



FROM KITCHEN TO CLINIC: ASSESSING THE IMPACT OF TURMERIC, GINGER, AND OMEGA-3S ON PAIN AND SWELLING IN ARTHRITIS PATIENTS" ANWARUL ULOOM COLLEGE, MALLEPALLY, HYDERABAD

Nutritional Science

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ABSTRACT

This study investigates how an anti-inflammatory diet can help reduce symptoms of arthritis, including joint pain, swelling, and stiffness. It centres on three particular food items-turmeric, ginger, and omega-3 fatty acids-that are recognised for their anti-inflammatory properties. The research will evaluate the dietary habits of participants, their knowledge of these components, and how they incorporate them into their meals to assess their impact on symptom relief. Furthermore, it will look into how willing participants are to adopt structured anti-inflammatory diets for the long-term management of their condition. By connecting nutrition and lifestyle choices to improvements in symptoms, this research aims to identify effective food-based methods for managing arthritis. Ultimately, it aspires to merge traditional dietary practices with contemporary clinical approaches to improve patient care in treating arthritis.

KEYWORDS

anti-inflammatory diet, arthritis management, joint pain, turmeric, ginger, omega-3 fatty acids, dietary habits, symptom relief, nutritional strategies, traditional practices, clinical approaches.

INTRODUCTION

Osteoarthritis (OA) is a chronic degenerative joint disease that results in pain, stiffness, and decreased mobility, particularly among ageing individuals. Traditional treatments, such as NSAIDs and corticosteroids, often provide only temporary relief and can come with a range of side effects. Emerging research suggests that nutraceuticals-bioactive compounds derived from foods like turmeric, ginger, omega-3 fatty acids, vitamin D, and resveratrol-may help reduce inflammation and oxidative stress. These natural agents can alleviate pain, protect cartilage, and enhance joint function. Combining nutraceuticals with standard medical therapies presents a safer, more holistic approach to managing OA. Additionally, nutritional strategies that emphasise anti-inflammatory diets may further slow disease progression. Future studies should focus on optimising dosage, bioavailability, and synergistic combinations. Ultimately, integrating nutrition-based therapies has the potential to significantly improve the quality of life for individuals suffering from knee osteoarthritis.

AIM&OBJECTIVES

To evaluate the impact of an anti-inflammatory diet on arthritis symptoms by assessing key foods like turmeric, ginger, and omega-3 fatty acids.

Objectives:

1. Gather demographic data and lifestyle patterns of individuals with arthritis.
2. Assess awareness and adoption of anti-inflammatory dietary practices.
3. Evaluate the frequency of anti-inflammatory food consumption and its perceived effects on symptoms.
4. Analyse the relationship between dietary changes and improvements in pain, swelling, and stiffness.
5. Identify specific anti-inflammatory foods associated with symptom relief.
6. Explore participants' willingness to adopt a long-term anti-inflammatory diet.
7. Collect insights on other dietary habits and supplements influencing arthritis symptoms.

METHODOLOGY

Research methodology refers to the structured approach used to address research issues through data gathering, analysis, and interpretation (Murthy & Bojana, 2009). This study employed a cross-sectional observational design titled "From Kitchen to Clinic: Assessing the Impact of Turmeric, Ginger, and Omega-3s on Pain and Swelling in Arthritis Patients," aimed at examining the link between anti-inflammatory dietary intake and arthritis symptoms using a self-administered questionnaire.

A quantitative observational method was used to assess current dietary practices without intervention or random treatment assignment. Participants, aged 20 to 70, diagnosed with osteoarthritis (OA) or rheumatoid arthritis (RA), were recruited through various channels.

Convenience sampling was applied, and participation was voluntary.

Eligible participants were those who provided informed consent and could complete the questionnaire, while exclusions applied to pregnant or breastfeeding individuals, those on restrictive diets, or those with recent major health issues.

The structured questionnaire was collected:

1. Sociodemographic data (age, gender, occupation, lifestyle),
2. Anthropometric data (self-reported height and weight),
3. Health status (duration and severity of arthritis),
4. Food Frequency Questionnaire (FFQ) for anti-inflammatory foods, and
5. Symptom assessment using the Visual Analogue Scale (VAS) and WOMAC Index.

