

Prevention of deep vein thrombosis among staff nursing those working in hospital

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Abstract: Deep vein thrombosis (DVT) occurs when a blood clot (thrombus) forms in one or more of the deep veins in the body, most common occur in legs. Deep-vein thrombosis plays a major role in developing ischemic heart disease and stroke. Deep-vein thrombosis plays a major role in developing ischemic heart disease and stroke. VTE is very common and possibly harmful disease that includes combination of deep vein thrombosis and pulmonary embolism (PE). Deep vein thrombosis can be serious condition in blood clots in the veins can break loose. Deep Vein Thrombosis (DVT) is a silent killer, which kills more people than AIDS, breast cancer, prostate cancer and road accidents combined. Globally Thromboembolic conditions were estimated to account for one in every four deaths in 2010 and were considered to be the leading cause of deaths. The incidences is increasing and it is estimated that one in four hospitalized patients possess one or more of the risk factors described which often remain clinically silent. The majority of DVT are related to specific identification trigger factors such as hospitalization, malignancy, major trauma, and prolonged immobility that VTE prophylaxis was not being effectively implemented in the UK. This was also more recently supported by data published in an international audit of risk assessment and thrombo prophylaxis prevention.

Keywords: Deep vein thrombosis, clot.

1. INTRODUCTION

Deep vein thrombosis is a common problem among people who are immobile for a long period of time. Although it is preventable, it is still one of the problems of the people related to poor knowledge and practice of nurses on Deep Vein Thrombosis prevention. There is no study conducted regarding the magnitude of occurrence of Deep Vein Thrombosis among nurses in the study area. Deep vein thrombosis can cause leg pain or swelling. **Deep vein thrombosis (DVT)** is a type of venous thrombosis involving the formation of a blood clot in a deep vein, most commonly in the legs or pelvis. The most common life-threatening concern with DVT is the potential for a clot to embolize (detach from the veins), travel as an embolus through the right side of the heart, and become lodged in a pulmonary artery that supplies blood to the lungs. This is called a pulmonary embolism (PE). DVT and PE comprise the cardiovascular disease of venous thromboembolism (VTE) The mechanism behind DVT formation typically involves some combination of decreased blood flow, increased tendency to clot, changes to the blood vessel wall, and inflammation. It is a common disorder and belongs to the venous thromboembolism disorders. DVTs represent the third most common cause of death from cardiovascular disease after heart attacks and stroke, and account for most cases of pulmonary embolism. Only through early diagnosis and treatment can the morbidity be reduced.

Need for the study

Although there was no significant change in the number of PE cases. the burden of PE has almost doubled Therefore, Clinical nurses can play a major role in improving venous thromboembolism prevention care, assessing venous thromboembolism risks and providing appropriate prophylactic measures to those who are at risk for venous thromboembolism. The reason for this dominant side location is due to the left-sided iliac vein compression syndrome, which explains the starting point of DVT from this location. Prospective studies are needed with more attention about the

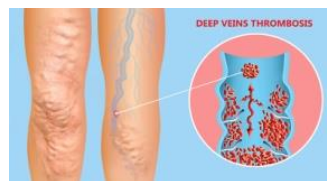
thrombosis of the femoral vein. It could be argued that many thrombosis events in the common femoral vein belonged to the femoral vein, which decreases the severity of post-thrombotic syndrome. Venous thrombo embolism, comprising deep vein thrombosis (DVT) and pulmonary embolism (PE), is a serious clinical and public health concern. As an important health condition that potentially is preventable through implementation of thrombosis risk assessment and evidence-based clinical practice guidelines, VTE is especially a concern for hospitalized patients.

