



Current Issues in Nurse-Led Management of Gout: A Narrative Review

Samer Hatem Sharkiya¹, Falah Jamal Dakka²

¹Nursing Ph.D Candidate, Dorot Geriatric Medical Center
Affiliated to the Technion Faculty of Medicine, Haifa, Israel

²Arbel Geriatric Center, Moria Group, Petah Tikva, Israel.
The Institute of Education and Technology, Acre, Israel.

ABSTRACT

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Background: Gout is an inflammatory arthritis caused by elevated serum urate levels due to genetic predisposition, diet, or medical comorbidities. It affects more than 2% of the world's population, and its prevalence and incidence are anticipated to continue increasing due to the aging world. Despite this trend, its treatment remains suboptimal. Nurse-led management is more effective than traditional GP-led care. This narrative review aims to identify current issues in nurse-led management of gout and provide recommendations for future improvements.

Methods: Relevant studies were searched on the Web of Science, PubMed, ScienceDirect, and Google Scholar. Current issues in nurse-led management of gout were then thematically organized.

Results: There is high-quality evidence on the role of nurses in gout management, including patient education, individualized lifestyle/diet advice, and ULT administration. However, nurses continue to experience time constraints. Also, a few studies, though of low quality, suggested that nurses have sufficient knowledge of the clinical manifestations of gout but a limited understanding of gout management. The role of telemedicine was also revealed in two studies, but the studies were of low quality and did not reveal its effectiveness.

Conclusion: Nurse-led interventions for gout management are effective but face significant challenges like time constraints and lack of knowledge. Nurses working in rheumatology departments should be trained in effective gout management. Future research should investigate the role and effectiveness of telemedicine in nurse-led gout management.

KEYWORDS:

Gout management, nurse-led management, telemedicine, barriers, urate-lowering therapy.

BACKGROUND

Gout occurs when serum uric acid becomes elevated for various reasons, such as diet, medical comorbidities, and genetics, and becomes deposited in joints, leading to an immune response that causes inflammation and severe pain to the affected joint (Fenando et al., 2024). It affects approximately 2% of the world's population, especially among men, the aged, and certain ethnic groups (Dehlin et al., 2020). Due to the aging world, the prevalence and incidence of gout are expected to

Corresponding Author: Samer Hatem Sharkiya

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continue to rise significantly in the future (He et al., 2023; Singh & Gaffo, 2020). Despite this trend, the current treatment for gout remains largely suboptimal, with over 89% of hospitalizations being preventable (Tsiamalou et al., 2023). Gout is usually treated with corticosteroids, urate-lowering therapy (ULT, mainly allopurinol), and non-steroidal anti-inflammatory drugs (Stamp & Dalbeth, 2024). In countries like Israel, treatment adherence is extremely low (Zandman-Goddard et al., 2013). Gout has been linked to premature death (Fisher et al., 2017; Kuo & Luo, 2017) and destruction of affected joints and tophi due to the deposits of urate crystals in and around the joints (Bernal et al., 2021). There are promising findings in previous research that, compared to GP-led treatment, nurse-led treatment of gout can lead to better

outcomes, such as better adherence to medication and prevention of future flares through optimal urate lowering (Doherty et al., 2018; Fuller et al., 2019; Mirmiran et al., 2018). Therefore, it is vital to understand the current issues in nurse-led gout management to inform future improvements.

This narrative review aims to explore current issues in nurse-led management of gout and provide recommendations for future improvements. The following sources were searched using keywords like "nurse-led," "management," and "gout": Web of Science, PubMed, ScienceDirect, and Google Scholar.

CURRENT ISSUES IN NURSE-LED GOUT MANAGEMENT

The Role of Nurses in Gout Management

As stated earlier, many high-quality studies have found that nurse-led gout management can result in superior outcomes and patient satisfaction (Calvo-Aranda et al., 2022; Fuller et al., 2019; Liu et al., 2023). The main roles of nurses in optimal gout management include, but are not limited to, patient education, individualized lifestyle advice, and the administration of appropriate ULT (Rees et al., 2013). Nurses perform holistic assessments to deliver individualized education to gouty patients and ensure shared decision-making with patients for the long-term management of the condition (Latif et al., 2019). The main issue in nurses' roles in managing gout is the complexity associated with comorbidity (Liu et al., 2023; McLachlan et al., 2011). Gout, especially among older patients, is also likely to cooccur with other comorbid conditions like hypertension, diabetes, and cardiovascular diseases. Gout patients with comorbidities may require more complex management, which can be challenging to nurses, especially those with insufficient knowledge about the individual comorbidities.

