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Quality of Life and Patient Outcomes: Investigating the Impact of Rheumatic Diseases on the Quality of Life of Patients, Assessing their Functional Status, Pain Levels, Psychological Well-Being, and Overall Satisfaction with Treatment

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Abstract: **Background:** Rheumatoid arthritis is one of the most impactful arthropathies due to its ability to induce permanent joint damage and cause variable-degree functional disability that decreases the patient's life expectancy. **Objective:** This paper was contributed to assess and analyse the clinical outcomes of patients with rheumatic diseases and its impact on their quality of life and satisfaction rate with treatment. **Patients and methods:** We recruited 80 patients with rheumatic disease who were collected from different hospitals in Iraq for a period between March 6, 2022, and October 15, 2023. The clinical data included the duration of the disease and diagnoses of the disease by ultrasound, magnetic resonance imaging, and CT scan. All patients were subject to taking medications and were divided into three categories. Where the first category included non-steroidal anti-inflammatory drugs (NSAIDs), which included 30 patients; disease-modifying antirheumatic drugs (DMARDs), which included 26 patients; and corticosteroids, which included 24 patients. We also determined the degree of disease activity, ranging from 0 to 10, where zero represents the worst degree of disease activity and 10 represents the highest degree of disease activity, the level of pain and functional status in patients suffering from rheumatic disease through the Health Assessment Questionnaire (HAQ) scale and the quality of life of patients during the follow-up period. **Results:** We enrolled clinical findings of patients where the most prevalent symptoms included joint pain with 19 cases, fatigue with 14 cases, swelling with 11 cases, fever with 11 cases, and the rate of patients have comorbidities was 60%, the most causes shown that environmental factors with 15 cases, poor diet with 20 cases, genetics with 22 cases, types of rheumatic diseases have prevalence into patients which contain rheumatoid arthritis got 45 cases. We conducted activity disease that found that low was 10 cases, moderate was 25 cases, high was 43 cases, which aspect of after medications used where remission was 64 cases, low was 10 cases, moderate was 4 cases, high was 2 cases. For pain scores of patients with rheumatic disease, 1st month was 4.83 ± 1.02, 2nd month was 2.51 ± 0.12, 3rd month was 1.32 ± 0.01, where satisfaction level of patents on medications efficiency included excellent have 68 cases, good have 7 cases, fear have 3 cases, and poor have 2 cases. **Conclusion:** The current study indicated the effect of treatments in the management of rheumatic disease, which caused an improvement in the functional status, development of physical activity, and quality of life of patients.

Keywords: Rheumatoid arthritis; Quality of life; Functional status; Complication; and Pain level.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic systemic inflammatory disease of unknown cause, although its etiology is recognized as autoimmune [Santos-Moreno, P. *et al*., 2015]. It seems clear that the origin of the disease is multifactorial, invoking the participation of initiating factors, probably infectious, that act on genetically predisposed individuals, as well as sociological and environmental factors. [Santos-Moreno, P. *et al*., 2017 – Santos-Moreno, P. I. *et al*., 2015]

The health-related quality of life (HRQOL) is a multidimensional concept related to the individual impact of the disease and its treatment, as well as the functional capacity and the perception of the patient in social, physical, and mental roles. [Stoffer, M. A. *et al*., 2014]

Rheumatoid arthritis (RA) and osteoarthritis (OA) are two frequent rheumatic diseases associated with deterioration in physical function and HRQOL, affecting different age groups and most of them in productive stages. The prevalence of RA clinically recognizable by the criteria of the American College of Rheumatology (ACR) is established between 1% and 2% of the adult population. [Briggs, A. M. *et al*., 20172 – Hu, H. *et al*., 2018]

For the treatment of this disease, multiple therapeutic regimens have been used, ranging from non-steroidal anti-inflammatory drugs, corticosteroids, monotherapy with disease-modifying drugs (DMARs), combined therapy to biological therapy, currently indicated in persistent and active RA in patients who have not responded to Methotrexate and other DMARDs. Within biological therapy, the most commonly used drugs are the so-called TNF tumor necrosis factor antagonists (Infliximab, Etanercept, Adalimumab, and Anakinra), the latter an Interleukin antagonist. [Voshaar, M. J. H. *et al*., 2015; Santos-Moreno, P. *et al*., 2017]