2. REVIEW OF LITERATURE

A retrospective study was conducted on analysis of the risk factor for Deep Vein Thrombosis in the Lower Limbs and Nursing Strategies at , departmental Hospital, Changzhou City, P. R. China .The aim of the study was to analyze risk factors for deep vein thrombosis (DVT) the lower limbs among inpatients and to discuss appropriate Nursing measures. A total patient 32 DVT cases were included, with 17 males and 15 females. The lower limbs, and three cases (9.4%) were asymptomatic. DVT affected the proximal end of the lower limbs (the popliteal vein or its adjacent sites, and the femoral vein) in 30 cases and in the distal end (calf muscle veins) in 2 cases. DVT affected the left lower limb in 15 cases, the right lower limb in 16 cases and the myenteric veins bilaterally in the lower limbs in 1 case. DVT was confirmed on the day of admission in 5 cases, at 2-3 days post-admission in 14 cases, at 4-7 days post-admission in 3 cases, at 8-14 days post-admission in 5 cases, at 15-30 days post-admission in 1 case and at over 30 days post-admission in 4 cases. DVT occurred within one week post-admission in 22 cases (68.8%) and within two weeks post-admission in 27 cases (84.4%). The result shows that Improving the awareness levels of DVT among nursing staff, and identifying and the key to improving the quality of relevant nursing practices. At the same time, improving the guidance given at patient discharge and carrying out continuous nursing are of positive significance in reducing the risk of DVT in patients who are bedridden for long periods of time.

A prospective study was conducted on the cumulative venous thrombo embolism incidence and risk factors in intensive care patients receiving the guideline-recommended thrombo prophylaxis at department Chongqing Medical and Pharmaceutical College, Chongqing, PR China. The aim of the study was to assess the cumulative incidence and identify the risk factor of VTE. Total 281 patient were taken for the study by consecutive sampling. The result shows that over 28 days 25 patients developed VTE, and in ICU patients the length of stay and presence of Central Venous Catheter at femoral site is an independent risk factor for development of VTE. Other factor such as age, sex, BMI, maximum strength muscle , CRRT and platelet transfusion had no influence on the occurrence of VTE.

A descriptive cross sectional study with 308 participating nurses department acute care Turkish hospital .the aim of the study was Knowledge of Pressure Ulcer Risk, Prevention, and Staging. 308 patient nurses socio demographic information and exposure to educational presentations and information the result of the study shows that women (257, 83.4%) with 7.3 ± 7.8 (range 1-36) years of experience. The mean knowledge score for the entire sample was 29.7 ± 6.7 (range 8-42). The overall percentage of correct answers was 60.6% to 61.8% for PU prevention/risk assessment, 60% for wound description, and 56.6% for PU staging.



A quasi-experiment study with pre-test –post-test control group design to assess the effect of nursing care standards in prevention of DVT in adult patients of orthopedic unit at Benha university hospital. The aimed to evaluate the effect of nursing care standards (NCSs) for preventing deep vein thrombosis (DVT) among patients undergoing hip surgery (HS) on nurses' performance and patients' outcome. Total 132 adult patient were selected through purposive sampling .data was collected through four tools:1. Nurses' interview questionnaire staff ,Nurses practice observational checklist,3.Hospital structure checklist and 4.patient's outcome assessment sheet. The result of the study show that the incidence of asymptomatic DVT after a major orthopedic surgery without prophylaxis ranges from 30% to 80% whereas the incidence of symptomatic DVT reportedly ranges from 0.5% to 4%. About 40-50% of untreated symptomatic DVT patients will develop a PE within 3 months and 10% of symptomatic PE cases will die within 1 hour of onset. Since the diagnosis is difficult and also the treatment is not always satisfactory, the prevention of DVT is obviously essential. The study results also showed that majority of nurses had unsatisfactory performance level (knowledge and practice) regarding Nursing Care Standards for preventing DVT among patients undergoing Hip Surgery and there was a significant increase in knowledge level after the NCSs implementation.

3. METHOD OF MATERIALS

The present study was aimed to assess the level of knowledge regarding prevention of deep vein thrombosis among staff nurses working in selected hospital at Haridwar in order to develop an informational booklet. This chapter deals with research methodology which include research approach ,research design, research setting ,sample and sampling technique used for the study development and description of the tool which include validity and reliability of the tool, pilot study ,data collection and procedure and plan for data analysis.

Sample Size Calculation

Sample size was calculated to be 80 staff nurses .data was collected from n=80 the sample calculation was done with Cochran sample size smaller formula. where

$$n = \frac{n_0}{1 + (n_0 - 1)}$$

n_0 = Based on previous study Sample Size e.g. =100 (Mr.Abin M Antony1 Mrs. K T Moly et-al 2016)

N = Estimate population of Haridwar Hospital (250)

Sample size calculated according to pervious study that was conducted on 2018 study ,researcher selected the actual result of the study and that put up in this formula and the total sample size is 80 considering exclusion criteria and compliance with research study by participation.

