Evidence report

E4E: Self-management education programs for rheumatoid arthritis

What is self-management for rheumatoid arthritis?

Self-management education programs are designed to help people with rheumatoid arthritis take an active role in managing their symptoms. They teach skills such as problem solving, making decisions, finding support, and taking practical steps to manage and cope with symptoms. Components of self-management education programs may include constructive mindset approaches to managing, coping with emotional distress, health-directed activities (practical actions to improve health), health service navigation, social integration and support, self-monitoring and insight, and skill and technique acquisition, for example, education about rheumatoid arthritis and the benefits and harms of medication and other therapies. The programs are provided in addition to medical care. The program format may be provided in an individualized or group setting, in person, by telephone, or online, and may be in written or visual formats.

Is it effective?

A systematic review (Wu 2022) of 24 randomized controlled trials found low to moderate certainty evidence that self-management interventions may result in medium to large improvements in physical function, disease activity, general health and self-efficacy compared to usual care or a waiting list. For the outcomes of pain, anxiety, and depression, the evidence is too imprecise, including both the possibility of a meaningful benefit and the possibility of little to no effect, to determine the effect of self-management interventions for rheumatoid arthritis (low to moderate certainty evidence). The harms are considered minimal and clinical practice guidelines on the treatment of rheumatoid arthritis recommend self-management strategies. (England, Nikiphoruk). See Figure 1 for the SoF table.

Characteristics of studies

Populations

Participants were predominantly female and middle-aged to older adults, consistent with the epidemiology of rheumatoid arthritis; several studies reported samples in which women comprised more than 80–90% of participants, and one study focused exclusively on women. Studies were conducted in Europe, North America, Australia, Iran, China and Taiwan.

Interventions

Self-management interventions for rheumatoid arthritis were heterogeneous in structure, delivery, and personnel. Interventions typically addressed symptom management (pain, fatigue, stiffness), medication adherence, joint protection, physical activity, coping strategies, and problem-solving skills. Some programs additionally focused on work participation, daily activity adaptation, or psychosocial support.

Interventions were delivered in both group-based and individual formats. Modes of delivery included in-person, clinic-based; by telephone, often used for follow-up education, medication adherence support, or ongoing coaching after hospital discharge; and internet-based delivery, including fully online self-management programs providing educational modules, interactive tools, and peer discussion forums. Several studies used hybrid models, combining initial face-to-face education with subsequent telephone or online support.

Group-based programs were common in earlier and clinic-based studies and typically involved structured education sessions delivered to small groups of patients, sometimes with partners or family members included. Individual interventions were more common in later studies and in telehealth or home-based models, allowing tailoring to individual needs and circumstances. Several studies combined group education with individual follow-up or reinforcement sessions.

Most interventions were health-professional led, particularly by nurses, occupational therapists, physiotherapists, or multidisciplinary rheumatology teams. Nurse-led interventions were especially prominent in telephone-based and follow-up programs, while occupational therapists commonly delivered joint protection, activity modification, or work-related self-management components. A small number of programs incorporated elements of peer interaction or mutual support, but formal delivery by lay leaders or community representatives was uncommon. In digitally delivered programs, facilitation was typically provided by health professionals through online platforms rather than in real time.

How certain are we of the results?

The certainty of the evidence ranged from low to moderate, downgraded for concerns about the risk of bias in the methodology of the studies, specifically the lack of blinding of the participants, and unclear randomisation and concealment of allocation, inconsistency in the results across studies, and imprecision with results ranging from no effect to an important benefit.

Equity relevant information from studies included in Wu 2022 systematic review

Baseline equity-relevant characteristics in primary studies

Baseline equity-relevant characteristics were reported inconsistently across studies. Gender/sex and age were almost universally reported, whereas other PROGRESS-Plus domains were variably captured. Even when equity-relevant variables such as education, marital status, or income were measured, they were reported descriptively without further analytic use, limiting assessment of differential effects across PROGRESS-Plus groups.

Baseline characteristics across studies indicate high representation of female, middle-aged to older adults with long-standing rheumatoid arthritis.

