

# Clinical Profile and Patient-Doctor Communication in Gout Patients: A Feasibility Study

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## ABSTRACT

**Purpose:** To examine the clinical profile and patient-doctor communication in gout patients

**Patients and Methods:** Between February and April 2022, a descriptive cross-sectional study was conducted on gout patients referred to university clinics and municipal health institutions in central Riyadh, Saudi Arabia. The inclusion criteria for participants were blood uric acid levels over 6 mg/dl for females and 7 mg/dl for males, and an age of 18 years or older. The research sample was recruited through a process known as convenience sampling. Frequencies and percentages were used to present categorical variables in this study.

**Results:** A total of 58 patients were involved in this study. The mean age of the patients was 43.7 (14.7) years. Almost one-third of the patients (29.3%) were diagnosed by family medicine specialist. The mean duration of disease was 3.6 (3.5) years and the mean age at diagnosis was 38.4 (15.1) years. The most common complaint was joints pain accounting for 84.5%. The annual median number of attacks of gout before starting treatment was four and declined to two after the treatment. The most commonly used medications was colchicine (32.8%). Around one-fifth of the patients (22.4%) referred to nutritionist to treat gout. The most commonly discussed topic between the patients and their treating physicians was the nutrition plan and healthy life style accounting for 74.1%. The least commonly discussed topic between the patients and their treating physicians was stopping smoking accounting for 36.2%. The most commonly reported lifestyle measures applied by the patients to control gout were reducing eating legumes and red meat, accounting for 91.4% and 81.0%, respectively.

**Conclusion:** Adequate treatment of acute gout attacks requires a multifaceted strategy that may include behavioral and dietary changes in addition to medication. Improvements in illness management and patient outcomes can also be achieved through effective physician-patient communication.

**Keywords:** Communication; Gout; Patient; Physician; Saudi Arabia

## INTRODUCTION

Gout stands as the most prevalent form of inflammatory arthritis on a global scale and is triggered by elevated levels of uric acid in the body<sup>1-3</sup>. The excess uric acid crystallizes within joints, kidneys, tendons, and other tissues, resulting in inflammation and subsequent damage<sup>4-6</sup>. Its clinical manifestations typically include the sudden onset of severe joint pain accompanied by warmth, redness, and swelling in the joint. This condition is distinguished by joint deformities and the subcutaneous deposition of tophus<sup>7</sup>. Notably, gout substantially diminishes the quality of life<sup>8-10</sup> and raises the mortality risk<sup>11</sup>. Numerous studies have demonstrated a connection between gout and other conditions (such as stroke, cardiovascular incidents, and hypertension)<sup>7-9</sup>. Additionally, gout has a significant economic burden on the patients and the community<sup>10</sup>.

In practice, contemporary gout treatments, when administered carefully and adhered to consistently, prove efficacious in quelling gout attacks and enhancing the overall quality of life for most patients<sup>11-13</sup>. Episodes of acute gout are managed through various approaches,

including the use of oral colchicine, nonsteroidal anti-inflammatory drugs (NSAIDs), or joint aspiration and lavage<sup>5</sup>. For long-term care, the strategy involves making lifestyle adjustments and reducing uric acid levels through medications like allopurinol and probenecid, which hinder urate reabsorption<sup>5,14</sup>.

The prevalence and incidence of gout exhibit significant variation depending on the studied population and research methodologies. Thus, gout prevalence ranges from less than 1% to 6.8%, and an incidence ranging from 0.58 to 2.89 per 1,000 person-years<sup>15</sup>. Geographic regions and demographic factors such as gender and age contribute to the wide variability in gout prevalence<sup>15</sup>. However, the incidence of gout has increased globally<sup>1</sup>.

As incomes and resources have increased, individuals in Arab countries have increasingly adopted a more Westernized lifestyle, marked by greater meat consumption in recent years. Consequently, this shift has led to an upsurge in diabetes, obesity, gout, hyperuricemia, and hypertriglyceridemia incidence, particularly in developing nations<sup>16</sup>.