4. ANALYSIS

This chapter deals with analysis and interpretation of data which was collected from 80 sample in selected hospital of haridwar. All the data obtained was coded and transformed into master data sheet .data was analyzed and on the bases of the following study objective.

Data analysis and interpretation is the process of assigning meaning to the collected information and determining the conclusions, significance and implications of the findings. It is an important and exciting step in the process of research.

Distribution

Distribution of the sample according to their knowledge score

Table NO. 3 Distribution of the sample according to their knowledge score

$N = 80$

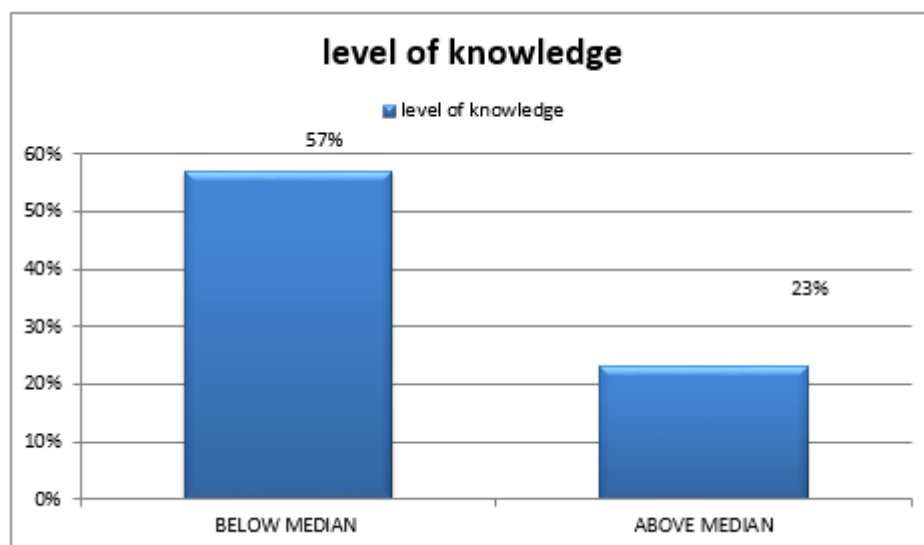


Figure 1 inferred 57 % staff Nurses had below median, 23 % staff Nurses had above median knowledge regarding deep vein thrombosis.

5. SUMMARY

This chapter presented the summary of the study, conclusion and implications towards different field related to nursing. It also clarified the limitations of the study and suggests recommendations for the future research.

The aims of the study was to assess the level of knowledge regarding prevention of deep vein thrombosis among staff nurses working in selected hospital at Haridwar in order to develop an informational booklet

6. DISCUSSION

The purpose of the study was to assess the level of knowledge of regarding deep vein thrombosis. The aim of the study to assess the level of knowledge regarding prevention of deep vein thrombosis among staff Nurses working in selected hospital at Haridwar in order to develop an informational booklet. the findings of the study have been discussed based on the objective and statistical analyses. A total 80 staff Nurses was selected through the purposive sampling technique. Pretest was conducted by using a knowledge questionnaire. Informational booklet was developed by the researcher. The findings of the study had been discussed with references of the objectives and hypothesis in the light of other studies conducted in same area.

7. CONCLUSION

The research was conducted at Shri Swami Bhumanand Hospital Ranipur Jhal Haridwar and Metro Hospital at Sidcul Haridwar. The study participants were staff Nurses to the selected hospital. Data were collected in month of May 2019, Result of the current study supported the investigated hypothesis of the study. The studies were aimed to assess the level of knowledge regarding prevention of deep vein thrombosis among staff Nurses working in selected hospital at Haridwar, in order to develop an informational booklet who were achieved through research findings.

Result of the study showed that majority of the staff Nurses were between age group of 20 - 29 years and 26 (32%) participants were in the age of 30 - 38 years. Gender wise distribution shows that 7(9%) participants were males and 73 (91%) participants were females.

Among 62(78%) participants were had done diploma in Nursing and 18% were graduates in Nursing. Area of duty 25(31%) participants was in general ward and 36 (45%) were working in critical ward. Mostly Nurses 41 (51%) were having duty hours of 9-10 hours and 39(49%) were having less than 6-8 hour 9-10 . The experience if the participants shows that 69(87%) had less than 0-7 years of experience and 11 (13%) had clinical experience above 8-15 years.