Equity-relevant data extracted from primary studies

Author, year	Study / citation	Equity focused feasibility and/or acceptability considerations	Equity focused implementation considerations
Anvar et al., 2018	Effectiveness of self-management program on arthritis symptoms among older women: a randomized controlled trial study	In-person self management program at clinics was effective at improving self efficacy pain and function, and was acceptable for older women with low literacy	Conducted in small town in Iran, limiting generalizability
Barlow & Wright, 1998	Knowledge in patients with rheumatoid arthritis: a longer term follow-up of a randomized controlled study of patient education leaflets.	Written materials may not suit all patients and that comprehension/engagement may vary.	The intervention of patient education leaflet is low cost and easily disseminated within routine care.
Conn et al., 2012/2013	The effect of the Arthritis Self-Management Program on outcome in African Americans with rheumatoid arthritis served by a public hospital	Study focused on economically disadvantaged, majority unemployed, Black females. Effectiveness demonstrated in those who attended >4 ASMP classes; lack of transportation and transport costs, caregiving and other responsibilities were major barriers to attendance.Existing ASMP needs re-design to be feasible.	Those with less than 6th grade reading level were excluded. To improve participation, suggest different delivery models may be needed, e.g. frequent patient contact with trained individuals and removing attendance obstacles, though this would be labour intensive and expensive; could incorporate self management into chronic care models.
Giraudet-Le Quintrec et al., 2007	Effect of a collective educational program for patients with rheumatoid arthritis: a prospective 12-month randomized controlled	Reasons for not participating in the trial of intensive, multidisciplinary education included lack of motivation including desire to avoid confronting the disease, travel distance, and family or professional obligations, indicating feasibility and acceptability barriers for a time-consuming, 8 week program.	Study population had a high level of education and medical knowledge, and long disease duration. A personalized, tailored education approach may improve results.
Hammond et al., 2004	A randomised controlled trial of occupational therapy for people with early rheumatoid arthritis	Approximately one third of participants with early RA and relatively good functional status did not perceive comprehensive OT/self-management education as relevant or necessary because they felt they were “not that bad yet,” suggesting acceptability and engagement may vary by baseline functional limitation (Plus: disability) and readiness to change.	Self-management education may need to be timed, targeted, or tailored according to functional status, perceived need, and readiness to engage, rather than delivered uniformly early to all patients. Patients at risk of greater functional disability, including those with poorer socioeconomic status, may benefit from more comprehensive or tailored occupational therapy.
Helewa et al., 1991	Effects of occupational therapy home service on patients with rheumatoid arthritis	Study assesed home-based occupational therapy, including patient education, to address access barriers related to disability and mobility, and found a clinically important improvement in function and it was feasible.	nr
Hill et al., 2020	Effect of patient education on adherence to drug treatment for rheumatoid arthritis: a	The authors state that the one-to-one patient education method used in the study is relatively expensive, although it can be used in almost any setting.	Group patient education led by specially trained lay teachers with arthritis may be a more practical model to explore than one-to-one education.

Author, year	Study / citation	Equity focused feasibility and/or acceptability considerations	Equity focused implementation considerations
	randomised controlled trial		
Hossein et al.	The Effect of Educational Program on Selfefficacy of Women with Rheumatoid Arthritis: A Randomized Controlled Clinical Trial	nr	nr
Kirwan et al., 2005	Clinical and psychological outcomes of patient education in rheumatoid arthritis	nr	nr
Lovisi et al., 2009	Evaluation of the efficacy of an educational program for rheumatoid arthritis patients	The study found improvement in knowledge but not disease specific measures; authors suggest using strategies that increase social support (e.g. from relatives) and tailoring to patient's priorities to improve compliance.	Theoretical information was given with the help of visual aids as the majority of patients had <8 years schooling. Those with higher years of education scored higher on the knowledge assessment post intervention.
Macedo et al., 2009	Functional and Work Outcomes Improve in Patients With Rheumatoid Arthritis Who Receive Targeted, Comprehensive Occupational Therapy	Study conducted in employed RA patients at medium and high-risk of work disability. Individually-targeted, workplace-based occupational therapy with self-management components may be difficult for patients with inflexible jobs or limited employer support.	Implementation depends on occupational therapists trained in vocational rehabilitation and capacity for workplace visits.
Masiero et al., 2007	Effects of an educational–behavioral joint protection program on people with moderate to severe rheumatoid arthritis: a randomized controlled trial	Involving relatives in the self-management course was a further factor of motivational and behavioral support although there were not sufficient unaccompanied patients to demonstrate a difference in results.	nr
Mathieu et al.	Early occupational therapy programme increases hand grip strength at 3 months: results from a randomised, blind, controlled study in early rheumatoid arthritis	nr	nr
Núñez et al., 2006	Early occupational therapy programme increases hand grip strength at 3 months: results from a randomised, blind,	Providing both individual and group visits in the educational program facilitated attendance in study with participants >80% high school or less education and >65% blue collar occupation	nr