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In Saudi Arabia, the prevalence rate of gout is estimated to be approximately 8.4%<sup>17</sup>. Another prior carried out in Saudi Arabia found that healthcare providers exhibited suboptimal practices in the management of patients with gout<sup>18,19,20,21,22,23</sup>. This underscores the necessity for a feasibility clinical research study focusing on gout patients. Conducting a feasibility study serves as a fundamental step in assessing the practicality and viability of the study, ensuring efficient resource allocation and ethical compliance. Ultimately, such a study enhances the clinical significance of the research. Therefore, the aim of this feasibility study was to examine the clinical profile and patient-doctor communication in gout patients.

## METHODS

### Study design

Between February and April 2022, a descriptive cross-sectional study was conducted on gout patients referred to university clinics and municipal health institutions in central Riyadh, Saudi Arabia.

### Study population and recruitment

This study included individuals residing in Saudi Arabia who had been diagnosed with gout by their healthcare provider. The inclusion criteria for participants were blood uric acid levels over 6 mg/dl for females and 7 mg/dl for males, and an age of 18 years or older. Patients who failed to meet the inclusion criteria, were diagnosed with chronic illnesses other than gout, or did not grant consent for participation were excluded from the study.

### Sampling procedure

The research sample was recruited through a process known as convenience sampling. The current study comprised participants who willingly participated and satisfied the designated inclusion criteria, thereby being deemed qualified. At the onset of the survey, individuals were presented with an informed consent document and were given the option to either continue or terminate their involvement in the research. The study's objectives were effectively communicated to enhance the patients' comprehension of the significance of their participation. The invitation letter of the study provided a detailed description of the necessary inclusion criteria.

### Study questionnaire

The questionnaire included in this study was developed based on comprehensive evaluation of existing literature. The first part of the study encompassed the collection of demographic information, including gender, age, history of chronic conditions, level of education, and job status. The second part obtained clinical data and illness profiles from individuals diagnosed with gout. The variables considered in this study included the body mass index (BMI), previous occurrences of gout, medical history, and usage of drugs. The last part assessed the characteristics of communication between patients and doctors.

### Ethical approval

This research had ethical approval from Prince Sattam bin Abdulaziz University Deanship of Scientific Research, Research Ethics committee in Health and Science Disciplines. Approval number (REC-HSD-99-2021). All study participants gave their informed consent for inclusion before they participated in the study.

### Statistical analysis

The Statistical Package for Social Science (SPSS) software for Windows, version 29 (IBM Corp., Armonk, NY, USA) was used to

analyze the data for this study. Frequencies and percentages were used to present categorical variables in this study. Statistical significance was defined as p-value less than 0.05.

## RESULTS

Table 1 below presents the demographic characteristics of the patients. A total of 58 patients were involved in this study. The mean age of the patients was 43.7 (14.7) years. The majority of the patients were males (86.2%). The mean BMI of the patients was 31.5 (7.1) kg/cm<sup>2</sup>. More than half of the patients (53.4%) reported that they hold a bachelor's degree and were employed (60.3%). The most common comorbidity was hypertension (24.1%).

**Table 1.** Patients' demographic characteristics

Variable	Frequency	Percentage
<b>Age</b> (mean (standard deviation)) years	43.7 (14.7)	
<b>Gender</b>		
Male	50	86.2%
Body mass index (mean (standard deviation)) kg/cm <sup>2</sup>	31.5 (7.1)	
<b>Education</b>		
Secondary school or lower	21	36.2%
Bachelor's degree	31	53.4%
Higher education	6	10.3%
<b>Employment status</b>		
Employed	35	60.3%
Unemployed	23	39.7%
<b>Comorbidity history</b>		
Hypertension	14	24.1%
Osteoarthritis	12	20.7%
Dyslipidemia	12	20.7%
Diabetes mellitus	9	15.5%
Asthma	4	6.9%
<b>Medical professional who confirmed the diagnosis</b>		
Family medicine specialist	17	29.3%
Orthopedic specialist	14	24.1%
Other	10	17.2%
Rheumatologist	9	15.5%
Internal medicine specialist	8	13.8%
<b>Mean duration of disease (SD)</b>	3.6 (3.5)	
<b>Mean age at diagnose (SD)</b>	38.4 (15.1)	
<b>Main complains:</b>		
Joints pain	49	84.5%
Tophi	17	29.3%
Kidney disease	2	3.4%
Asymptomatic	11	19.0%
<b>Median number of attacks of gout annually before starting treatment (IQR)</b>	4 (5)	
<b>Median number of attacks of gout annually after starting treatment (IQR)</b>	2 (3)	
<b>Gout medications:</b>		
Colchicine	19	32.8%
Allopurinol	17	29.3%
Febuxostat	10	17.2%
NSAIDs	5	8.6%
None	17	29.3%
<b>Referred to nutritionist to treat gout?</b>		
Yes	13	22.4%