Participants completed the questionnaire via Google Forms or physical copies, with no intervention or follow-up.

Key outcome measures included:

- Primary variable: Frequency of anti-inflammatory food consumption.
- Secondary variables: Self-reported improvements in pain, swelling, stiffness, and mobility.

Data were analysed using Microsoft Excel and SPSS, employing descriptive statistics and Chi-square tests to assess correlations between dietary intake and symptom improvement. Results showed a significant positive correlation between anti-inflammatory food consumption and symptom relief ($\chi^2= 95.85-314.55$, $p<0.00001$), with turmeric, omega-3-rich foods, green leafy vegetables, and ginger commonly linked to reduced pain and inflammation. Most participants reported noticeable symptom improvement from their dietary habits.

RESULTS AND DISCUSSION

The study analysed responses from 200 participants to evaluate the relationship between anti-inflammatory dietary intake and arthritis symptom improvement.

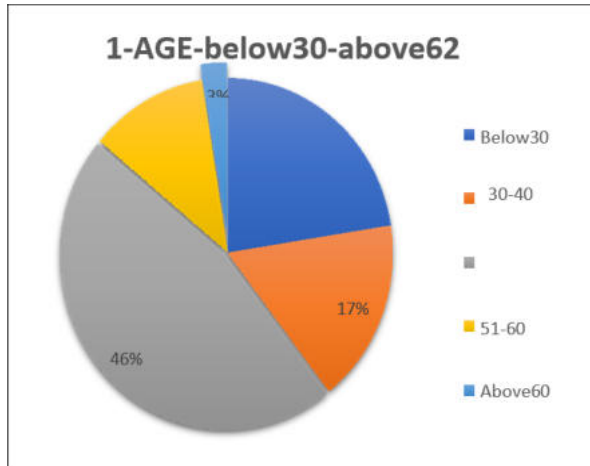
Demographics:

The majority of respondents (46.5%) were aged **41–50 years**, indicating that middle-aged adults are most engaged in arthritis-related dietary practices. About **57% were female** and **41.5% male**, showing higher female participation, which may reflect greater awareness or prevalence of arthritis among women.

Arthritis Characteristics:

Nearly **46.5%** of participants were diagnosed within the last year, while **42%** had lived with arthritis for 1–2 years, suggesting a predominance of newly diagnosed individuals. **Osteoarthritis** was the most common type (73%), followed by **rheumatoid arthritis (16.5%)** and **psoriatic arthritis (8.5%)**. Most respondents (57%)

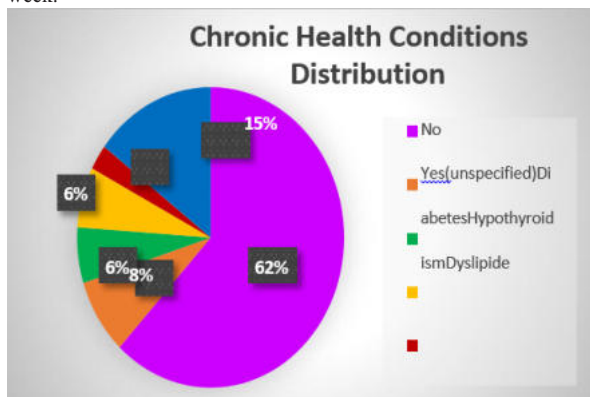
reported **no other chronic health conditions**, though some had diabetes(5.5%) or hypothyroidism(6%).



Dietary Patterns:

Only **10%** consumed anti-inflammatory foods daily, while **38%** did so 2–3 times per week and **25%** once a week. Just **13.5%** consciously made an effort to include such.

Foods, revealing low dietary awareness. Among specific foods, **turmeric (60%)** and **ginger (55%)** were the most common, followed by **omega-3-rich foods (25%)** and **garlic (20%)**. Consumption of **processed foods** remained high, with **57%** eating them at least once a week.