Author, year	Study / citation	Equity focused feasibility and/or acceptability considerations	Equity focused implementation considerations
	controlled study in early rheumatoid arthritis		
Pot-Vaucel et al.	Randomised study versus control group of customised therapeutic education for patients in follow-up for rheumatoid arthritis	individually customized therapeutic education program focused on solving problems specific to each participant; offered group workshops and individual sessions; barrier to attendance was travel time to hospital	nr
Riemsma et al., 2003	Group Education for Patients With Rheumatoid Arthritis and Their Partners	nr	Study assessed psychoeducational group program with participation of a significant other, expecting that the addtional social support would improve outcomes. The program showed limited beneficial effects at 1 year and participation of significant other led to decreases in self efficacy for coping and increased fatigue. Authors suggest that specific attention on family and marital relationships and reinforcement of adaptive coping skills with a strong behavioural component might change the results.
Saeedifar et al., 2018	Use of the Orem self-care model on pain relief in women with rheumatoid arthritis: a randomized trial	nr	nr
Scholten et al., 1999	Persistent Functional and Social Benefit 5 Years After a Multidisciplinary Arthritis Training Program	A multidisciplinary program goal was improving SES and included information about accessing social assistance from social workers. Improved awareness of social assistance and 10% of patients in intervention group acquired new jobs after accessing social aid. Improved social support outcomes - 73.6% stated contact with relatives and friends had improved significantly; The program was stated to be low cost but requires access to multidisciplinary care which may not be available in all settings.	nr
Shao et al., 2020	Feasibility and Acceptability of a Self-Management Program for Patients With Rheumatoid Arthritis	Study assessed feasibility and acceptability of self-management program in Chinese society in Taiwan. The intervention was delivered in home visits and by telephone. High recruitment (80%) and retention (100%) was attributed to flexibility of individuallized goal setting. Fear of scams led participants to refuse recruitment; building trust with patients can mitigate this concern.	nr
Shao et al., 2021	Effectiveness of a self-management program for joint protection and physical activity in patients with rheumatoid arthritis: A randomized controlled trial	RCT based on pilot of Shao 2020.Barriers to study participation included no phone, hearing problems, language barriers. The self-management program was provided in clinic, one-on-one with a nurse, allowing for individualized discussion, but authors note cost may be greater than group-based. Benefits not seen until 6 months - delayed benefits may be	Acknowledgement of patients' cultural characteristics allows nurses to implement the program on a personalized level, with the components of learning and skill-training individualized for each patient on a case-by case basis.

Author, year	Study / citation	Equity focused feasibility and/or acceptability considerations	Equity focused implementation considerations
		explained by the following. Gender (86% female) may have contributed to delayed intervention benefits, as women in some cultural contexts may be more passive in health decision-making, rely more on physicians for health management, and prioritize family health over their own, which may reduce self-management engagement and confidence. Most had less than high school education (85%) and no monthly income (55%) which also have contributed to poorer attitudes about health and self-efficacy. Chinese cultural influence of Buddihsm and Taoism (67%) may factor into results since these philosophies encourage belief that health is subject to will of God or fate, leading to fatalistic attitudes; religious attitudes prevent believing self management can be beneficial.	
Shigaki et al., 2013	RAHelp: An Online Intervention for Individuals With Rheumatoid Arthritis	Online and telephone-based delivery addresses barriers of travel due to functional limitations and difficulty of organizing and attending in-person group sessions. Feasibility depends on access to internet technology and comfort with computer use. Participants were early adopters of digital tools and had high level of education and income which can limit generalizability, though the positive effects demonstrate this type of delivery is acceptable to people who accept and are comfortable with or prefer receiving healh care online.	The online format reduces reliance on clinic-based resources and may be implemented with minimal health-system infrastructure though containing costs while integrating online services is a challenge.
Song et al., 2020	A randomized controlled trial of the Effects of a telehealth educational intervention on medication adherence and disease activity in rheumatoid arthritis patients	Telephone education addresses barriers of in person attendance for those working full time or living in remote/rural communities.Individually-tailored education as opposed to group is more likely to help patients change behaviour; medication adherence was statistically and clinically improved in education group. Intervention was acceptable to population of mostly female, married, primary education or less, in China.	Nurse-led telephone education was feasible to integrate into routine follow-up care
Yousefi et al., 2015	Epidemiological evaluation quality of life in patients suffering from early rheumatoid arthritis: a pragmatic, prospective, randomized, blind allocation controlled of a modular program group intervention	Group self management program was feasible in early RA in socioeconomically challenged communities in Iran	nr

