

## Clinical science

# Coalition for Health and Gender Equity (CHANGE)—a protocol for a global cross-sectional survey of health and gender equity in rheumatology

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## Abstract

**Objectives:** The primary aim of the CHANGE survey is to determine the current state of gender equity within rheumatology, and secondarily, to review the physician perspective on bullying, harassment and equipoise of opportunities within rheumatology.

**Methods:** The CHANGE e-survey is a cross-sectional self-reported questionnaire adapted from EULAR's gender equity in academic rheumatology task force. The survey was launched in January 2023; it is available in six languages and distributed widely via rheumatology organizations and social media. Eligible participants include rheumatologist physicians and rheumatology health-care professionals. Survey responses will undergo descriptive analysis and inter-group comparison aiming to explore gender-based discrimination using logistic regression, with subgroup analyses for country/continent variations.

**Conclusion:** This e-survey represents a comprehensive global initiative led by an international consortium, aimed at exploring and investigating the gender-related disparities and obstacles encountered by rheumatologists and rheumatology health-care professionals across diverse communities and health-care environments. By pursuing this initiative, we aim to take the broader rheumatology community a step closer to understanding the underlying origins of inequities and their determinants. Such insights are pivotal in identifying viable interventions and strategies to foster gender equity within the field. Ultimately, our collective objective is to ensure equitable access to opportunities for every individual, irrespective of gender, thereby promoting inclusivity and fairness across the entire spectrum of professional practice and career development.

## Lay Summary

### What does this mean for patients?

The CHANGE Study, led by a team of rheumatology professionals worldwide, is working to make health care more equal for everyone. We are focusing on challenges faced by rheumatologists, such as fair pay and career opportunities. To understand these issues better, the team is gathering information through a global survey of rheumatology professionals. The goal is to find out why there are differences and come up with solutions. Ultimately, the aim is to create a fair and inclusive environment in rheumatology, ensuring that everyone has the same chances to grow in their careers, regardless of their gender. The findings of the study will help to create better guidelines, promoting fairness and equality for health-care professionals in rheumatology.

**Keywords:** rheumatology, professionals, gender, equity, women, surveys and questionnaires.

### Key messages

- Coalition for Health and Gender Equity (CHANGE) is a global network of rheumatology professionals.
- The CHANGE group assesses the state of equity in academia, practice and leadership globally.
- The group hopes that the results will inform evidence-based rheumatology guidelines to foster gender equity in global initiatives.

## Introduction

Gender equity refers to the principle of ensuring fairness, impartiality and justice in distributing resources, opportunities and benefits among individuals of all genders. There is growing attention to gender inequity within the rheumatology workforce, with persistent challenges in achieving pay parity, career progression and access to leadership roles [1–3]. The United Nations' 2030 Agenda for Sustainable Development has called for 'women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life' [4]. Gender disparities in pay and progression are reflected across academia, clinical practice and leadership settings [5].

It is imperative that firstly, the extent of inequity is assessed, and that secondly, the requirements for career support to accelerate progression in professional and academic rheumatology are determined. There is a paucity of data on the physicians' perspective of gender equity within the rheumatology profession. A large, multinational survey is a beneficial method for assessing gender equity in rheumatology,

because it allows for a comprehensive analysis of diverse perspectives and experiences across different regions, providing valuable insights into potential disparities and opportunities for improvement in the field.

For this purpose, a global group of experts with representation from different leagues and organizations conceptualized a global network of rheumatology professionals – Coalition for Health and Gender Equity (CHANGE). The gender equity project being conducted by CHANGE is endorsed by several regional and national rheumatology leagues, including the Association for Women in Rheumatology (AWIR), the African League against Rheumatism (AFLAR), the Asia-Pacific League of Associations for Rheumatology (APLAR), ArLAR (Arab League of Associations for Rheumatology) and the Pan-American League of Association for Rheumatology (PANLAR) and American College of Rheumatology (ACR), and is supported by an International League of Associations for Rheumatology (ILAR) grant.

The primary aim of this study is to determine the current state of gender equity within rheumatology, and secondarily,

to review the physician perspective on bullying, harassment and equipoise of opportunities within rheumatology. Finally, we review proposed interventions to mitigate any perceived inequity.

