

Example of problem statement essay

[Business](#), [Management](#)



\n[[toc title="Table of Contents"](#)]\n

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1. [Venous Thromboembolism: Literature Review](#) \n \t
2. [Literature Review](#) \n \t
3. [References](#) \n

\n[/toc]\n \n

Venous Thromboembolism: Literature Review

Venous Thromboembolism: Literature Review

Venous Thromboembolism (VTE) is a health condition characterized by blood clot forming within the veins. VTE is the third most common cardiovascular condition and is fatal for up to 35% of patients who develop the condition (Deitelzweig, Johnson & Schulman, 2011). This high mortality rate is as a result of poor understanding of VTE unlike arterial thrombosis which is well understood. Although many risk factors have been identified to cause VTE, thrombophilia is one of the underlying cause that characterizes many cases of VTE. Thrombophilia is an abnormality in the ability of blood to clot. The problem which this study seeks to address is whether testing for thrombophilia can help resolve the nursing management problems facing VTE. The problems faced in the clinical management of VTE include, conducting accurate and timely diagnosis, devising effective and safe pharmacologic interventions, and reducing the health burden posed by the condition. In this literature review efficacy of thrombophilia testing in solving the clinical management challenges of VTE is evaluated.

Literature Review

The diagnosis of VTE is a challenge because the condition presents different symptoms depending with the body part affected. One of the most commonly used methods is compression ultrasonography (CUS). Nurses who are responsible for the management of VTE should have competencies in the use of CUS in the diagnosis of VTE. In a study to determine the accuracy of nurse-performed CUS, Mucoli et al., (2014) found that nurses are capable of accurately using CUS to diagnosis VTE. This study is relevant since accurate diagnosis is the first challenge in the clinical management of VTE. One of the key applications of thrombophilia testing is detecting patients at a high risk of developing VTE. In this case thrombophilia testing contributes positively and helps solve some of the clinical challenges surrounding VTE. In a study to identify the tools used to predict the risk of VTE among hospitalized non surgical patients, Huang et al., (2013) identified 11 risk assessment models. Of this, thrombophilia testing was the most effective since it has generalizability and has been adequately validated unlike some of the other risk assessment models that were evaluated. This demonstrates the effectiveness of thrombophilia testing as a management strategy against VTE.

Since VTE is associated with thrombophilia, many treatment options for the condition are based on using anti-coagulants to prevent the formation of blood clots in veins (Wells, Fordgie & Rodger, 2014). The efficacy of anti-coagulants depends on VTE resulting from thrombophilia. For instance, people who are at risk of recurrent VTE due to thrombophilia usually take anticoagulants for prolonged periods of time.

In one of the most comprehensive studies conducted on the effect of prolonged use of anti-coagulants, Schulman et al., (2013) tested the effects of long term use of dabigatran and warfarin compared to placebo. The researchers found that the drug regimen of either dabigatran or warfarin is effective in preventing recurrent of VTE compared to placebo. This high efficacy is based on the ability of these drugs to arrest thrombophilia. However, the researchers found out that these drugs can cause severe bleeding if the patient is injured and this risk does not exist with placebo. Another challenge identified with the use of dabigatran and warfarin is that these drugs do not have a reversal of the anticoagulant effect. Therefore, the drugs must be taken on a daily basis for prolonged periods of time. At times the drug prescription stands indefinitely for high risk patients.

Another suitable drug that has reversal of the anticoagulant effect enabling it to be used once a week is idraparinux. This drug inhibits FXa activity making it a long acting anticoagulant. In a randomized double blind trial with 757 participants, Buller et al., (2011) demonstrated the safety and efficacy of a once a week injection of idraparinux in the management of VTE. The study used rigorous scientific methods and is credible and reliable. Another FXa inhibitor that has the potential to be used in the treatment of VTE is rivaroxaban. Rivaroxaban is administered orally and provides a fixed dose for the management of VTE. Agnelli et al., (2010) conducted a study to determine the efficacy and safety of oral rivaroxaban for the symptomatic treatment of VTE. The study was designed as an open label non inferiority study in which rivaroxaban was compared to enoxaparin and a vitamin K antagonist such as warfarin. In a parallel double blind, randomized study,

the researchers compared rivaroxaban to placebo. The researchers found that over a period of 12 months, rivaroxaban is effective and safe in controlling the symptoms of VTE.

The cost of quality health care is a challenge to most patients and reduces access to health services. Using thrombophilia testing to reduce the cost of health care would reduce mortality and improve quality. In an open label, randomized non inferiority trial, Aujesky et al., (2011) demonstrated that with proper diagnosis such as that offered by thrombophilia testing, outpatient care compares well with inpatient care for the management of VTE. This finding is important since it demonstrates an actual application of thrombophilia testing in improving patient outcomes and quality of care.

The reviewed studies demonstrate that thrombophilia testing is effective in identifying patients at a high risk of developing VTE. Additionally the studies demonstrate the efficacy and safety of anticoagulants in treating and preventing recurrence of VTE. The mode of action of anticoagulants is based on the arrest of thrombophilia and making blood thinner to prevent spontaneous formation of blood clots in the veins. The reviewed studies are mainly designed as randomized controlled studies to enhance scientific rigor and produce high level evidence. The proposed approach for this study will be similar. In the proposed design, the participants who will be people with known VTE risk factors and who have already suffered from VTE in the recent past will be randomly allocated to either the intervention group or the control group. The intervention group will receive thrombophilia testing and anticoagulants when found to suffer from thrombophilia while the control group will receive regular care of treating the symptoms of VTE. This will

enable the study to generate suitable data to evaluate the study hypothesis that thrombophilia testing can help in addressing the nursing challenges experienced in the management of VTE. This will help reduce the health burden posed by VTE which is a common cardiovascular condition that can cause mobility challenges or be fatal.

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