Author, year	Study / citation	Equity focused feasibility and/or acceptability considerations	Equity focused implementation considerations
Zhao et al., 2019	Effectiveness of health education by telephone follow-up on self-efficacy among discharged patients with rheumatoid arthritis: A randomised control trial	Health education programme by telephone follow-up improves feasibility for patients with low-levels of education and large economic burden. It addresses transportation barriers and those living far from hospital services in China. Voice communication was used for delivery rather than written materials as 70% of participants had less than middle school education. Patients were excluded after recruitment due to language barriers and lack of phone equipment.	Telephone-based intervention can be incorporated into routine nursing workflows.

Additional equity-focused literature search results

Publication Year	Author	Title	Brief description of study	General RA Equity	Self-management
2020	Barnabe, Cheryl	Disparities in Rheumatoid Arthritis Care and Health Service Solutions to Equity.	Provides examples of described disparities in health services delivery, medication access, and quality of care considerations specific to RA care paradigms in the United States and Canada	• Age, sex, race and ethnicity, sex, socioeconomic status, and location of residence experience can lead to difficulties in accessing evidence-based RA treatment leading to worse outcomes. • Racial and ethnic minorities, including Indigenous populations, encounter systemic barriers, stereotyping, and reduced surgical access, contributing to disparities in disease management and outcomes. • Adherence to quality care indicators and patient experience in rheumatology care are important areas for research and action for resolving care gaps for populations at risk for inequities in rheumatoid arthritis outcomes. • Some facilitators are providing social service need screening, patient navigation, and housing supports, culturally safe environments, trauma-informed care, and increasing diversity among rheumatologists are vital to building trust and understanding with marginalized population. • Efforts should focus on redistributing resources, engaging communities, and tailoring interventions to specific population needs. Incorporating Indigenous values and community-based approaches into care frameworks can improve relevance and effectiveness	
2021	Barnabe, Cheryl; Pianarosa, Emilie; Hazlewood, Glen	Informing the GRADE evidence to decision process with health equity considerations: demonstration from the Canadian rheumatoid arthritis care context.	Reports on the incorporation of equity in the evidence to decision process and informs a research agenda for equity in rheumatology outcomes.	• Consider additional costs related to the intervention, acceptability of the intervention (including family and community input), health literacy, accessibility of healthcare providers	•in low SES/vulnerable housed people: medical and mental health comorbidities may impact health literacy for informed decision making. • in Indigenous peoples: consider how the recommendation may fit with co-use of traditional healing practices and lifestyles (e.g., hunting)
2009	Constantinescu, Floria; Goucher,	Racial disparities in treatment preferences for	To identify treatment preferences for aggressive therapy in patients with rheumatoid arthritis (RA) who	•fewer black patients(30%) preferred aggressive treatment compared with white patients (61%) with similar disease severity; results were lower in those	

	Suzanne; Weinstein, Arthur; Fraenkel, Liana	rheumatoid arthritis	identified themselves as being Black or White.	patients without a college education (3% vs 32%). •these results have important clinical implications because use of aggressive treatment improves both short- and long-term outcomes • consider improving patient education and provider communication	
2025	Desilet, Luke W.; Pedro, Sofia; Katz, Patricia; Michaud, Kaleb	Urban and Rural Patterns of Health Care Utilization Among People With Rheumatoid Arthritis and Osteoarthritis in a Large US Patient Registry.	Aimed to identify whether there is a relationship between where someone lives and health care utilization for people with arthritis	•urban residents with RA were more likely to report rheumatologist visits, but less likely to report primary care visits	
2015	Emery, Paul; Solem, Caitlyn; Majer, Istvan; Cappelleri, Joseph C.; Tarallo, Miriam	A European chart review study on early rheumatoid arthritis treatment patterns, clinical outcomes, and healthcare utilization.	This retrospective medical chart review aimed to provide a current, real-world overview of biologic usage in patients with rheumatoid arthritis (RA) in Germany, Spain, and the UK, and estimate clinical and healthcare utilization outcomes associated with early versus late treatment.[to 2010]		
2005	Garcia Popa-Lisseanu, Maria G.; Greisinger, Anthony; Richardson , Marsha; et al	Determinants of treatment adherence in ethnically diverse, economically disadvantaged patients with rheumatic disease.	Participant attitudes and beliefs about adherence to treatment and medical appointments	• barriers to treatment adherence include: fear of side effects, financial problems, difficulty in navigating the public health system, perceived treatment inefficacy, and appointment keeping, including difficulties in scheduling, financial costs, transportation, and functional impairment limiting their ability to attend the clinic.	
2014	Guillemin, Francis; Carruthers, Erin; Li, Linda C.	Determinants of MSK health and disability--social determinants of inequities in MSK health.	To review concepts and health equity-associated determinants and the effect of interventions	• Place of residence can be a barrier to accessing effective treatment	•A major challenge is that interventions with good evidence of effectiveness are most likely to benefit those who are more amenable to follow them (i.e. less exposed to disadvantage, since they are of higher SES , education, and wealth). •much effort