## Methods

An extensive survey evaluating the current status of gender equity in global rheumatology was developed to evaluate three key domains: academia, clinical practice and leadership. The CHANGE survey is a cross-sectional self-reported questionnaire that investigates gender equity among rheumatologists and allied health professionals to develop potential solutions to the professional challenges raised. The survey is designed to assess the current state of perceived equity and unmet needs faced by the rheumatology workforce, identify proposed solutions, and potentially, develop a framework to address the identified problems. The survey has undergone pilot testing, validation and vetting, followed by translations into eight languages.

### Survey design

The survey comprises 38 items covering gender-based discrimination, work–life balance, potential interventions for career support, and professional development ([Supplementary Data S1](#), available at *Rheumatology Advances in Practice* online). It includes 15 multiple-choice questions with single-answer options and 12 with multiple-answer options. Informed consent is obtained in the introduction to the survey. The survey was launched on a survey-hosting website ([www.surveymonkey.com](http://www.surveymonkey.com)). In addition, considering cultural sensitivities, the name and certain survey items are modified in the Arabic version ([Supplementary Data S1](#), available at *Rheumatology Advances in Practice* online) to exclude questions on sexuality and bullying.

### Sample size estimation

A pragmatic approach is taken for participant recruitment to allow a broader participation and representation of respondents. Given the complexity of the topic and the potential for unequal gender distribution among respondents, the focus is on collecting real-world data from a diverse range of participants, acknowledging that individual perspectives and experiences could vary widely. This approach aims to capture a comprehensive view of gender equity within the rheumatology profession.

### Pilot testing and validation

Three rheumatologists (L.G., L.C. and M.P.G.) and a sociologist (P.O.) reviewed the questions for face validity and confirmed them to represent the intended content. The survey was pilot tested with multiple rounds of dummy completion by the members of the steering committee of the CHANGE group, who critically evaluated the questionnaire. The median (interquartile range) time to complete the survey was 5 (3–6) min. The survey was designed such that respondents could modify the survey responses before submission, but no responses could be modified after final submission.

### Population selection

Eligible participants include rheumatologist physicians and rheumatology health-care professionals (HCPs), including nurses, physiotherapists, occupational therapists and other

HCPs specializing in rheumatology. Rheumatologists and HCPs directly involved in the care of patients with rheumatic diseases of any age, gender, region and practice setting will be eligible. Convenience, snowball and target sampling approaches will be used to maximize responses and participation. For this purpose, rheumatologists and HCPs who are members of national societies will be approached through their societies, when the latter would endorse the study and agree to approach their members, assuming that most target rheumatologists are members of the national societies.

### Consent and ethics approval

Ethics approval was obtained from the ethics review board of Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India (226014) according to local regulations. A statement explaining the purpose of the study is included in the cover letter, providing the participants with the option to consent or decline participation. No incentives are offered for survey completion. The Committee on Publication Ethics (COPE) guidelines are adhered to for data collection [6], and the Checklist for Reporting Results of Internet e-surveys (CHERRIES) and Consensus-Based Checklist for Reporting of Survey Studies (CROSS) will be used to report the data [7–9].

### Survey dissemination

The survey is distributed through various channels, including email lists of regional and national rheumatology leagues, including AWIR, AFLAR, APLAR, ArLAR and PANLAR and several national rheumatology organizations. Additionally, is disseminated through social media platforms, including Twitter, WhatsApp groups, Facebook, LinkedIn pages and the personal networks of the investigators. The survey was launched online in January 2023 and is currently ongoing.

### Statistical analysis

Data obtained from the survey will be downloaded from the hosting website. These data will undergo descriptive analysis and inter-group comparison using SPSS v.28 for Windows (SPSS Inc., Chicago, IL, USA). The primary outcome of this study is to investigate the difference in discrimination experienced by all genders across the profession, measured by the presence of perceived discrimination in any domain using logistic regression. Subgroup analyses will investigate variance by country/continent. Continuous variables with normal distribution will be presented as the mean (s.d.); non-normal variables will be reported as the median (interquartile range). The means of two continuous normally distributed variables will be compared by Student's independent-samples *t*-test. The Mann–Whitney *U* test and the Kruskal–Wallis test will be used to compare means of two and three or more groups of variables non-normally distributed. The frequencies of categorical variables will be compared using Pearson  $\chi^2$  or Fisher's exact test, as appropriate. A value of  $P < 0.05$  will be considered significant.

### Future analysis from the dataset

Subgroup analysis based on geographical location, practice type and other relevant factors will be undertaken to understand the needs of female rheumatologists and the unmet needs in their professional careers. The analyses from the

CHANGE survey dataset will inform evidence-based guidelines within rheumatology practice.