REFERENCES

- [1] Sarah Malmquist Human Biology: Concepts and Current Ethical Issue Cited on 29 Aug 2018 URL Address available from Circulatory and Respiratory Systems <https://cnx.org/contents/BX5MrgI-@1/3-2-Circulatory-and-Respiratory-Systems>
- [2] Mr.Abin M Antony¹ Mrs. K T Moly² Ms. Dhanya R Dharan Assessment of Knowledge and Self Reported Clinical Practice on Prevention of Deep Vein Thrombosis (DVT) Among Staff Nurses Cited on 1.Feb.2016 URL <https://pdfs.semanticscholar.org/ecd7/728d07c7bd b5 7520ff6608b4268a3ff1d859.pdf>
- [3] Wendelboe, Aaron M and Raskob, Gary E article wendelboe2016global,Global burden of thrombosis: epidemiologic aspects publisher by Am Heart Associated journal Circulation research volume 11 pages no 1340—1347 Cited on 20 march URL <https://www.Ahajournals .org/doi/pdf/10.1161/circresaha.115.306841>
- [4] Si-Dong Yang, Huan Liu, Ya-Peng Sun, Da-Long Yang, Yong Shen, Shi-Qing Feng, Feng-Dong Zhao, and Wen-Yuan Ding Prevalence and risk factors of deep vein thrombosis in patients after spine surgery: a retrospective case-cohort study Cite on 2.Jul.2015 URL <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4488742/>
- [5] Leslie Raffini, Yuan-Shung Huang, Char Witmer, Chris Feudtner Dramatic Increase in Venous Thromboembolism in Children's Hospitals in the United States From 2001 to 2007 volume 1 Cited on 24 . October 2009 URL <https://pediatrics.aappublications.org/content/124/4/1001?download=true>
- [6] Rebecca Caroline Barker, BMedSci BMBS FRCA, Paul Marval, BMedSci BMBS FRCA Venous thromboembolism: risks and prevention Cited on 19 November 2010 URL *continuing Education in Anesthesia Critical Care & Pain*, Volume 11, Issue 1, February 2011, Pages 18–23 <https://academic.oup.com/bjaed/article/11/1/18/285605>