					should be placed on sustaining interventions targeting those most in need, which means specific design, recruitment, and attention. •knowledge about RA is an essential component of patient self-management, but for people with a language barrier, their ability to access appropriate information and resources is severely limited. • interviews with UK immigrants from India found that having a trained patient volunteer providing language appropriate peer support and education was essential for patients accessing information.. •a review of MSK education interventions delivered in public health, community, or rheumatology clinics found educational programs delivered to people with low literacy level had a small effect on self-efficacy, and high quality evidence was lacking.
2025	Liu Xiaoxic	Informing equitable access to care: a cross-sectional study of travel burden to primary and rheumatology care for people with rheumatoid arthritis.	To measure travel time from patients to providers for GP and rheumatologists in Alberta	- Remote patients experienced the longest travel time to rheumatology care but the shortest median travel time to GP care. - In remote areas, travel time had less of an impact on healthcare utilization compared to other rural-urban areas - Solutions to address the gap between demands for care and rheumatology workforce shortages include: utilizing other health care providers (e.g. nurse practitioners, pharmacists), collaborative care, and expanding use of telemedicine and digital health technology	
2018	Nagarag Sujay; Barnabe,	Early rheumatoid arthritis presentation,	Compared early rheumatoid arthritis (RA) presentation, treatment, and outcomes between Aboriginal and	Socioeconomic and demographic factors associated with worse prognosis (current smoking, higher BMI, lower education, and lower income) were more frequently present in Aboriginal patients	

	Cheryl; et al.	treatment, and outcomes in Aboriginal Patients in Canada: A Canadian early arthritis cohort study analysis	white patients in a large Canadian cohort study.		
2022	Penabad, I	The Prism of Inequity: Health Disparities in Rheumatoid Arthritis	essay/review of equity considerations in JIA/RA	•Study highlights the negative effect that low SES has on disease outcome even when access to medical care is similar. •This strongly suggests that the stress of financial uncertainty can have a biological effect that dampens the efficacy of treatments. •Cultural and racial differences have also proven to play a significant role in the type of care that is pursued and received for management of RA •Treatment preferences stems from difficulty identifying with healthcare providers; need time to develop trust in their recommendations.	
2021	Pianarosa, Emilie; Hazlewood, Glen S.; Thomas, Megan; Hsiao, Ralph; Barnabe, Cheryl	Supporting Equity in Rheumatoid Arthritis Outcomes in Canada: Population-specific Factors in Patient-centered Care.	Semistructured interviews were completed with patients with lived experience, healthcare providers, and equity-oriented researchers to identify the challenges and possible solutions to mitigate threats to health equity in rheumatoid arthritis (RA) care in Canada	Five themes emerged as primary solutions to population-based inequities: •Improve patient–practitioner relationships through respectful, person-centred communication and trust-building. •Increase accessibility and coordination of care using alternative and more flexible models of care. •Support patient autonomy in treatment decisions while addressing logistical barriers and individual therapy needs. •Collaborate with healthcare and community supports that are valued and trusted by patients. •Advocate for policy change and health system restructuring to improve equity and ensure fair distribution of resources. SEE ADDITIONAL FIGURES/TABLES AT END OF DOCUMENT	
2017	Taylor-Gjevre, Regina; Nair, Bindu; Bath, Brenna; et al	Addressing rural and remote access disparities for patients with inflammatory arthritis through video-conferecing and innovative inter-	The aim of the present study was to evaluate whether rheumatoid arthritis (RA) patients followed longitudinally using video-conferencing and inter-professional care support have comparable disease control to those followed in traditional in-person rheumatology clinics.	• Geographic location influenced access to care for people with RA in Northern Saskatchewan, with barriers including transportation challenges, road conditions, and environmental factors. • Video-conferencing provided similar effectiveness to traditional in-person clinics for ongoing RA follow-up care, and patient satisfaction was not lower with virtual care. • Preferences for care delivery varied: some patients valued travelling to urban centres for errands, appointments, or visiting family, while others	