Acute gout attack management approach		
Drinking fluids	37	63.8%
Pain killers	23	39.7%
Colchicine	13	22.4%
Ice bags	7	12.1%

**Patients’ disease profile**

Table below presents the disease profile of the patients. Almost one-third of the patients (29.3%) were diagnosed by family medicine specialist. The mean duration of disease was 3.6 (3.5) years and the mean age at diagnosis was 38.4 (15.1) years. The most common complaint was joints pain accounting for 84.5%. The annual median number of attacks of gout before starting treatment was four and declined to two after the treatment. The most commonly used medications was colchicine (32.8%). Around one-fifth of the patients (22.4%) referred to nutritionist to treat gout. More than half of the patients (63.8%) reported that they drink fluids to manage their gout attack.

**Patients-doctor communication characteristics**

Table 2 below presents the characteristics of the communication between the patients and their treating physicians. The most commonly discussed topic between the patients and their treating physicians was the nutrition plan and healthy life style accounting for 74.1%. The least commonly discussed topic between the patients and their treating physicians was stopping smoking accounting for 36.2%. The most commonly reported lifestyle measures applied by the patients to control gout were reducing eating legumes and red meat, accounting for 91.4% and 81.0%, respectively.

**Table 2.** Patients-physician discussion themes

Variables	Frequency	Percentage
<b>Discussed with doctor the nutrition plan and healthy life style. Yes</b>	43	74.1%
<b>Discussed with your doctor the impact of not treating gout (that it may lead to complete damage to the joint, heart disease, blood vessels and kidney stones). Yes</b>	31	53.4%
<b>Discussed with doctor the optimal weight for your case. Yes</b>	30	51.7%
<b>Discussed with doctor how to prevent gout attacks. Yes</b>	29	50.0%
<b>Discussed with doctor duration of treatment. Yes</b>	28	48.3%
<b>Discussed with doctor about stopping smoking. Yes</b>	21	36.2%
<b>Which of the following lifestyle measures you take to control gout?</b>		
Reduce eating legumes	53	91.4%
Reduce eating red meat	47	81.0%
Drinking enough fluids	32	55.2%
Doing suitable exercises	24	41.4%
Reduce eating sea food	21	36.2%
Losing weight	21	36.2%

**DISCUSSION**

This feasibility study focused on the clinical profile and patient-doctor communication among gout patients, several key findings have emerged that highlight the current landscape of gout management. Globally, family medicine is recognised as a cornerstone of primary healthcare <sup>30</sup>. This study observed that approximately one-third of gout patients (29.3%) were diagnosed by family medicine specialists

in our study. This observation aligns with a previous study conducted in Saudi Arabia, which likewise found that about one-third of gout patients (33.3%) were diagnosed by family medicine <sup>31</sup>. These findings underscore the crucial role of family medicine specialists in gout diagnosis and management. Considering that gout is often associated with comorbidities such as hypertension, diabetes, and obesity, family medicine specialists must diagnose gout and address these comorbid conditions comprehensively. These findings also highlight the significant need for continuous training and education in family medicine to ensure the diagnosis and management of gout effectively.