Regardless, nurse-led interventions that include the above roles are highly effective. A randomized controlled trial (RCT) that compared nurse-led and GP-led interventions for gout management found that patients in the nurse-led intervention group reported greater satisfaction with their healthcare practitioner, significantly improved their gout knowledge, reported better therapeutic adherence, and hence better outcomes, such as reduced frequency of flares (Fuller et al., 2019). The findings are consistent with another RCT that found that a predominantly nurse-led intervention resulted in higher therapeutic adherence than usual care (Doherty et al., 2018). Another recent clinical comparative study found that comprehensive nursing management, compared to usual nursing care, was associated with better outcomes, such as clinical effects and quality of life (Liu et al., 2023). The findings are consistent with a cross-sectional observational study that found that gout patients reported high overall satisfaction in a gout consultation with a Clinical Nurse Specialist (Calvo-

Aranda et al., 2022). Another observational study reported that a nurse-led intervention for gout management can achieve clinical therapeutic targets in 9 out of 10 gout patients (Rees et al., 2013). The same observation was reported by Rasmussen et al. (2024), who noted that 98% of patients in a nurse-led intervention were therapeutically adherent compared to 44% in usual care. Thus, if well utilized, nurse-led interventions can significantly improve patient outcomes. Even so, some barriers need to be overcome, such as a lack of time to provide comprehensive nursing care (Sedelius et al., 2022).

Nurses' Knowledge of Gout

Nurses need to be adequately knowledgeable about gout to provide optimal nurse-led interventions. A qualitative study that conducted semi-structured interviews with 20 nurses working in rheumatology and internal medicine departments in France found that nurses were insufficiently educated about gout management (Deprouw et al., 2019). Another qualitative study where 56 nurses and physicians from nine primary healthcare centers were interviewed further supported the observation that nurses do not have adequate knowledge for optimal gout management (Sedelius et al., 2022). Instead, nurses were knowledgeable about the pain associated with gout, but their approach to alleviating this pain was not compliant with standard gout management approaches, including the need for ULT. Another observational study conducted in China found that clinical nurses were knowledgeable about the clinical manifestations of gout but had limited knowledge about its treatment and management (Xiao-xue et al., 2019). Nurses' lack of gout management knowledge is a major issue that may impede the implementation of the nurse-led organizational model.

The Role of Telemedicine

Most nurses' roles in gout management do not always require the patient to visit physically. Instead, virtual consultations can be conducted. In a study, a nurse-led telemedicine intervention was designed to deliver patient education, monitor adverse effects, and drug escalation (Phang et al., 2020). They found that the nurse-led telemedicine program was effective and safe. The study's main weaknesses include the fact that it did not utilize a comparison group and did not measure baseline scores. In a cross-sectional study, the authors found that all gout patients (n=71) were satisfied with face-to-face consultations with a Clinical Nurse Specialist, compared to 66% for telephone consultations (Calvo-Aranda et al., 2022). It shows that telemedicine-based, nurse-led interventions still have issues that may need to be addressed to deliver optimal nursing care. The studies were generally weak and did not provide sufficient insights into the role of telemedicine in nurse-led gout management.

DISCUSSION AND CONCLUSION

The review found that the current issues in nurse-led management of gout include the role of nurses in gout management, with a particular focus on the effectiveness of nurse-led interventions. Lack of time is the main barrier to implementing the nurse-led organizational model for gout management (Sedelius et al., 2022). In agreement with Tsiamalou et al. (2023), there is sufficient and high-quality evidence on nurses' role in managing gout and the effectiveness of nurse-led interventions. For example, high-quality RCTs (Doherty et al., 2018; Fuller et al., 2019) have been conducted, and their findings are consistent with clinical comparative and observational studies (Calvo-Aranda et al., 2022; Rasmussen et al., 2024; Rees et al., 2013). However, regarding the lack of knowledge as a barrier to optimal gout management, only three low-quality studies were available (Deprouw et al., 2019; Sedelius et al., 2022; Xiao-xue et al., 2019). Both lack of knowledge and time/resources for nurse-led interventions are potential barriers, but low-quality evidence requires further investigation to make conclusive remarks. These two barriers were also highlighted by Tsiamalou et al. (2023), who conducted a systematic review to explore the contemporary role of nurses in gout management. Finally, there is also a lack of high-quality evidence on the effectiveness of telemedicine for nurse-led interventions for gout management. There were only two studies found, with only one of them having an exclusive focus on telemedicine (Phang et al., 2020), and the other one focusing on a different aspect of care but with a brief mention of patient satisfaction with telephone consultations (Calvo-Aranda et al., 2022). Recommendations are discussed below.

Based on the findings of this narrative review, nurse-led interventions for gout management should be introduced in healthcare systems to optimize patient outcomes and patient satisfaction. Although currently proven effective, this approach can be enhanced if nurses' knowledge gaps are addressed effectively. For example, nurses working in rheumatology departments should be trained in the effective management of gout through patient education initiatives, individualized lifestyle advice, and ULT. Nurse-led interventions can be beneficial when time allows. Otherwise, time constraints can be addressed through adequate staffing.

Moreover, future studies need to address weak evidence on barriers to nurse-led interventions for gout management. For instance, regarding insufficient knowledge of gout management, more high-quality studies are required to shed more light on the nature of this problem, including identifying the specific knowledge gaps for nurses in multiple healthcare systems in different countries. Future studies should also reveal multiple barriers besides insufficient knowledge and time resources. Also, due to resource and time constraints, understanding the role and effectiveness of telemedicine in

nurse-led interventions for gout management can advance the role of nurses in gout management. Future studies should also strive to bridge this gap in the literature, including how telemedicine initiatives can be optimized for gout management.

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