### Dissemination of outcomes

The study findings will be disseminated in a peer-reviewed journal and presented as abstracts in scientific conferences. In addition, a concise summary of study findings will be provided to participants upon request.

### Discussion

There are pressing challenges affecting the global rheumatology workforce. These include a shortage of human resources, pay disparities, prolonged working hours and burnout [10], which result in decreased productivity in the health-care systems. Research suggests possible gender differences in how practitioners experience and respond to these challenges [10]. Inequity in health systems results in job dissatisfaction, loss of confidence and reduced earnings, whereas promoting equity results in increased productivity of health systems. This allows better patient care, equal opportunities and financial growth to occur [11]. In addition to the aforementioned factors, there are glass ceilings and undefined barriers to academic and professional development [12]; for example, reduced visibility of opportunities appears to be a key factor impacting the advancement of women to editorial board positions [13]. CHANGE aims to quantify and explore such barriers, highlight the unmet needs of rheumatology professionals, and suggest interventions for overcoming these obstacles.

Gender equity is essential for a fair and contented society. Evidence suggests that fostering equity, as indicated by a review of various studies, ensures policies that cater to the well-being of all [14]. Organizations can boost the health of patients positively. Advancing women in medicine is linked with advancing women's health [15]. Using the research talent of individuals irrespective of their gender allows research potential to be maximized to benefit patients' health [16]. Therefore, working towards equity is for society's advancement and well-being. Not only does it empower women, but it also benefits men [17]. Grass-root-level changes have the potential to bring about major improvements in public health, akin to World Health Organization initiatives to recommend hand washing to reduce surgery-related mortality.

There is evidence that the global rheumatology workforce is attaining parity in many regions [18–21]; however, there are gaps in academic excellence and research productivity, for instance in attaining senior authorship positions and publishing in high-impact journals [22]. Moreover, there remain disparities in editorial board positions [13, 23], rheumatology peer review process, attainment of awards [24] and speaker representation at international rheumatology conferences [25–27]. Preliminary data suggest that substantial gender gaps exist within leadership positions in both global [28] and regional rheumatology leagues [29]. The reasons for this have not been elucidated and might relate to limited visibility of opportunities, selection processes or implicit biases. Trends might also vary owing to cultural constructs [27]. CHANGE, as a globally reaching survey, will review these questions. Hence, there are wide-ranging challenges that need to be addressed to ensure equity in academic and professional development besides addressing the gender pay gap in rheumatology practice [12].

Several initiatives have accelerated equity and aided professional development. The EULAR gender equity task force (GEAR) in rheumatology is an example of a comprehensive intervention programme on gender equity [30, 31], which has highlighted the gender differences in career advancement in academic rheumatology [31]. The Association of Women in Rheumatology (AWIR), Rheumatology Donne (ReDO) and Female Advancement In Rheumatology (FAIR) are further examples of such initiatives with a focus on advocacy, in addition to establishing an inter-institutional network of rheumatologists to highlight and address the unmet clinical and scientific needs of women [12]. There remains a need for a global initiative that highlights and addresses the unmet clinical and scientific needs of female rheumatologists around the globe.

### Conclusion

The CHANGE survey has been designed to provide real-world data on gender equity in rheumatology today and assess the unmet needs of women in rheumatology. These insights will inform global rheumatology leagues, organizations and workplaces. The findings from the CHANGE survey are anticipated to be available by the end of 2024, aiming to contribute to evidence-based policies and recommendations that enhance the productivity and satisfaction of the global rheumatology workforce.

### Supplementary material

Supplementary material is available at *Rheumatology Advances in Practice* online.

### Data availability

The data underlying this article are available in the article and in its online [supplementary material](#).

### Contribution statement

Conceptualization: L.G. and L.C. Data curation: all authors. Formal analysis: T.K., L.G., S.D. and P.O. Funding acquisition: L.C. and L.G. Investigation: L.G., L.C. and T.K. Methodology: L.G., L.C. and T.K. Software: L.G. Validation: V.A., L.G. and L.C. Visualization: L.C. and L.G. Writing—original draft: T.K., L.G., S.D. and P.O. Writing—review and editing: all authors. All the authors acknowledge their contribution and take full responsibility for the integrity and accuracy of the work presented. No artificial intelligence software was used in writing or editing the present manuscript.

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