Patient-Reported Outcomes of Intermittent Fasting as a Complementary Strategy for Managing Rheumatoid Arthritis: A Survey-Based Study

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ABSTRACT

This study explored the practices and perceived benefits of intermittent fasting (IF) in among 50 Respondents , with a focus on its impact on rheumatoid arthritis (RA) symptoms. A significant proportion (~60%) adhered to the 16:8 fasting regimen, while fewer participants followed the 5:2 method or were uncertain of their fasting approach. Although only a minority were diagnosed with RA, those practicing IF reported notable reductions in joint inflammation and pain. Additionally, non-RA participants experienced benefits such as increased energy and improved digestion. Participants rated IF's effectiveness in managing RA symptoms at an average of 2.2 out of 5, indicating a moderate perceived benefit. Dietary patterns during fasting periods commonly included fruits, vegetables, dairy products. These findings suggest that IF may offer general health benefits and warrants deeper investigation in the context of RA.

Keywords: Intermittent fasting, rheumatoid arthritis, inflammation, immune modulation, complementary therapy, autoimmune diseases.

INTRODUCTION

Rheumatoid arthritis (RA) is a systemic autoimmune disorder characterized by chronic joint inflammation, pain, stiffness, and reduced mobility, affecting approximately 1% of the global population (Smolen et al., 2016). It arises due to a combination of genetic predispositions and environmental factors, leading to a progressive decline in quality of life among patients. Standard treatment regimens rely heavily on immunosuppressants and anti-inflammatory agents, which, while effective, often come with significant long-term adverse effects. Consequently, there is growing interest in alternative and complementary strategies to manage RA, reduce disease burden, and improve patient-centred outcomes.

Intermittent fasting (IF) has emerged as a potential complementary intervention due to its anti-inflammatory and immunomodulatory effects. IF involves periodic cycles of fasting and eating, which have been shown to influence metabolic health, reduce oxidative stress, and modulate immune responses (de Cabo & Mattson, 2019). These mechanisms are particularly relevant in RA, where systemic inflammation plays a central role in disease progression. Early studies have suggested that fasting may reduce disease activity and improve symptoms such as joint pain and morning stiffness in RA patients, indicating the potential of IF as an adjunctive strategy in RA management (Kjeldsen-Kragh et al., 1991; Müller et al., 2001).

One such approach is Intermittent Fasting (IF), which involves alternating periods of eating and fasting.

This paper aims to investigate the potential of IF as a supportive intervention for RA, grounded in current scientific research and primary data collected via an online survey.

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LITERATURE REVIEW

Rheumatoid arthritis (RA) is a chronic autoimmune inflammatory disorder characterized by persistent synovitis, systemic inflammation, and progressive joint damage, significantly impairing quality of life among patients (Smolen et al., 2016). Despite the use of conventional pharmacological treatments, including disease-modifying antirheumatic drugs (DMARDs) and biologics, many patients continue to experience pain, fatigue, and functional limitations (Singh et al., 2016; Matcham et al., 2014). This highlights the necessity for complementary management strategies to improve patient-cantered outcomes in RA.

Among various lifestyle interventions, intermittent fasting (IF) has emerged as a potential complementary approach due to its effects on systemic inflammation, immune modulation, and metabolic health (de Cabo & Mattson, 2019). IF involves periodic cycles of fasting and eating, with studies suggesting its ability to modulate pro-inflammatory cytokines, reduce oxidative stress, and enhance cellular repair mechanisms (Longo & Mattson, 2014). Such mechanisms are relevant to RA, where inflammation and oxidative stress play critical roles in disease progression.

Early investigations into fasting and RA, such as the work by Kjeldsen-Kragh et al. (1991), demonstrated reductions in joint pain, morning stiffness, and overall disease activity following fasting regimens, with benefits sustained over several months when followed by a vegetarian diet. Similarly, Müller et al. (2001) reported that fasting could reduce disease activity and inflammatory markers, potentially mediated by alterations in gut microbiota and immune modulation.

Systematic reviews and meta-analyses have indicated that fasting can reduce inflammatory biomarkers, including C-reactive protein (CRP), interleukin-6 (IL-6), and tumor necrosis factor-alpha (TNF-α), which are implicated in RA pathophysiology (Hartman et al., 2019; Brandhorst & Longo, 2019). However, these studies often focus on biochemical markers and clinical indices rather than patient-reported experiences, which are crucial for understanding the holistic impact of interventions in chronic diseases.