In general, RA is associated with a marked reduction in life expectancy, which is related, on the one hand, to the systemic affectations generated by the disease itself and, on the other, to the toxicity of the treatments used, which sometimes induce patients to abandon treatment. [Valencia, O. *et al*., 2017]

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Chronic diseases impact on morbidity and mortality, and on the quality of life of patients worldwide and are responsible for 72% of the total burden of diseases. It is well known that end-stage renal failure (ESRD) and diabetes mellitus (DM) have a great impact on the physical, mental, and emotional role. [Ministerio de Salud y Protección Social, 2014; Bossert, T, 2014]

The activity level of rheumatic diseases correlates inversely with HRQOL; one of the instruments used to determine activity in RA is the Disease Activity Score (DAS-28), and at the OA, the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) allows us to determine the degree of functional capacity. [MSPS, 2020]

PATIENTS AND METHODS

A cross-sectional study was conducted for patients with rheumatic disease, which included 80 patients. All clinical data for patients were collected from different hospitals in Iraq for a period between March 6, 2022, and October 15, 2023. The clinical and demographic data included age, gender, symptoms, comorbidities, length of illness, smoking level, and condition. For any previous surgeries, previous use of medications before contracting the disease, level of education, and monthly income. We analysed and designed the study methodology for the data of patients with rheumatic disease using SPSS, version 22.0.

In addition, this study recorded the clinical outcomes associated with the hospital's rheumatic disease diagnostic data in terms of diagnostic techniques of ultrasound, MRI, and CT scan, the resulting causes of the disease, and the types of rheumatic disease. Also, all patients underwent medication and were divided into three categories where the first category included non-steroidal anti-inflammatory drugs (NSAIDs), which included 30 patients; disease-modifying antirheumatic drugs (DMARDs), which included 26 patients; and corticosteroids, which included 24 patients.

Furthermore, we determined data related to patients' disease management during follow-up (three months) before and after the medications used on the basis of the DAS28 scale, as the scale is specialized in determining the degree of disease activity and ranges between 0 - 10, where 0 represents the worst degree of disease activity and 10 represents the highest degree of disease activity.

Also, we evaluated the pain scores of patients suffering from rheumatic disease after the medications used during follow-up using the VAS scale, which ranges from 0 to 10, where 0 represents the degree of recovery and 10 represents the degree of severity in pain. We evaluated the functional status of patients suffering from rheumatic disease through the Health Assessment Questionnaire (HAQ) scale. As the Health Assessment Questionnaire scale evaluates the functional level of patients after treatment during the follow-up period, as it ranges between 0 - 3, where 0 represents excellent functional mobility, and 3 represents as a high and severe difficulty in functional movement.

Data were also recorded to assess the quality of life (QoL) for patients suffering from rheumatic disease during the follow-up period using the quality of life standard for patients with a range extending between 0 - 100, where 0 represents poor quality of life, and 100 represents the optimal quality of life.

RESULTS

Table 1: Clinical and demographic characteristics outcomes for patients with rheumatic diseases

Characteristics	Number of patients [80]	Percentage [%]
Age		
40 – 50	18	22.5%
51 – 60	26	32.5%
61 – 70	36	45%
Sex		
Male	24	30%
Female	56	70%
Symptoms		
Joint pain	19	23.75%
Stiffness	8	10%
Swelling	11	13.75%
Fatigue	14	17.5%

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Muscle weakness	10	12.5%
Fever	11	13.75%
Loss of appetite	7	8.75%
BMI, kg/m3		
Underweight	5	6.25%
Normal weight	14	17.5%
Overweight	23	28.75%
Obesity	28	35%
Comorbidities		
Yes	48	60%
No	32	40%
Obesity	38	47.5%
Hypertension	42	52.5%
Diabetes	22	27.5%
Chronic Kidney disease	16	20%
Cerebrovascular disease	9	11.25%
Heart diseases	13	16.25%
Pulmonary disease	10	12.5%
Smoking status		
Yes	12	15%
No	68	85%
Prior medication used		
Yes	32	40%
No	48	60%
Previously undergone surgeries		
Yes	28	35%
No	52	65%
Disease duration (years)	4.24 ± 1.50	
Education status		
Not in the school	10	12.5%
Primary	12	15%
Secondary	18	22.5%
College/university	40	50%
Monthly income, $		
< 600	40	50%
600 – 900	20	25%
> 900	20	25%