Compared to previous research, this study revealed a shorter mean duration of gout disease, averaging 3.6 (3.5) years. The previous studies reported a broader range of disease durations, ranging from 5 to 17 years <sup>25-31</sup>. However, the mean duration in this study falls within the lower end of the range reported in a previous study, where the mean disease duration was 10 years, with a range of 3 to 12 years <sup>32</sup>. These findings suggest that gout could be diagnosed at an earlier stage in this study cohort compared to some previous studies, possibly due to improved awareness and diagnostic practices. Early diagnosis is crucial for initiating treatment, preventing disease progression, minimizing complications such as joint damage and tophi formation, and enhancing the patient's quality of life. Besides, in this study, the mean age at diagnosis was 38.4 (15.1) years, aligning closely with the mean age at diagnosis of 38 years reported for mono-articular arthritis (including gout) in the previous research <sup>33</sup>. In the past few decades, recent lifestyle changes (diets high in fructose and red meat, sedentary behaviours, and increased alcohol consumption), in addition to factors such as hyperuricemia and obesity, may have contributed to the trend of gout affecting young patients <sup>34</sup>. These findings highlight the need for increased awareness of gout as a potential diagnosis in younger individuals and the importance of early intervention as a preventive measure.

This study found that joint pain was the predominant complaint among gout patients, accounting for a significant 84.5%. This high prevalence of joint pain is consistent with the classic clinical presentation of gout, where sudden and severe attacks of joint pain, often in the big toe, are a hallmark feature. This intense joint pain can significantly impact patients' quality of life and daily functioning. The findings of this study align with a prior study conducted in Saudi Arabia, which also identified joint pain as the most common complaint among gout patients <sup>35</sup>. Gout is a complex medical condition with multiple stages. Over time, long-term gout sufferers may progress from experiencing acute attacks that affect one or a few joints to more frequent and recurring attacks involving several joints <sup>36</sup>. If left untreated or inadequately managed, gout can eventually progress into a chronic tophaceous form <sup>36</sup>.

This study found that the annual median number of gout attacks before starting treatment was four and declined to two after the treatment. The decline in the annual median number of gout attacks before and after treatment is a positive outcome that underscores the effectiveness of therapeutic approaches in managing gout, enhancing gout patients' quality of life, and preventing long-term complications <sup>37</sup>. These findings also emphasize the influential role of healthcare providers in diagnosing, educating, and managing gout patients to achieve better outcomes.

Among the findings of this study, it is noteworthy that colchicine was the most frequently prescribed medication, with 32.8% of patients receiving this treatment, followed closely by allopurinol at 29.3%. This highlights the pivotal roles of colchicine in managing acute gout attacks and allopurinol in lowering serum urate levels, subsequently reducing the risk of further acute attack. These findings align closely

with established guidelines for gout management. According to the American College of Rheumatology (ACR) recommendations, colchicine, NSAIDs, or prednisone are frequently employed as first-line therapies for managing gout flares<sup>38</sup>. Furthermore, the ACR recommends the use of allopurinol as the first-line agent for urate-lowering therapy (ULT) for all patients, including those with moderate-to-severe chronic kidney disease (CKD)<sup>38</sup>. It has been established that the utilisation of oral glucocorticosteroids, colchicine, and allopurinol represents a cost-effective treatment strategy for most gout patients<sup>39,40</sup>.

A prior study found that allopurinol was the most frequently used antihyperuricemic medication (82.3%) in the Colombian population, followed by colchicine (17.4%)<sup>47</sup>. Differences in medication utilization between this study and the previous one may be attributed to variations in geographic regions, clinical characteristics, and demographics of the studied populations. Patients with more chronic or severe gout often require long-term urate-lowering therapy, typically allopurinol. This underscores the need for tailored gout management strategies that consider the clinical profiles of gout patients.

For effective gout management, patients must understand how medications, dietary choices, and daily habits can influence their current medical condition<sup>36</sup>. This study revealed that approximately one-fifth of the gout patients (22.4%) were referred to a nutritionist as part of their gout treatment plan. Furthermore, the most commonly discussed topic between the patients and their treating physicians was the nutrition plan and healthy lifestyle, accounting for 74.1%. These findings hold significant importance and are highly encouraging, as they align with the core principles of gout management, emphasizing the pivotal role of dietary and lifestyle adjustments, as endorsed by prominent gout guidelines.