Patient-reported outcomes (PROs) provide insights into pain levels, fatigue, physical functioning, and overall well-being, which may not always correlate with clinical or laboratory markers but are essential indicators of treatment success and quality of life (Hirsh et al., 2010; Kirwan et al., 2011). Incorporating PROs in RA management aligns with a patient-centered care approach, ensuring that interventions address symptoms most impactful on daily living (Orbai & Bingham, 2015).

Despite the promising theoretical basis, there is a scarcity of contemporary, survey-based studies evaluating the impact of intermittent fasting on patient-reported outcomes in RA. While some pilot studies report subjective improvements in fatigue, pain, and joint stiffness during fasting periods, systematic data capturing the perspectives, challenges, and satisfaction levels of RA patients engaging in IF are limited (Müller et al., 2001; Steinborn et al., 2018).

Given the chronic nature of RA and the growing interest in non-pharmacological adjunctive therapies, it is essential to assess how patients perceive IF as part of their disease management, including perceived benefits, barriers, and sustainability of fasting practices. Understanding these patient perspectives can inform clinicians about the feasibility and acceptability of IF in routine care for RA patients, aiding in shared decision-making.

Study Design and Data Collection

A cross-sectional survey was conducted to assess perceptions regarding intermittent fasting among individuals with or without a formal diagnosis of RA. Participants completed a structured Google Form comprising both multiple-choice and closed-ended questions. Disseminated through academic networks and social media platforms, the survey emphasized voluntary and anonymous participation.

Fifty respondents contributed, providing information on:

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RA diagnosis status

Symptomatic changes post-intermittent fasting (e.g., pain, inflammation, energy levels)

Perceived effectiveness of IF (rated on a scale from 1 to 5)

RESULT

Intermittent Fasting Practices

Among the 50 respondent, a substantial proportion engaged in IF, predominantly following the 16:8 regimen (~60%). A smaller number practiced the 5:2 method, while a few were uncertain about their exact approach.

RA Diagnosis and Symptom Improvement

A minority of participants had been diagnosed with RA. Those who practiced IF reported notable reductions in joint inflammation and pain. Interestingly, even non-RA participants observed benefits such as heightened energy levels and improved digestion.

Perceived Effectiveness

On a scale of 1 (least effective) to 5 (most effective), participants' average rating for IF's effectiveness in managing RA symptoms was approximately 2.2, indicating moderate perceived benefits.

Dietary Patterns During Fasting

Participants' dietary choices during fasting periods varied, with fruits, vegetables, and dairy products being the most frequently consumed. Some also reported consumption of light snacks or plant-based foods.

Public Interest in Research

Remarkably, all respondents expressed a strong desire for further scientific research and support exploring the relationship between IF and RA management.