		professional care models.		preferred staying closer to home to avoid travel, time away from work, or family disruption. •Technical issues occasionally affected video visits, and participant dropout was common, suggesting feasibility and acceptability challenges for some individuals. • Models of care should be designed in consultation with patients and tailored to individual preferences and needs, recognizing that virtual care may improve access for some while reducing valued benefits associated with travel for others.	
2023	Thomas, Megan; Harrison, Mark; De Vera, Mary A.	Reporting of Determinants of Health Inequities in Rheumatoid Arthritis Randomized Controlled Trials in Canada: A Scoping Review.	We reviewed and synthesized randomized controlled trials (RCTs) for rheumatoid arthritis (RA) in Canada with the aim of characterizing participants and identifying how determinants of health inequities are reported.	• Among PROGRESS-Plus factors, sex and age were the most commonly reported, while race, education, SES were reported less frequently. • Participants in RCTs were predominantly: • Middle-aged • Female • White • Most RCTs did not routinely report determinants of health inequities or equity-relevant participant characteristics. • limited representation of diverse populations in trial participation, raising concerns about equity and generalizability. • Future research should improve reporting of equity-relevant factors and establish standardized reporting of PROGRESS-Plus characteristics in RCTs.	
2024	Wiens, Dana; Smolik, Irene A.; MacKay, Dylan; Fowler-Woods, Amanda; Robinson, David B.; Barnabe, Cheryl; El-Gabalawy, Hani S.; O'Neil, Liam J.	Perceived Access to Healthcare of Indigenous Peoples in Canada With Rheumatoid Arthritis and Their First-Degree Relatives.	Used a RA cohort of First Nations people to explore the factors that underlie inequities for Canada's geographically dispersed Indigenous peoples to address concerns with healthcare access	•Predictors of poorer access to care among people with rheumatoid arthritis (RA) included: -Female sex -Older age -Living in remote communities •Despite these barriers, access to care for people living in remote communities appears to have improved over time. •Access to timely care in remote communities is affected by several structural barriers, including: -Difficulty recruiting and retaining primary care providers (PCPs), leading to chronic shortages -Long travel distances to care -Weather-related barriers -Transportation challenges •Suggested approaches to reduce inequities in access to care include: -Increasing access to midwives and other local healthcare providers	

				-Creating healthcare spaces that are culturally safe and tailored to Indigenous peoples -Acknowledging and addressing the effects of colonialism on healthcare access and experiences •Gender roles and traditional masculine norms may discourage men from seeking healthcare and contribute to poorer access. •Male individuals with RA were more likely to report poor access to care than male individuals without RA, which may reflect lower healthcare use among men until chronic illness increases the need for care. •Further research is needed to better understand gender roles and help-seeking behaviours among First Nations men and how these influence access to care.	

ADDITIONAL TABLES/FIGURES

Figure 1. Summary of findings table created from data in Wu 2022. Self-management compared to usual care, waiting list or conventional treatment for rheumatoid arthritis

Patient or population: patients with rheumatoid arthritis
Settings: primary care, outpatient, community
Intervention: patient education / self-management education
Comparison: usual care, waiting list, or conventional treatment

