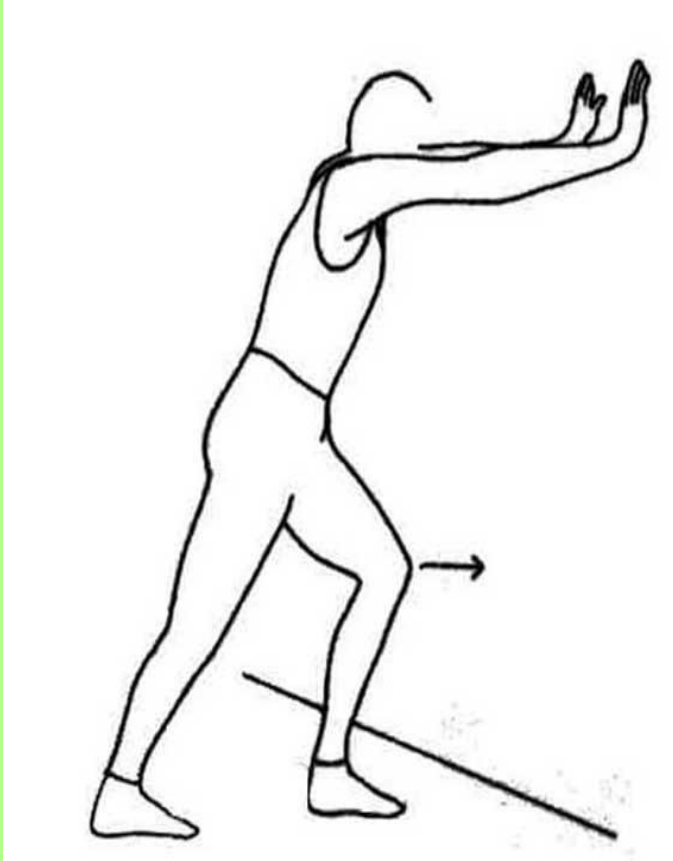
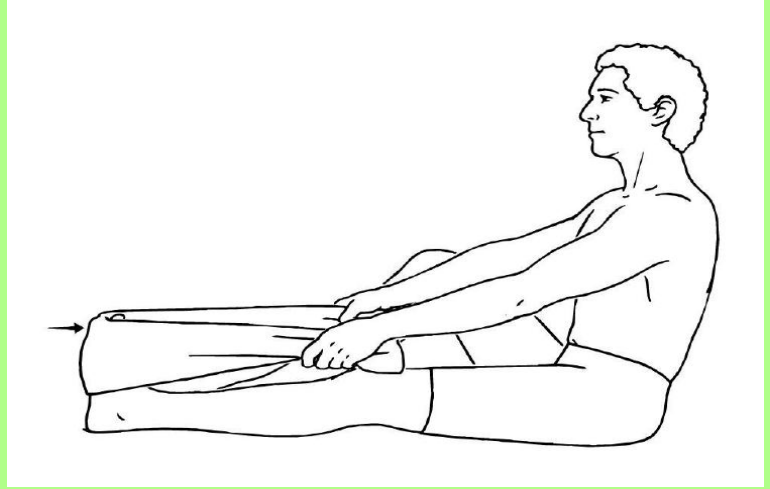
இரத்த  
அழுத்தம்  
கண்காணிப்பு

மருத்துவ ஆலோசனை



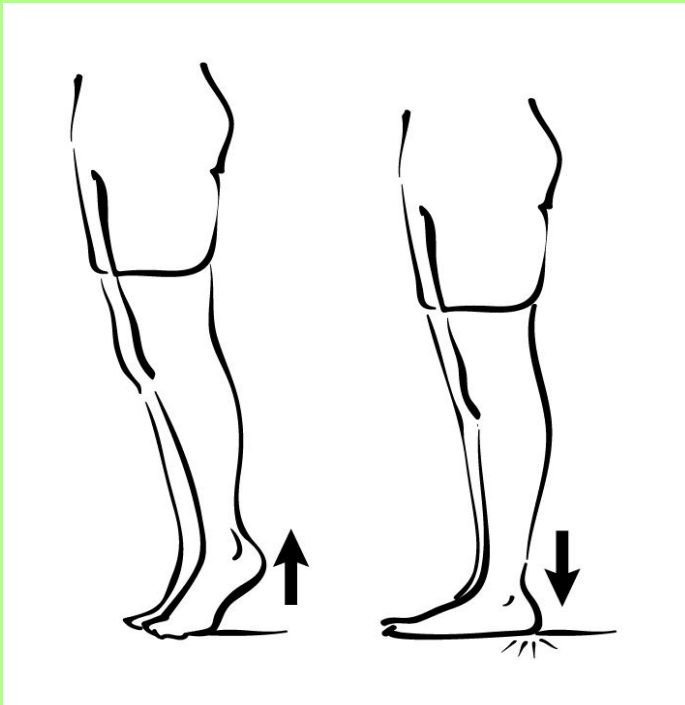
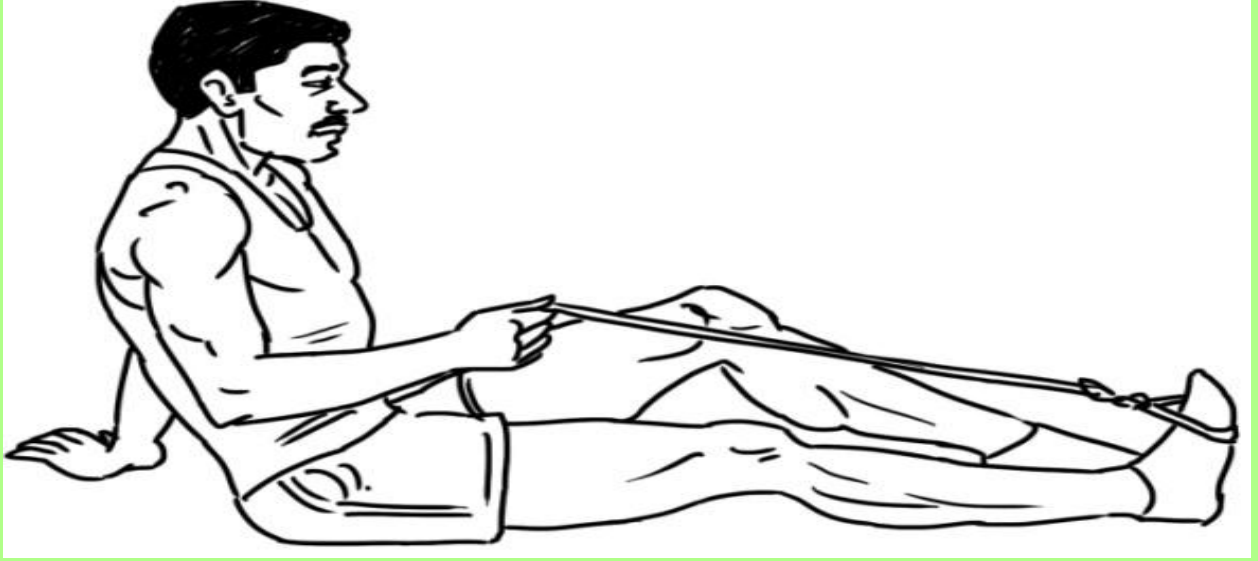
## 7.1 நிலையான நீட்டும் உடற்பயிற்சி