Table 2: Determine clinical outcomes of rheumatic diseases diagnose in the hospital

Variables	Number of patients [80]	Percentage [%]
Imaging tests		
Ultrasounds	36	45%
MRIs	24	30%
CT scans	20	25%
Causes		
Autoimmune disorders	23	28.75%
Environmental factors	15	18.75%
Poor diet	20	25%
Genetics	22	27.5%
Types of rheumatic diseases		
Rheumatoid arthritis	45	56.25%
Osteoarthritis	16	20%
Lupus	10	12.5%
Gout	7	8.75%
Fibromyalgia	2	2.5%

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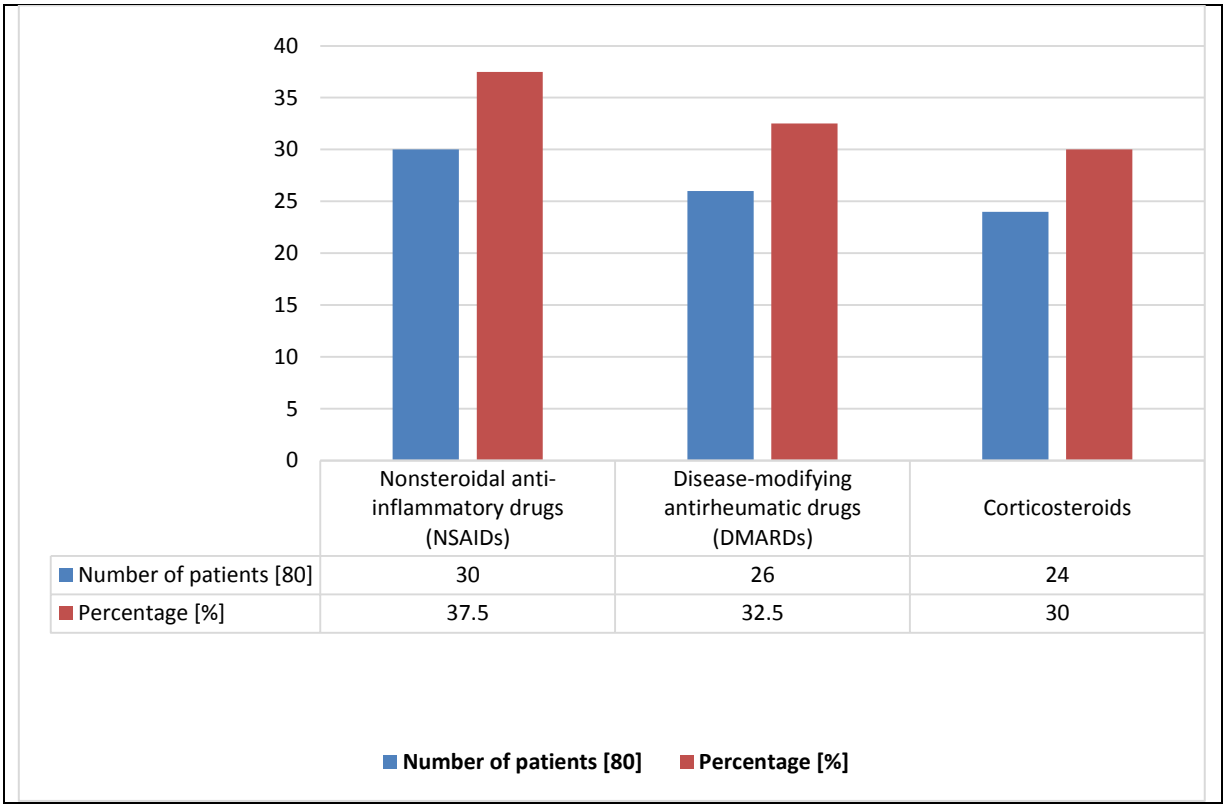

Figure 1: Types of medications used to treat patients with rheumatic diseases

Table 3: Disease management of patients during follow-up (three months) before and after medications used based on the DAS28 scale