- [7] Prof Sasmita Das , Anjali Sahoo , Rasmita swain Effectiveness of the Planned Teaching Program on Deep Vein Thrombosis among the Staff Nurses of selected hospital. Cited on Jan. 2014) URL Volume 3, Page no 48-51 <http://www.iosrjournals.org/iosr-jnhs/papers/vol3-issue1/Version-3/I03134851.pdf>
- [8] Charles S Cornford ,James M Mason and Fiona Inns deep vein thromboses in user of opioid duuge Cited on December 2011 URL [file:///C:/Users/User/Desktop/new%20study/bjgp61-e781 .pdf](file:///C:/Users/User/Desktop/new%20study/bjgp61-e781.pdf)
- [9] Gerard Stansby A and Ian Donald Reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism in medical inpatients [file:///C:/Users/User/Desktop/new %20study/clinmed-19-2-100.pdf](file:///C:/Users/User/Desktop/new%20study/clinmed-19-2-100.pdf)
- [10] Chen, Chung-Yu and Liao, Kuang-Ming chen 2015 incidence The incidence of deep vein thrombosis in Asian patients with chronic obstructive pulmonary disease journal Medicine 2015 publisher by Wolters Kluwer Health volume 94 cited on 25 April 2019 URL available From : <https://journals.lww.com/md-> cited on 25 april 2019 URL [journal/full text/2015 /11030/The Incidence of_Deep_Vein_Thrombosis_in_Asian.10.aspx](journal/full%20text/2015/11030/The%20Incidence%20of%20Deep%20Vein%20Thrombosis%20in%20Asian.10.aspx)
- [11] Ahsin M Bhatti, Sadia Ahsin Babur Salim, Junaid Mansoor 2012 knowledge, attitude and practices of healthcare providers towards deep vein thrombosis prophylaxis in five teaching hospitals of rawalpindi cited on 27 April 2019 URL available From: <file:///C:/Users/User/Desktop/new%20study/need%201.pdf>
- [12] Khan, Muhammad Irfan; O'Leary, C.; Silviri, V et-al 2017 Venous thromboembolism - risk assessment tool and thromboprophylaxis policy: a national survey , Irish Medical Journal. All rights reserved on 29 April 2019 URL available From : [file:///C:/Users/User/Desktop/new%20study/VenousThromboembolismRiskAssessment%20 ToolandThromboprophylaxisPolicy.pdf](file:///C:/Users/User/Desktop/new%20study/VenousThromboembolismRiskAssessment%20ToolandThromboprophylaxisPolicy.pdf)
- [13] Baekgaard, Niels baekgaard 2017 Incidence and location of deep vein thrombosis in the lower extremities: what do we know PHLEBOLYMPHOLOGY publisher by LABORATOIRES SERVIER 22 RUE GARNIE, NEUILLY SUR SEINE, volume 24 on 26 April 2019 URL available From : <https://www.phlebology.org/incidence-and-location-of-deep-vein-thrombosis-in-the-lower-extremities-what-do-we-know/>
- [14] Coughlin, Shaun R coughlin2005protease, Protease-activated receptors in hemostasis, thrombosis and vascular biology publisher byWiley Online LibraryJournal of Thrombosis and Haemostasis Volume 3,Pages 1800—1814 cited on 23 april 2019 Publisher by Wiley Online Library <https://journals.sagepub.com/doi/full/10.1177/1076029614536605>
- [15] JamesTsai,AltheaM.Grant,MicheleG.Beckman,ScottD.Grosse,HussainR.Yusuf, LisaC.Rich Determinants of Venous Thromboembolism among Hospitalizations of US Adults:A Multilevel Analysis February 25,2019 [file:///C:/Users /User/Desktop /new%20study/journal.pone0123842 .PDF](file:///C:/Users/User/Desktop/new%20study/journal.pone0123842.PDF)
- [16] Ernest A. Fischer, Benjamin Kinnear, Hospitalist-Operated Compression Ultrasonography: a Point-of-Care Ultrasound Study (HOCUS-POCUS) on 20April 2019 URL available From :[file:///C:/Users/User/Desktop/new%20 study/ROL%20Fischer2019_Article_Hospitalist-OperatedCompressio.pdf](file:///C:/Users/User/Desktop/new%20study/ROL%20Fischer2019_Article_Hospitalist-OperatedCompressio.pdf)
- [17] Wang Yuhua, Wang Dongmei, Gu Weidong, An Analysis of Risk Factors for Deep Vein Thrombosis in the Lower Limbs and Nursing Strategies, on 25 may 2018 URL available From : American Journal of Nursing Science. Vol. 8, No. 4, 2019, pp. 175-179. doi:10.116 48/jajns. 20190804.18
- [18] Clare White Simon I R Noble, Max Watson, Flavia Swan, Victoria L Allgar, Eoin Napier, Annmarie Nelson, Jayne McAuley, Jennifer Doherty, Bernadette Lee, Miriam J Johnson Prevalence, symptom burden, and natural history of deep vein thrombosis in people with advanced cancer in specialist palliative care units (HIDDEN): a prospective longitudinal observational study May 21, 2019 [https://www.thelancet.com/pdfs/journals/lanhae/PIIS2352-3026\(18\)30215-1.pdf](https://www.thelancet.com/pdfs/journals/lanhae/PIIS2352-3026(18)30215-1.pdf)
- [19] Chuanlin Zhang, Zeju Zhang, The cumulative venous thromboembolism incidence and risk factors in intensive care patients receiving the guideline-recommended thromboprophylaxis on 25 may 2018 URL available From [https:// www. ncbi.nlm.nih.gov/pmc/article s/PMC6571428/](https://www.ncbi.nlm.nih.gov/pmc/article/s/PMC6571428/)
- [20] Krishnakumar G. Kuttanchettiyar, Meer M. Chisthi 11 june 2019 URL available From Deep venous thrombosis after major abdominal surgeries: a tertiary level centre study *International Surgery Journal Kuttanchettiyar KG et al. Int Surg J. 2018 Jan;5(1):267-272 <http://www.ijurgery.com> <file:///C:/Users/User/Desktop/previous%20study/2172-8331-1-PB.pdf>