துவாலை  
நீட்டுதல்



நின்ற  
நிலையில்  
பின்னங்கால்  
தசையை  
நீட்டுதல்

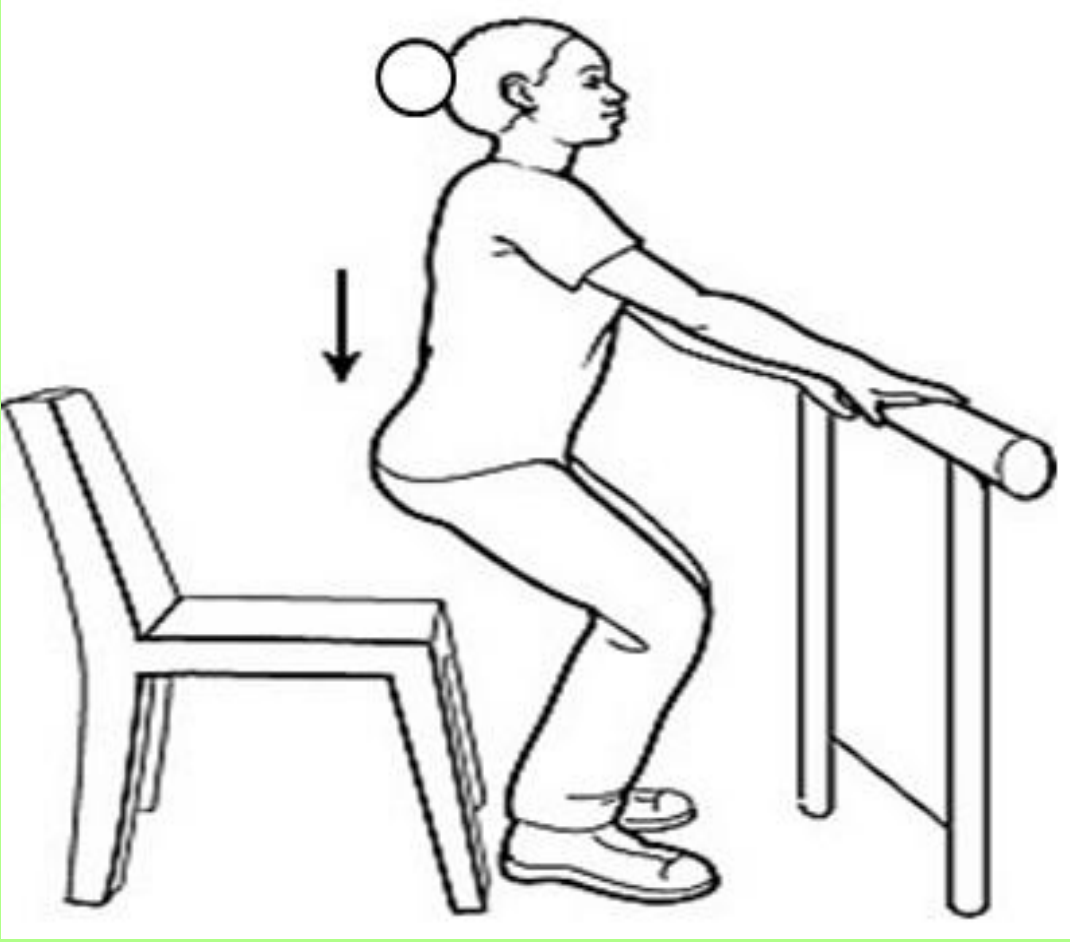
கணுக்கால் நரம்பு வளைந்து கொடுப்பதற்கு கைகள்  
மூலம் பயிற்சி செய்தல்



குதிகால்  
உயர்த்துதல்



அரைமண்டியில் உட்காருதல்



தொடர்பு எண் - 9790938206