Scores	Before medications period	After medications period
Remission	2 [2.5%]	64 [80%]
Low	10 [12.5%]	10 [12.5%]
Moderate	25 [31.25%]	4 [5%]
High	43 [53.75%]	2 [2.5%]

Table 4: Assessment of pain scores for patients with rheumatic disease after medications used during follow–up

Follow–up months	VAS scale
1st month	4.83 ± 1.02
2nd month	2.51 ± 0.12
3rd month	1.32 ± 0.01

Table 5: Assessment of functional status at patients with rheumatic disease by Health Assessment Questionnaire (HAQ) scale

Items	After medications period
Dressing and grooming	1.0 ± 0.02
Arising	0.8 ± 0.01
Eating	0.6 ± 0.03
Walking	1.2 ± 0.1
Hygiene	1.1 ± 0.01
Reaching	0.88 ± 0.006
Grip	0.97 ± 0.07

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Table 6: Satisfaction rate of patients on treatment management

Items	Number of patients [80]	Percentage [%]
Excellent	68	85%
Good	7	8.75%
Fear	3	3.75%
Poor	2	2.5%

Table 6: Assessment quality of life (QoL) of patients with rheumatic disease during follow – up period

Items	QoL scores
The physical aspect	85.40 ± 8.2
The psychological aspect	88.20 ± 4.36
The social and emotional aspect	83.50 ± 5.92
Daily activity aspect	83.30 ± 6.81

DISCUSSION

This study was enrolled demographic and clinical outcomes where we found class of age (60 - 70) years was highest with 45% of patients, age (51 – 60) years was 32.5% of patients, age (40 – 50) years was 22.5%, males were 30%, and females were 70%, most prevalent symptoms included joint pain with 19 cases, fatigue with 14 cases, swelling with 11 cases, fever with 11 cases, BMI classified into four sections which include underweight with 5 cases, normal weight with 14 cases, overweight with 23 cases, obesity with 28 cases, rate of patients have comorbidities was 60% which include hypertension got 42 cases, diabetes have 22 cases, chronic Kidney disease have 16 cases, smoking status was 15% of patients, prior medication used was 40%, previously undergone surgeries were 35%, disease duration was 4.24 ± 1.50 years.

According to diagnoses data, all patients were conducted to diagnoses of diseases in which ultrasounds included 36 cases, MRIs included 24 cases, CT scans included 20 cases, where common causes autoimmune disorders with 23 cases, environmental factors with 15 cases, poor diet with 20 cases, genetics with 22 cases, types of rheumatic diseases have prevalence into patients which contains rheumatoid arthritis got 45 cases, osteoarthritis got 16 cases, lupus got 10 cases, gout got 7 cases, fibromyalgia got 2 cases.

Based on clinical outcomes of, medications used which divided into three categories. Where the first category included non-steroidal anti-inflammatory drugs (NSAIDs), which included 30 patients; disease-modifying antirheumatic drugs (DMARDs), which included 26 patients; and corticosteroids, which included 24 patients, we measured disease activity by the DAS28 scale where before medications used included remission was 2 cases, low was 10 cases, moderate was 25 cases, high was 43 cases, which aspect of after medications used where remission was 64 cases, low was 10 cases, moderate was 4 cases, high was 2 cases. For pain scores of patients with rheumatic disease, 1st month was 4.83 ± 1.02, 2nd month was 2.51 ± 0.12, 3rd month was 1.32 ± 0.01. According to the Health Assessment Questionnaire (HAQ) scale findings, we noticed dressing and grooming was 1.0 ± 0.02, arising was 0.8 ± 0.01, and eating was 0.6 ± 0.03. Satisfaction levels included excellent have, 68 cases, good have, 7 cases, fear have 3 cases, and poor have 2 cases.