- [21] Vinil Upendrababu, Rajat Singh, Afreen, Deeksha, Govind Kumar, Roohee Fatma International Journal of Nursing Education and Research Volume No.on 25 march2018URL available From <http://ijneronline.com/AbstractView.aspx?PID=2018-6-4-15>
- [22] Yu-Fen RN; XU, Yuan RN; Chen, Ya-Ping RN; Wang, Xiao-Jie RN; Deng, Hai-Bo RN; He, Yu MD*; WU, Xinquan RN* Nurses' objective knowledge regarding venous thrombo embolism prophylaxis A national survey study Medicine on 20 May2019 URL available From : https://journals.lww.com/md-journal/Fulltext/2018/04060/Nurses__objective_knowledge_regarding_venous.38.aspx
- [23] Pritha Sarkar ,Madhukari Ray An experimental study on the effectiveness of a structured teaching programme among the clinical nurses' perceived knowledge and practice in deep vein thrombosis Volume-7 | Issue-6 | on 13 Jan 2019 URL available From international journal of scientific research Users/ User /Desktop /new study ROL 20AN 20EXPERIMENTAI STUDY ON THE EFFECTIVENESS OF A STRUCTURED TEACHING PROG
- [24] Gul A, Andsoy, Ozkaya A Descriptive, Cross-sectional Survey of Turkish Nurses' Knowledge of Pressure Ulcer Risk, Prevention, and Staging. on 18 April 2019 URL available From <https://www.ncbi.nlm.nih.gov/pubmed/28657899> .
- [25] Hind Almodaimegh, Lama Alfehaid, Nada Alsuhebany,Rami Bustami, Shmylan Alharbi, Abdulmalik Alkatheri, and Abdulkareem Albekairy Awareness of venous thrombo embolism and thromboprophylaxis among hospitalized patient a cross-sectional study on 27April 2018 URL available From <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5518121>
- [26] Yaming Liu, Fantao Meng, 27 June 2015Comparison of intra-articular versus intravenous application of tranexamic acid in total knee arthroplasty: a meta-analysis of randomized controlled trials on 22 feb 2019 URL available From on 10feb 2018 URL available From : <file:///C:/Users/User/Desktop/new%20study/31%20ROL.pdf>
- [27] Tao-ping Chen, Yu-min Chen 2017 Comparison of the effectiveness and safety of topical versus intravenous tranexamic acid in primary total knee arthroplasty: a meta-analysis of randomized controlled trials on 2 April 2018 URL available From : <file:///C:/Users/User/Desktop/new%20study/33%20ROL.pdf>
- [28] Atif Bashir Fazari Sara S Eltaher² and Sandra A Rahman Rate, Clinical Features and Mortality of Venous Thromboembolism at Omdurman Maternity Hospital, Khartoum, Sudan Journal of Universal Surgery on 22 April 2017 URL available From <http://www.jusurgery.com/universalsurgery/rate-clinical-features-and-mortality-ofvenous-thromboembolism-at-omdurmanmaternity-hospital-khartoum-sudan.php?aid=17916>
- [29] Doaa Mohammed El-SayedEad,Pro.Dr. KameliaFouadAbd-Allah Prof. Dr. Mohamed Osama Hegazi,Dr. Sabah Said Mohammed Effect of Nursing Care Standards for Preventing Deep Vein Thrombosis among Patients Undergoing Hip Surgery on Nurses' Performance and Patients' Outcome Journal of Nursing and Health Science Volume 5, Issue 4 Ver. II on 20 may 2017 URL available From [file:///study/SabahSaid Mohammed_O66147-Copy.pdf](file:///study/SabahSaid%20Mohammed_O66147-Copy.pdf)
- [30] Ji-Li YUN 2016 Prevalence of pulmonary embolism at autopsy among elderly patients in a Chinese general hospital on 12 22 ,2017URL available From on 2 may 2017 URL available From <file:///C:/Users/User/Desktop/new%20study/36%20ROL.pdf>
- [31] Joseph F. Dasta a , Dominic Pilon b , Samir H. Mody Daily Hospitalization Costs in Patients with Deep Vein Thrombosis or Pulmonary Embolism Treated with Anticoagulant Therapy on 26 may 2017 URL available From [https://www.thrombosisresearch.com/article/S0049-3848\(14\)00633-1/pdf](https://www.thrombosisresearch.com/article/S0049-3848(14)00633-1/pdf)
- [32] Prof Sasmita Das1 , Anjali Sahoo Jan. 2014) Effectiveness of the Planned Teaching Program on Deep Vein Thrombosis among the Staff Nurses of selected hospital. on 2 July 2017 URL available From [file:///C:/Users/User/Desktop/new%20study/ROL4Effectiveness of thePlanned TeachingProgramon DeepVeinThrombosisamongthe StaffNurses ofselectedhospital.pdf](file:///C:/Users/User/Desktop/new%20study/ROL4Effectiveness%20of%20thePlanned%20TeachingProgramon%20DeepVeinThrombosisamongtheStaffNurses%20of%20selectedhospital.pdf)
- [33] Morteza Abdar Esfahani MD1, Fatemeh Sayehmiri MSc One Decade "Narcotic Addicted Patients with Deep Vein Thrombosis" in St. Alzahra Hospital of Isfahan, Iran on 21 June 2017 URL available From <file:///C:/Users/User/Desktop/newstudy/AHJ-06-127.pdf>