Lifestyle Factors:

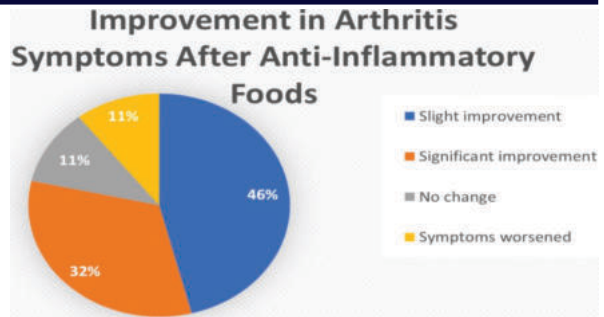
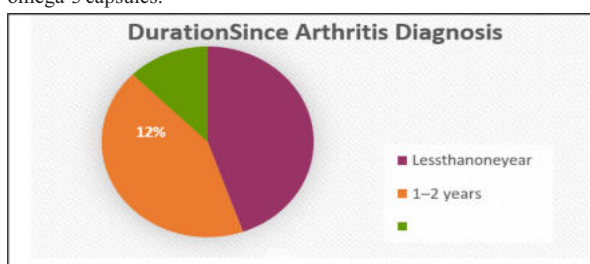
Most participants drank **1–2litres of water daily (55%)**, and **38.5%** had less than 15 minutes of sunlight exposure, suggesting a potential risk for vitamin D deficiency.

Symptom Severity and Improvement:

About **32%** reported **moderate symptoms**, and **23%** severe ones, indicating a high burden of discomfort. Encouragingly, **46%** noticed a slight improvement and **32.5%** significant improvement in symptoms after including anti-inflammatory foods, confirming their beneficial role. **Turmeric** and **green leafy vegetables** were most frequently cited for reducing pain and swelling.

Professional and Supplement Use:

A significant **68%** received dietary advice from health care professionals, reinforcing medical endorsement of nutrition-based management. However, **60.5%** did not use supplements; only **6.5%** used omega-3 capsules.

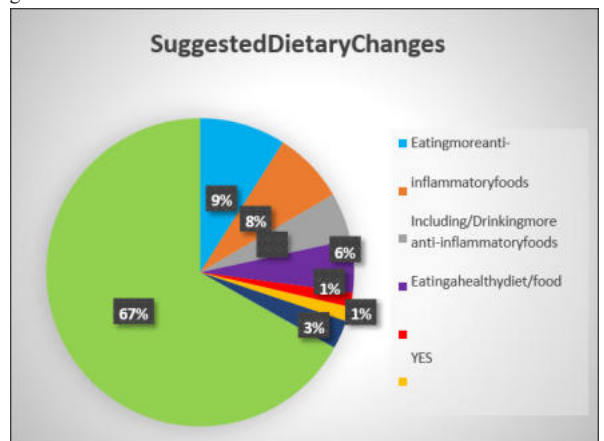


Barriers And Confidence:

Key challenges included **lack of knowledge (20.5%)**, **taste preferences (10%)**, and **limited access (9%)**. Only **12.5%** felt very confident in maintaining an anti-inflammatory diet, highlighting the need for education and motivation.

Dietary Suggestions:

Participants commonly recommended **increasing anti-inflammatory food intake (16.5%)** and adopting a healthier diet overall. However, **66.5%** gave unclear responses, reflecting the need for better dietary guidance and awareness.



Statistical Analysis

The collected data were analysed to assess the association between anti-inflammatory food consumption and improvements in arthritis symptoms. Statistical analyses were conducted on responses from 200 participants, using frequencies, percentages, and Chi-square tests for significance.

The Chi-square formula used was:

$$\chi^2 = \sum (O - E)^2 / E$$

Where O = Observed frequency, E = Expected frequency. A p-value of less than 0.05 was considered statistically significant.

1. Frequency of Anti-inflammatory Food Consumption and Symptom Improvement

Participants reported varying frequencies of anti-inflammatory food intake:

- 2–3 times a week: 87
- Once a week: 48
- Rarely: 37
- Daily: 24
- Never: 4

Chi-square results showed $\chi^2 = 95.85$, $df = 4$, $p < 0.00001$. This indicates a significant association between the frequency of intake and symptom relief.