Some studies agreed that rheumatic problems can have a substantial influence on a patient's quality of life, impacting many facets of their health, which patients may have difficulty doing everyday tasks, resulting in a deterioration of their ability to function and independence, where pain levels are frequently high in rheumatic disease patients, limiting their capacity to accomplish chores and lowering their general level of life. [Yazdany, J. *et al*., 2017 – Laires, P. A. *et al*., 2013]

British studies found that the chronic nature of these illnesses, as well as the constraints they impose, also have a negative impact on patients' psychological well-being, with many enduring high levels for stress, anxiety, and despair, which can aggravate the physical symptoms resulting in a vicious cycle involving discomfort and mental suffering where evaluating patients' functional status, levels of pain, as well as psychological well-being is critical for understanding how rheumatic illnesses affect their overall quality of life. [Ruiz, R. *et al*., 2017 – Gleason, P. P. *et al*., 2013]

An American study shows that the satisfaction of patients with rheumatic disease treatment can be impacted by how well their symptoms are treated, the degree of assistance they receive from

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healthcare personnel, and their ability to live a normal life despite their illness [Kawatkar, A. A. *et al*., 2012]. By addressing the physiological, emotional, and social elements of rheumatic illnesses, healthcare teams can improve patients' overall treatment satisfaction and quality of life. [Brooks, P. M. *et al*., 2006; Michet, C. J. *et al*., 2015]

CONCLUSION

The current study showed that rheumatic disease has a negative impact on the patient's quality of life and functional status in terms of physical activity, ability to move, and psychological state, which causes high pain in the joints and generates difficulties in performing daily activities. However, this study noted the importance of treatments of NSAIDs, disease-modifying antirheumatic drugs, and corticosteroids in reducing the rate of pain, improving functional status, and ensuring recovery in patients' quality of life, causing a positive development of daily activity.

REFERENCES

1. Santos-Moreno, P., Castañeda, O., Garro, B., Flores, D., Sánchez, G. & Castro, C. "From the model of integral attention to the creation of centers of excellence in rheumatoid arthritis." *Clinical Rheumatology*, 34.S1 (2015): 71–77.
2. Santos-Moreno, P., Galarza-Maldonado, C. and Caballero-Uribe, C. V, *et al*. "REAL-PANLAR project for the implementation and accreditation of centers of excellence in rheumatoid arthritis throughout Latin America: a consensus position paper from REAL-PANLAR group on the improvement of rheumatoid arthritis care in Latin America establishing centers of excellence." *Journal of Clinical Rheumatology*, 21.4 (2015): 175–180.
3. Santos-Moreno, P., Caballero-Uribe, C. V. and Cardiel, M. H, *et al*. "A consensus position paper from REAL-PANLAR group about the methodological approach for the accreditation process of centers of excellence in rheumatoid arthritis in Latin America." *Journal of Clinical Rheumatology*, 25.1 (2019): 54–58.
4. Santos-Moreno, P. I., de la Hoz-Valle, J., Villarreal, L., Palomino, A., Sánchez, G. & Castro, C. "Treatment of rheumatoid arthritis with methotrexate alone and in combination with other conventional DMARDs using the T2T strategy. A cohort study." *Clinical Rheumatology*, 34.2 (2015): 215–220.
5. Stoffer, M. A., Smolen, J. S. and Woolf, A, *et al*. "Development of patient-centered standards of care for rheumatoid arthritis in Europe: the eumusc.net project." *Annals of the Rheumatic Diseases*, 73.5 (2014): 902–905.
6. Briggs, A. M., Fary, R. E., Slater, H, *et al*. "Disease-specific knowledge and clinical skills are required by community-based physiotherapists to co-manage patients with rheumatoid arthritis." *Arthritis Care & Research*, 64.10 (2012): 1514–1526.
7. Pan American Health Organization. "Access to High-Cost Medicines in the Americas: Situation, Challenges and Perspectives." (2010): 81.
8. Hu, H., Luan, L., Yang, K. & Li, S.-C. "Burden of rheumatoid arthritis from a societal perspective: a prevalence-based study on the cost of illness for patients with rheumatoid arthritis in China." *International Journal of Rheumatic Diseases*, 21.8 (2018): 1572–1580.
9. Voshaar, M. J. H., Nota, I., Van De Laar, M. A. F. J. & Van Den Bemt, B. J. F. "Patient-centered care in established rheumatoid arthritis." *Best Practice & Research Clinical Rheumatology*, 29.4–5 (2015): 643–663.
10. Santos-Moreno, P., Caballero-Uribe, C. V. and Massardo, M. L, *et al*. "Systematic and progressive implementation of the centers of excellence for rheumatoid arthritis: a methodological proposal." *Clinical Rheumatology*, 36.12 (2017): 2855–2858.
11. Valencia, O., Lopes, G., Sánchez, P., Acuña, L., Uribe, D. & González, J. "Incidence and prevalence of cancer in Colombia: the methodology used matters." *Journal of Global Oncology*, 4 (2017): 1–7.
12. Ministerio de Salud y Protección Social. "*Resolución* 5926 De 2014." (2014): 1–48.
13. Bossert, T. "Inter-American Development Bank, (IDB Technical Note; 585)." Comparative Review of Health System Integration in Selected Countries in Latin America. Available from: https://publications.iadb. Org/en/publication/11898/comparative-review-health-system-integra tion-selected-countries-latin-america. (2014).
14. MSPS. "Resolucion 1393 De 2015." *Colombia* (2015):14. Available from: https://cuentadealtocosto.org/site/images/Resolucion 1393 de 2015 - ARTRITIS.pdf. (2020).
15. Yazdany, J., Myslinski, R., Johansson, T. & Kazi, S. "OP0068 practices participating in the ACR's rheumatology informatics system for

