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Economic Burden of Rheumatoid Arthritis in Iran: A Societal Perspective

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ABSTRACT

Background: Rheumatoid arthritis (RA) is a progressive and chronic systemic inflammatory disease and imposes a significant economic burden on patients and societies if not controlled. This study aimed to determine the economic burden of RA in Iran in 2022.

Methods: This economic burden study was carried out as cross-sectional research in 2022, in which 765 patients referred to the medical centers affiliated with Shiraz University of Medical Sciences in Fars province were included through census. The prevalence-based and bottom-up approaches were also used, respectively, to prepare the cost information and calculate the costs from the societal perspective. The human capital approach was used to calculate the indirect costs as well. The Excel 2016 software was used for data analysis.

Results: The results showed that the economic burden of RA in Iran was \$6388.64 per patient-year in 2022. In addition, the mean annual costs of RA per patient in remission, low, and moderate-to-severe states were, respectively, \$6268.24, \$6248.00, and \$6729.43 in 2022.

Conclusions: RA imposed a significant economic burden on the community and patients, and direct medical costs (DMCs), especially the cost of medicines, were the most important component. It is suggested to provide necessary facilities to produce RA medicines in the country and expand the home care services in order to reduce the economic burden.

1 | Introduction

Rheumatic diseases are chronic progressive diseases that damage the locomotor system, lead to disability, and, thus, reduce the patient's quality of life. Inflammatory rheumatic diseases are

especially dangerous to health [1]. The most common inflammatory rheumatic diseases are rheumatoid arthritis (RA) and spondyloarthritis. Progressive joint injury, pain, disability, and premature mortality are some characteristics of RA, especially if not treated in a timely manner [2]. The patients often

Mehdi Rezaee and Dr. Farhad Lotfi had equal participation as the first author, and we would like to consider both as co-first authors.

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were more likely to forget or approximate some of the costs. In addition, due to the lack of accurate evidence on the number of RA patients in Iran, the opinions of some of the best experts in this field were used in the present study. It is worth mentioning that intangible costs were not calculated in this study due to the inability to measure them accurately.

5.2 | Policy Implications

Regarding the results, to decrease the RA economic burden, the high share of medicine costs, and the large amount of the cost of importing medicine from other countries, it is proposed to provide a context for producing these medicines in the country.

Besides, given the high share of the transportation costs, it is suggested to decrease these costs by equitable and proper distribution of physicians, developing the home care center, and expanding telemedicine services.

6 | Conclusions

In general, the results showed that the economic burden of RA was about \$1,968,337,344 (minimum: 1,104,814,681; maximum: 3,141,770,219) in 2022, accounting for about 0.7% of the GDP in 2022. In addition, RA could impose a heavy economic burden on the health care system, insurance system, and the patients themselves due to its relatively high prevalence in Iran and the world, being chronic, as well as needing lifelong treatment and the treatment costs. According to the results of the present study, DMCs accounted for the highest costs, the largest share of which were the costs of medicines.

According to the obtained results, and in order to reduce the economic burden of RA, it is suggested that health managers and policy makers provide necessary facilities for the production of these medicines in the country because of the high medicine costs and high prices of foreign medicines.

Author Contributions

Mehdi Rezaee: conceptualization, methodology, data curation, software, supervision, validation, writing – review and editing. **Farhad Lotfi:** conceptualization, methodology, data curation, software, supervision, validation, roles/writing – original draft. **Ahmad Gholami:** conceptualization, data curation, methodology, supervision, validation, writing – review and editing. **Jassem Azizpoor:** data curation, methodology, software, validation, writing – review and editing. **Elham Aflaki:** conceptualization, methodology, supervision, validation, writing – review and editing. **Afsaneh Vazin:** conceptualization, methodology, validation, writing – review and editing. **Khosro Keshavarz:** conceptualization, data curation, methodology, software, project administration, investigation, supervision, validation, writing – review and editing.

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Ethics Statement

All data were collected and handled in accordance with the relevant privacy protection guidelines. This study was approved by Shiraz University of Medical Sciences with the Grant No. 97-01-07-18106 and ethical code IR.SUMS.REC.1399.100. Verbal consent was obtained from respondents who completed a questionnaire anonymously, and their response expressed their willingness to participate. Written consent was obtained from participants for the cognitive interviews.

Consent

All participants completed a consent form, stating that they were well-informed about the content of questionnaires and that they agreed to the publication of anonymized data.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The datasets generated and analyzed during the current study are not publicly available because they contain information that could compromise the privacy of research participants but are available from the corresponding author upon reasonable request.

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