- [34] Martin Dennis, Bramwell Electiveness of intermittent pneumatic compression in reduction of risk of deep vein thrombosis in patients who have had a stroke CLOTS 3a multicentre randomized controlled trial on 20 Feb. 2017 URL available From on 20 may 2017 URL available From file:///C:/Users/User/Desktop /new study /ROL Electiveness of intermittent pneumatic compression inreduction of risk of deep vein thrombosis in patients who have had stroke CLOTS %203)amulticentrerandomisedcontrolledtrial.pdf
- [35] Angral R Islam MS, Kundan S Madras Incidence of deep vein thrombosis and justification of chemoprophylaxis in Indian patients: on 13.feb.2018URL available From A prospective study Medical Mission, Chennai, India, Deptt. of Cardiac Surgery, National Institute of Cardiovascular Diseases, Sher-e-Bangla Nagar, Dhaka, Bangladesh, 3Government Medical College, Jammu, India. Email: angralr@yahoo.com file:///C:/Users /User/ Desktop/p revious study/12885-Article%20Text-47047-1-10-20121209.pdf
- [36] Kirsten van Langevelde, Linda E. Flinterman Broadening the factor V Leiden paradox: pulmonary embolism and deep-vein thrombosis as 2 sides of the spectrum on 13.feb.2018URL available From <http://www.bloodjournal.org/content/120/5/933?sso-checked=true>
- [37] Ahsin M Bhatti, Sadia Ahsin knowledge, attitude and practices of healthcare providers towards deep vein thrombosis prophylaxis in five teaching hospitals of Rawalpindi 24 -2-2012; file:///C:/Users/User/Desktop/new study/ ROL I.pdf
- [38] Mei M Chan ,Numan Harza Duration of surgery independently influences risk of venous thromboembolism after laparoscopic bariatric surgery on 25 may 2018 URL available From [https://www.soard.org/article/S1550-7289\(11\)00703-9/fulltext](https://www.soard.org/article/S1550-7289(11)00703-9/fulltext)
- [39] emeka Kesieme1 Chinenye Kesieme2 Nze Jebbin3 eshiobo irekpita1 Andrew Dongo 25 april 2011 Deep vein thrombosis: a clinical review file:/// C:/Users/User/Desktop /new%20 study /25% 20ROL%20Deep%20vein%20 thrombosis%20a%20clinical%20review.pdf
- [40] Charles S Cornford,James M Mason and Fiona Inns Deep vein thromboses in users of opioid drugs British journal of practice ,December 2011 file:///C:/Users/User/Desktop/newstudy /ROLDvtinusersofopioiddurg.pdf
- [41] Kuldeep singh danny yakoub early follow up and treatment recommendation for isolated calf deep venous thrombosis 7 July 2011 file:///C :/Users/User/Desktop/newstudy/ROLEarly follow up and treatment recommendations forcalfdvt.pdf
- [42] harry Gibbs, John Fletcher 2011 Venous thromboembolism prophylaxis guideline implementation is improved by nurse directed feedback and audit file:///C:/Users/User/ Desktop/new study/ROL%201477-9560-9-7.pdf
- [43] Stacy A. Johnson, MD Scott M. Stevens February 3, 2010 Risk of Deep Vein Thrombosis Following a Single Negative Whole-Leg Compression Ultrasound A Systematic Review and Meta-analysis file:///C:/Users/User/ Desktop/new%20study/35%20rol.pdf
- [44] J. A. Cordell-Smith, S. C. Williams Lower limb arthroplasty complicated by deep venous thrombosis on 25 may 2018 URL available From file:/// C:/User s/User/Desktop/ new%2study/42% 20rol.pdf