

Study reveals compression stockings incorrectly used in 29 percent of patients

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An original study, published in the September issue of the *American Journal of Nursing (AJN)*, revealed that graduated compression stockings were used incorrectly in 29% of the patients and sized incorrectly in 26% of the patients. These stockings play an important role in preventing the formation of deep vein clots that can result in pulmonary complications and death. *AJN* is the largest circulating nursing journal in the world, and is published by Lippincott Williams & Wilkins, part of Wolters Kluwer Health, a leading provider of information and business intelligence for students, professionals and institutions in medicine, nursing, allied health, pharmacy and the pharmaceutical industry.

"Problems with the use and sizing of graduated compression stockings are common throughout the country and this study is one of the first to systematically analyze the problems and recommend ways to improve practice," said Elizabeth H. Winslow, PhD, RN, FAAN, Research Consultant, Presbyterian Hospital of Dallas, TX and lead author of the study. "Based on the study findings, we recommend that knee-length stockings be the standard length used and that the education of nurses and patients about the proper use of stockings be improved."

This study and previous research found that problems with use and size were more common with the thigh-length stockings and in overweight patients. More patients who had thigh-length stockings found them uncomfortable than did those who had knee-length stockings, and 20% of patients did not understand the stockings' purpose. This lack of

understanding may play a role in patients not wearing them correctly.

Graduated compression stockings are not elastic support stockings. They were developed based on research showing the optimal amount of graded compression for promoting blood flow and reducing the risk of thrombosis. When fitted and used properly, they increase blood flow velocity, reduce the risk of venous wall dilation and intimal tear, improve venous valve function and may reduce coagulability, all of which lead to reduced risk of venous thrombosis, a blood clot that forms in the vein.

Many studies conducted over the past three decades have shown that graduated compression stockings, used alone or in combination with other external compression devices or medications, significantly reduce the rate of deep-vein thrombosis in post-surgical patients. Research conducted in the 1980s and 1990s suggested that thigh-and knee-length compression stockings are equally effective in reducing deep-vein thrombosis but there are few recent studies.

"A lot can be done to optimize the benefits of graduated compression stockings and minimize adverse effects," said Debra Brosz, MSN, RN, ONC, NEA-BC, a researcher at Presbyterian Hospital of Dallas and coauthor of the study. "Knee length stockings have many practical advantages over thigh length in that they lower the risk of problems and health care costs. The improper use and sizing of these stockings and the deficiencies in patient education are important health care issues."

The Study

The researchers used a comparative, descriptive design to study 142 hospitalized postoperative patients. The sample included (119) women and (23) men; the mean age was 57 years (range 18 to 97 years.) Most of the patients (53%) had gynecological surgery. A total of 58 patients

(41%) had knee, hip, ankle or foot surgery and (6%) had abdominal, back, shoulder or plastic surgery.

Thirty-seven patients had thigh-length and 105 had knee-length stockings. To be eligible, patients had to be hospitalized surgical patients 18 years or older; have had surgery within the previous 14 days; have a physician's order for graduated compression stockings; have the stockings in place at the time of the study and be in stable condition. The researchers assessed patients' skin, measured their legs, and determined whether there were any problems with the stockings' use. They then compared leg measurements to the manufacturer's sizing chart to determine whether the correct-size stockings had been applied. They also asked patients to rate the comfort of the stockings and to describe their purpose.

Source: American Journal of Nursing

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