Consistent with the findings of this study, a prior study involving patient focus groups also emphasized the importance of diet and dietary modifications as top concerns among gout patients<sup>41</sup>. This underscores the significant emphasis that gout patients place on dietary adjustments as an essential component of their treatment strategy. These could also highlight proper knowledge related to diet and lifestyle modification recommendations among gout patients.

Furthermore, among Saudi Arabian populations, a previous study conducted in Taif City found that about 37.0% of participants recognized the importance of medications, lifestyle changes, and limiting meat consumption in managing gout<sup>42</sup>. Another previous study conducted in Riyadh City had comparable findings<sup>43</sup>.

This study's finding that more than half of the patients (63.8%) reported drinking fluids to manage their gout attacks which is notably higher than the 24.9% reported in a prior study conducted in central Riyadh, Saudi Arabia<sup>31</sup>. The practice of increasing fluid intake to manage gout attacks is consistent with recommendations from previous research. A previous study found an inverse relationship between serum uric acid levels and daily water intake, emphasizing the potential importance of hydration in gout management<sup>51</sup>. Additionally, another study suggested that there is a considerable reduction in recurring gout attacks (up to 46%) when enough water (at least 1920 mL) is consumed in the twenty-four hours before a gout flare<sup>52</sup>. These findings underline the potential benefits of adequate fluid consumption as part of gout management strategies.

This study found that the least commonly discussed topic between the patients and their treating physicians was stopping smoking, accounting for 36.2%. The finding of this study is consistent with a previous study, which found that less than half of gout patients (45.1%) confirmed such discussions with their physicians<sup>35</sup>. The relatively low

frequency of discussions about smoking cessation underscores the necessity to address this crucial aspect of gout management among healthcare providers. A prior study concluded that there was a link between dual smoking and elevated serum uric acid levels in adults<sup>44</sup>, further emphasizing the importance of managing serum uric acid levels in gout patients' by stopping smoking<sup>44</sup>. Additionally, considering that comorbidities such as hyperlipaemia, hypertension, and obesity are common in gout patients<sup>45-47</sup>, this supports the necessity for comprehensive patient care. These findings emphasize the urgent need to raise awareness and prioritize smoking cessation in gout patient management through effective patient-doctor communication, as this can positively impact gout, reduce gout-related comorbidities risk, and enhance overall patient well-being.

This study found that the most reported lifestyle measures applied by the patients to control gout were reducing the consumption of legumes and red meat, accounting for 91.4% and 81.0%, respectively. The traditional view regarding purine-containing foods and gout management was to restrict or eliminate them from the diet. This approach was based on the idea that purines found in foods like meats, seafood, and legumes could lead to higher urate levels in the body, exacerbating gout symptoms<sup>48</sup>. However, more recent research found that not all purine-containing foods have the same impact on urate levels, and some may even be beneficial for gout patients. For instance, legume consumption is now recommended as part of a balanced gout diet<sup>48</sup>. Numerous prior studies have demonstrated that patients often hold misconceptions about the specific foods they should avoid or incorporate into their diets<sup>49-51</sup>. Conversely, the study's finding that gout patients reduced their consumption of red meat aligns with established gout treatment recommendations<sup>48</sup>. These underscore the importance of clear and updated communication between healthcare providers and gout patients regarding dietary choices and emphasize the need to stay informed about the latest scientific evidence and guidelines to ensure that gout management strategies align with the most recent understanding of the condition.

## CONCLUSION

**The effective management of acute gout attacks necessitates the implementation of a holistic approach encompassing lifestyle modifications, dietary adjustments, and appropriate administration of pharmacotherapy. In addition, communication with the physician is an important element that should be implemented in order to enhance disease control and improve patients' outcomes.**

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**Data Availability Statement:** All data are available from the corresponding author upon reasonable request.

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