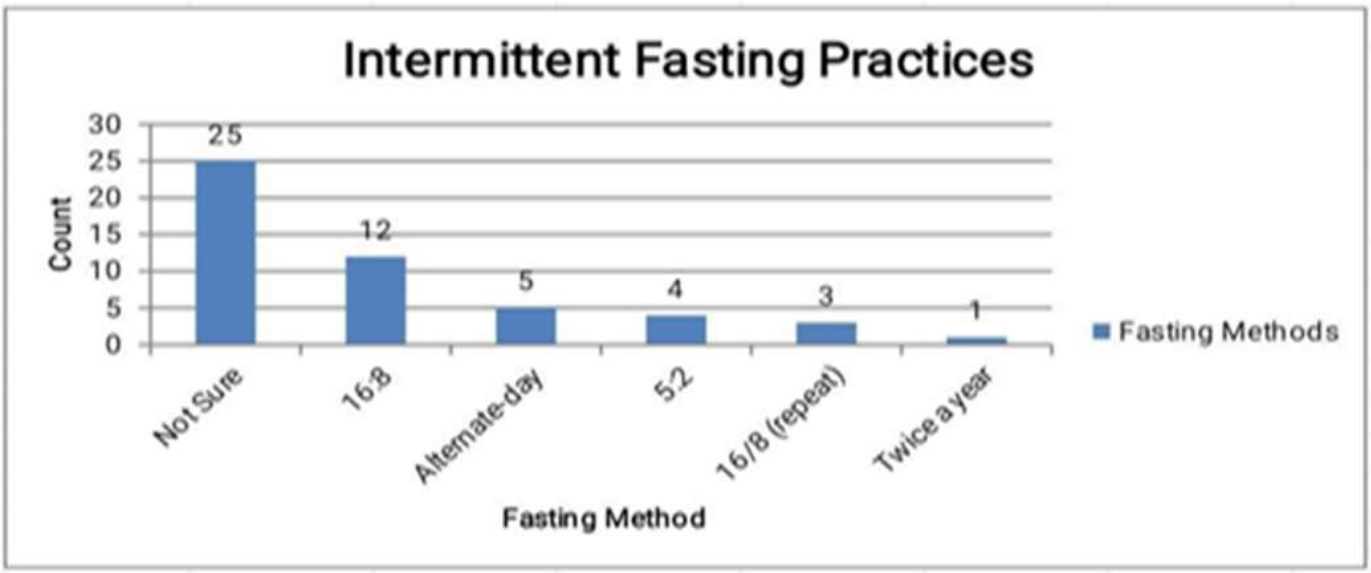

Fig-1

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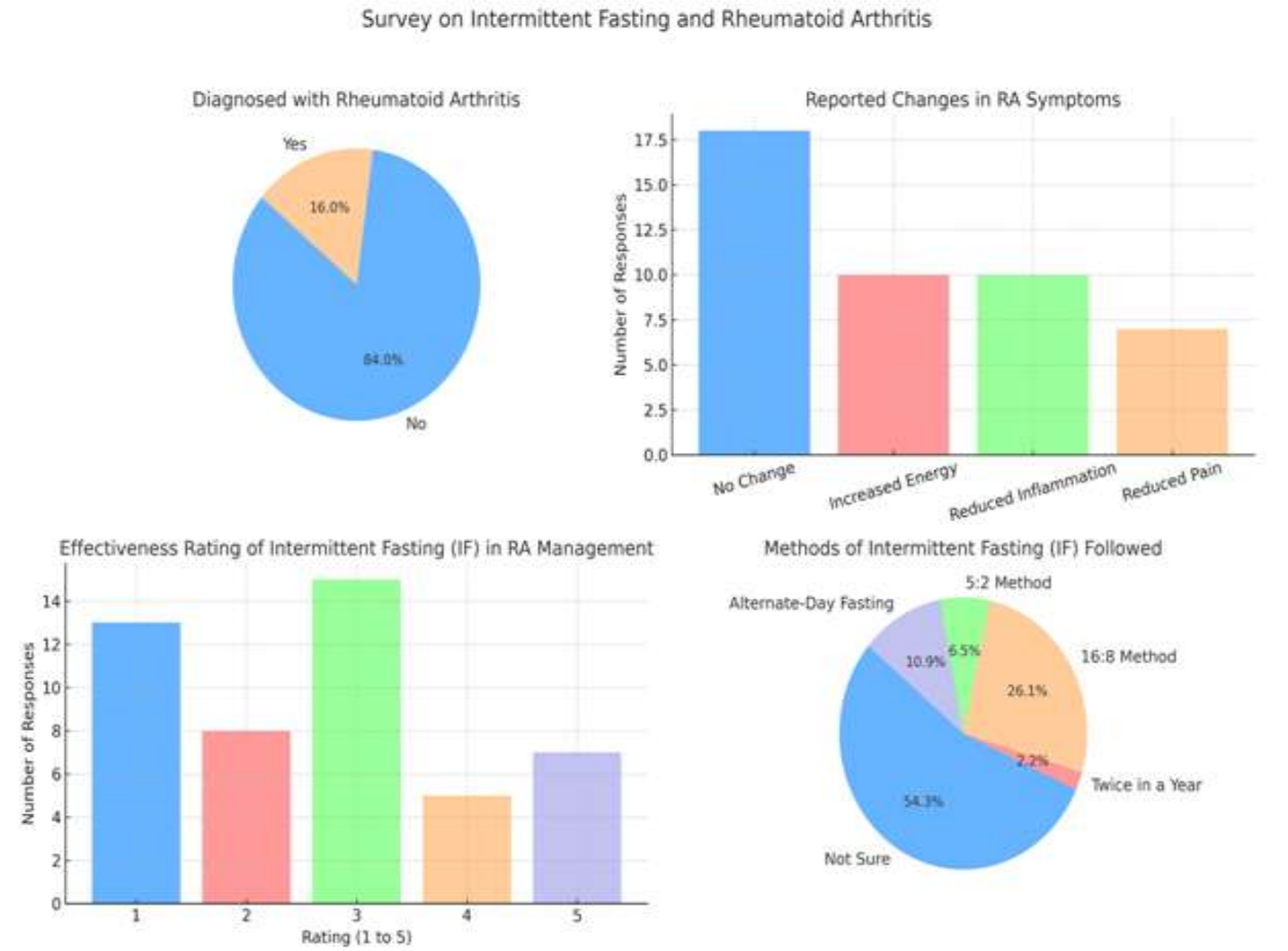