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effectiveness (RISE) national registry show improvements in quality of care." *Annals of the Rheumatic Diseases*, 79 (2017): 2–80.
16. Smolen, J. S., Landewé, R. and Breedveld, F. C, *et al*. "EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2013 update." *Annals of the Rheumatic Diseases*, 73.3 (2014): 492–509.
17. Prevoo, M. L. L., Van'T Hof, M. A., Kuper, H. H., Van Leeuwen, M. A., Van De Putte, L. B. A. & Van Riel, P. L. C. M. "Modified disease activity scores that include twenty-eight-joint counts development and validation in a prospective longitudinal study of patients with rheumatoid arthritis." *Arthritis & Rheumatism*, 38.1 (1995): 44–48.
18. Bruce, B. & Fries, J. F. "The Stanford health assessment questionnaire: dimensions and practical applications." *Health and Quality of Life Outcomes*, 1 (2003): 20.
19. Laires, P. A., Exposto, F., Mesquita, R., Martins, A. P., Cunha-Miranda, L. & Fonseca, J. E. "Patients' access to biologics in rheumatoid arthritis: a comparison between Portugal and other European countries." *European Journal of Health Economics*, 14.6 (2013): 875–885.
20. Lurie, J. D., Bell, J. E. & Weinstein, J. "What rate of utilization is appropriate in musculoskeletal care?" *Clinical Orthopaedics and Related Research*, 467.10 (2009): 2506–2511.
21. Ruiz, R., Strasser-Weippl, K. and Touya, D, *et al*. "Improving access to high-cost cancer drugs in Latin America: much to be done." *Cancer*, 123.8 (2017): 1313–1323.
22. Badamgarav, E., Croft, J. D. & Hohlbauch, A. "Effects of disease management programs on the functional status of patients with rheumatoid arthritis." *Arthritis & Rheumatism*, 49.3 (2003): 377–387.
23. Gleason, P. P., Alexander, G. C. and Starner, C. I, *et al*. "Health plan utilization and costs of specialty drugs within four chronic conditions." *Journal of Managed Care Pharmacy*, 19.7 (2013): 542–548.
24. Kawatkar, A. A., Jacobsen, S. J., Levy, G. D., Medhekar, S. S., Venkatasubramaniam, K. V. & Herrinton, L. J. "Direct medical expenditure associated with rheumatoid arthritis in a nationally representative sample from the Medical Expenditure Panel Survey." *Arthritis Care & Research*, 64.11 (2012): 1649–1656.
25. Brooks, P. M. "The burden of musculoskeletal disease–a global perspective." *Clinical Rheumatology*, 25.6 (2006): 778–781.
26. Michet, C. J., Strobova, K., Achenbach, S., Crowson, C. S. & Matteson, E. L. "Hospitalization rates and utilization among patients with rheumatoid arthritis: a population-based study from 1987 to 2012 in Olmsted County, Minnesota." *Mayo Clinic Proceedings*, 90.2 (2015): 176–183.

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