2. Specific Anti-inflammatory Foods and Their Impact on Symptoms

Participants identified effective foods for alleviating symptoms:
 - Turmeric (111), Omega-3-rich foods (29), Green leafy vegetables (29), Ginger (26), Berries (4), Sia Gond (1).

Chi-square results were $\chi^2 = 314.55$, $df = 5$, $p < 0.00001$, highlighting turmeric as particularly beneficial.

3. Perceived Improvement in Symptoms After Dietary Changes

Participants reported varying degrees of symptom improvement:

Chi-square analysis produced $\chi^2 = 110.68$, $p < 0.00001$, confirming a strong link between anti-inflammatory intake and reduction in symptoms.

Overall Conclusion

All Chi-square tests yielded p-values < 0.00001 , supporting the hypothesis that regular consumption of anti-inflammatory foods, especially turmeric, ginger, and omega-3s, significantly improves arthritis symptom management and reduces inflammation. The Chi-square formula used was:

SUMMARY AND CONCLUSION

Arthritis is a chronic inflammatory disorder that significantly impacts mobility, comfort, and overall quality of life. It is characterised by persistent joint pain, swelling, and stiffness, presenting both physical and psychological challenges for those affected. While medications are the primary treatment option, their long-term use can lead to side effects, which has sparked interest in complementary approaches, such as nutrition-based therapies. This study explored the effects of an anti-inflammatory diet, with a particular emphasis on turmeric, ginger, and omega-3 fatty acids, in alleviating arthritis symptoms.

A cross-sectional observational study was conducted involving 200 clinically diagnosed arthritis patients, primarily those with osteoarthritis, who were recruited from outpatient clinics. Participants completed structured questionnaires that assessed demographics, lifestyle factors, the frequency of anti-inflammatory food consumption, and perceived changes in symptoms. The data were analysed using descriptive statistics and Chi-square tests to identify associations between dietary habits and improvements in symptoms.

Key Findings Include:

There is a notable link between the intake of anti-inflammatory foods and the improvement of symptoms ($\chi^2 = 95.85$, $df = 4$, $p < 0.00001$). Participants who consumed these foods two to three times a week or daily reported more substantial relief.

Turmeric was identified as the most advantageous ingredient, followed by foods rich in omega-3s, green leafy vegetables, and ginger, all demonstrating a highly significant relationship ($\chi^2 = 314.55$, $df = 5$, $p < 0.00001$).

In terms of overall changes in symptoms, a majority of participants indicated slight to substantial improvement in pain, stiffness, and swelling ($\chi^2 = 110.68$, $p < 0.00001$). Numerous participants expressed a readiness to make long-term dietary changes and mentioned learning about anti-inflammatory foods through social media and healthcare providers.

These findings provide strong evidence that regularly consuming anti-inflammatory foods can significantly alleviate arthritis-related discomfort. Turmeric, which is rich in curcumin, was most commonly associated with reductions in pain and swelling. Omega-3 fatty acids, known for their ability to decrease systemic inflammation, as well as ginger, which contains the bioactive compound gingerol, also played a significant role in relieving symptoms.

CONCLUSION

This study illustrates that a diet high in turmeric, ginger, and omega-3 fatty acids serves as a safe, accessible, and effective complementary method for managing arthritis. Statistically significant results ($p < 0.00001$) demonstrate that regular consumption of these foods is linked to a decrease in joint pain, stiffness, and swelling. In addition to physical improvements, participants noted enhanced motivation, self-efficacy, and a lower reliance on medications, highlighting the psychological benefits of dietary empowerment.

The findings correspond with global research on integrative health and underscore the necessity for collaboration among clinicians, dietitians, and wellness professionals to integrate dietary guidance into standard arthritis treatment. Public health campaigns should also aim to increase awareness and make anti-inflammatory foods more accessible.

In summary, this research connects traditional nutritional practices with contemporary clinical evidence, affirming that diet is not purely a

lifestyle decision but a clinically relevant intervention in managing arthritis. Future studies should investigate long-term impacts, standardised dietary guidelines, and the optimisation of bioavailability to reinforce food-based approaches in chronic disease management.

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