Figure-2 Showing Result by various bar diagram & Pie chart Analysis

DISCUSSION

This study, based on survey responses, examined how intermittent fasting (IF) might influence rheumatoid arthritis (RA) symptoms. Out of 50 participants, 16% (n = 8) disclosed a formal RA diagnosis. Several among them reported improvements attributed to IF, with 20% (n = 10) experiencing decreased inflammation, 14% (n = 7) noting reduced pain levels, and another 20% (n = 10) reporting increased energy. Despite these positive outcomes, 36% (n = 18) indicated no perceptible changes.

The findings suggest that IF could offer supportive benefits for managing RA symptoms, in line with prior research linking fasting to anti-inflammatory and immune regulatory effects (Longo & Panda, 2016). However, since symptom evaluation was self-reported, the subjective nature of the data must be taken into account.

Participants assessed IF effectiveness on a scale from 1 to 5, with the most common score being 3 (n = 15), reflecting moderate perceived benefits. Meanwhile, 13 individuals rated it as 1 (least effective), and 7 considered it highly effective (rating of 5), indicating diverse personal experiences.

Interestingly, 50% of participants (n = 25) were uncertain about the exact IF protocol they followed, pointing to a gap in education and structured fasting approaches. Among those familiar with their method, the 16:8 regimen was most common (n = 12), followed by alternate-day fasting (n = 5) and the 5:2 approach (n = 3). A single participant reported fasting only twice a year, likely due to cultural or religious practices rather than systematic IF.

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Intermittent fasting has shown benefits in conditions like obesity, diabetes, and neurodegenerative diseases (Longo & Panda, 2016). It may exert immune-modulatory and anti-inflammatory effects, crucial in RA progression (de Cabo & Mattson, 2019), by lowering pro-inflammatory cytokines (TNF-α, IL-1β, IL-6), enhancing gut microbiota diversity, and supporting T-cell homeostasis (Mattioli & Farinetti, 2017; Zarrinpar et al., 2014; Choi et al., 2016). Although we did not measure these mechanisms directly in this study, they offer a scientific rationale for IF's potential benefits in RA management.

While the study offers preliminary evidence of the potential benefits of IF, several limitations must be recognized. These include the small sample size of RA patients, reliance on self-reported data, and lack of control over variables such as medication, diet, and physical activity, which could influence outcomes.

CONCLUSION

This pliminary survey investigated whether intermittent fasting (IF) could have beneficial effects for individuals with rheumatoid arthritis. Some participants observed improvements in inflammation, pain, and energy levels while practicing IF, although not all reported positive changes. Overall, moderate effectiveness ratings suggest that IF may serve as a helpful adjunct in RA management.

Nevertheless, the study's small sample size and reliance on subjective reporting warrant cautious interpretation. The growing interest in non-pharmacological interventions for chronic diseases highlighted by this survey underscores the need for more extensive, controlled clinical research. Future investigations should target larger, more diverse populations and explore the physiological mechanisms through which IF might influence autoimmune disorders like RA.

RECOMMENDATIONS

- Educate RA patients about intermittent fasting under medical supervision.
- Encourage doctors to discuss IF as a supportive option in RA management.
- Organize workshops to increase awareness of safe IF practices.
- Conduct further research on IF in RA for better evidence.
- Include it Govt.of India National Nutrition Mission

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