

## Nursing Interventions and Their Impact on Cardiovascular Risk Factors in Patients with Aortic Valve Vegetation and Antiphospholipid Antibody Syndrome

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Nursing interventions play a crucial role in managing cardiovascular risks in patients with aortic valve vegetation (AVV) and antiphospholipid antibody syndrome (APS). Nurses are key in anticoagulation therapy, infection prevention, cardiovascular risk management, and patient education. They also offer supportive counselling and promote lifestyle modification, including changes such as eating healthier and engaging in more frequent exercise, to improve patient outcomes. By enhancing self-care, medication adherence, and anxiety reduction, nursing interventions improve quality of life and reduce complication rates. These findings stress the critical contribution of nursing to the optimization of care, recovery enhancement, and minimization of cardiovascular risks among patients with AVV and APS.

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### Introduction

Patients with aortic valve vegetation (AVV) and antiphospholipid antibody syndrome (APS) experience compounded cardiovascular risks, and nursing interventions play a crucial role in regulating these complexities. Nurses assist in addressing critical aspects such as anticoagulation therapy, infection prevention, and education on medication adherence. They help ensure patients maintain proper self-care, manage cardiovascular risk factors like hypertension and hyperlipidaemia, and facilitate necessary follow-up care, all of which reduce complications and improve recovery. Nurses also emphasize lifestyle modifications, including promoting a healthy diet, weight management, and regular exercise.<sup>1</sup> With APS, nurses are usually trained to give specific interventions to manage thromboembolic risks by educating patients about managing cardiovascular complications and taking anticoagulation treatment. Additionally, addressing the emotional stresses that these patients often face owing to the chronicity of their condition is imperative since they become more anxious.

As a comprehensive part of patient care, nurses educate on recognizing early signs of cardiovascular events, helping patients adjust to living with the condition, and providing emotional support throughout the process.<sup>2</sup> These interventions collectively enhance long-term health outcomes, reduce complications, and improve patients' overall quality of life with these dual conditions. Nursing interventions are pivotal in improving patient outcomes in AVV and APS management by ensuring a holistic approach that encompasses physical and mental health.

Accumulating evidence increasingly positions nursing interventions not as adjuncts to medical care but as central drivers of recovery and long-term outcomes in complex cardiovascular conditions. Research evaluating nursing interventions in patients undergoing mechanical heart valve replacement (MHVR) illustrates how structured, self-efficacy-based nursing care can meaningfully transform both physiological and psychological recovery trajectories.<sup>3</sup> The randomized controlled trial in this domain underscores that improvements in self-efficacy, mental health, pain control, medication adherence, and infection prevention are not incidental outcomes, but direct reflections of purposeful nursing engagement.<sup>3</sup> Such findings reinforce

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the argument that nursing practice when grounded in behavioral empowerment and close patient follow-up has the capacity to influence outcomes traditionally attributed to medical or pharmacological management alone.

Of particular editorial significance is the observed reduction in postoperative infection rates among patients receiving self-efficacy-focused nursing interventions.<sup>3</sup> This outcome highlights an often underappreciated truth in cardiovascular surgery pathways: meticulous wound care, adherence to aseptic principles, and patient education are foundational to safe recovery and are predominantly nurse-led domains. The lower infection burden serves as a proxy indicator of nursing vigilance, continuity of care, and patient partnership elements that are difficult to replicate through protocolization alone.<sup>3</sup> Collectively, these findings argue strongly for personalized nursing models that integrate clinical competence with behavioral reinforcement to optimize holistic recovery.

Evidence from earlier nurse-led care models further strengthens this viewpoint. A study published in 2012 demonstrated that nurse-managed follow-up after heart valve surgery effectively addressed routine yet critical aspects of postoperative care, including INR monitoring, rhythm control, and patient education on dental follow-up to reduce the risk of endocarditis [4]. From a systems perspective, this redistribution of responsibility enhanced patient safety while enabling cardiologists to dedicate their expertise to more complex clinical cases [4]. Such task-shifting models exemplify how nursing leadership directly contributes to healthcare efficiency, continuity, and sustainability.

Similarly, findings from Enhanced Recovery After Surgery (ERAS) pathways in heart valve replacement reinforce the indispensable role of nurses in accelerating postoperative recovery. An ERAS descriptive cohort study demonstrated that nursing-led early mobilization, pain management, and psychological support were associated with shorter hospital stays, faster recovery, and reduced postoperative complications.<sup>5</sup> These outcomes challenge traditional surgical recovery paradigms and reaffirm that recovery is not solely dictated by operative success, but by the quality and consistency of supportive nursing care integrated throughout the perioperative period.<sup>5</sup>

Bernardi M *et al.* 2024 study examined a nursing Beyond surgical populations, the growing evidence base in antiphospholipid antibody syndrome (APS) further illustrates the scope of nursing impact across thrombotic and cardiovascular conditions. A recent MDPI study

reported that nurse-led interventions incorporating patient education, psychological support, and symptom management significantly reduced anxiety and improved self-care capacity and perceived social support among patients with APS.<sup>6</sup> These interventions were also linked to improved pregnancy outcomes, enhanced quality of life, and better cardiovascular risk management, underscoring the broad preventive role of nursing practice in complex autoimmune conditions.<sup>6</sup>

Additional research focusing on nursing implications in APS management emphasizes the importance of targeted education on anticoagulant therapy, thrombosis prevention, and early recognition of complications such as preeclampsia.<sup>7</sup> Through sustained patient education, emotional support, and symptom-focused care, nurses significantly promote self-care behaviors, medication adherence, and vigilance for adverse events, thereby improving overall disease management and patient outcomes.<sup>7</sup>

## Conclusion

Patients suffering from antiphospholipid syndrome or autoimmune valve disease experience an increased risk of cardiovascular events and, therefore, require different approaches for nursing interventions. Anticoagulation therapy is supported by infection prevention, other factors of cardiovascular risk, and patient education as part of a holistic and essential nursing intervention in improving outcomes. Nurses also provide significant psychological support, promote healthy lifestyle choices, and ensure ongoing monitoring and follow-up care.

The consequences of nursing interventions on medication adherence, lifestyle changes, and psychosocial well-being were evaluated for optimal care practices. As highlighted by our findings, nursing plays a vital role in improving general well-being, reducing complications, and mitigating cardiovascular risk in people living with AVV and APS.

## Author Contributions

### *KS and AS*

Writing the draft and critically reviewing the literature; KS: Revision of the draft for important intellectual content.

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