Outcomes	Relative effect (95% CI)	No. of participants (studies)	Quality of evidence (GRADE)	Comments
Pain[a]	SMD −0.37 (−0.80 to 0.05)	1,160 (12 studies)	⨁⨁⨁◯ Moderate	No clear improvement
Physical function[a]	SMD −0.52 (−0.96 to −0.08)	1,641 (15 studies)	⨁⨁⨁◯ Moderate	Improved physical function
Disease activity[a]	SMD −1.97 (−3.24 to −0.71)	838 (8 studies)	⨁⨁⨁◯ Moderate	Improved disease activity
Anxiety[d]	SMD 0.17 (−0.64 to 0.98)	443 (5 studies)	⨁⨁◯◯ Low	No clear improvement
Depression[a]	SMD −0.18 (−0.52 to 0.15)	700 (8 studies)	⨁⨁⨁◯ Moderate	No clear improvement
ASE (pain)[ab]	SMD −1.24 (−2.05 to −0.43)	675 (7 studies)	⨁⨁◯◯ Low	Improved self-efficacy for pain management
ASE (other symptoms)[ab]	SMD −0.25 (−0.41 to −0.09)	599 (6 studies)	⨁⨁◯◯ Low	Small improvement
ASE (total)[abd]	SMD −0.67 (−1.30 to −0.05)	487 (4 studies)	⨁◯◯◯ Very low	Possible improvement; certainty very low
General health[bd]	SMD −1.11 (−1.36 to −0.86)	340 (4 studies)	⨁⨁◯◯ Low	Improved general health

Footnotes for GRADE downgrading

a. Downgraded one level for inconsistency (serious inconsistency).

b. Downgraded one level for risk of bias (serious risk of bias).

c. Downgraded two levels for very serious imprecision.

d. Downgraded one level for imprecision (serious imprecision).

[Downgrading reasons follow Table 3 of Wu et al. (2022).]

Fig 2 Solutions and approaches for supporting equity in RA care

from E Pianarosa et al. Supporting Equity in Rheumatoid Arthritis Outcomes in Canada: Population-specific Factors in Patient-centered Care. The Journal of Rheumatology 2021;48:1793–802. doi:10.3899/jrheum.210016

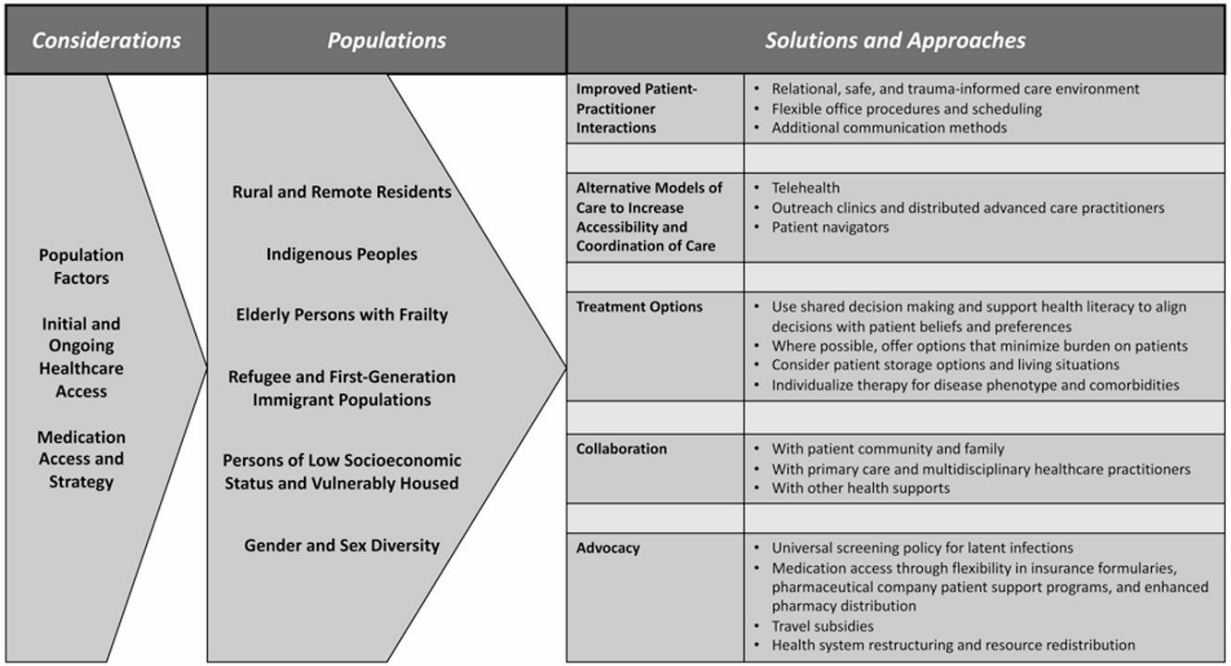

Figure 1. Solutions and approaches supporting equity in rheumatoid arthritis care.

Table 1. Factors contributing to inequities in RA care for rural and remote populations and proposed mitigation approaches through guideline recommendations and implementation.

	Contributors to Inequity	Mitigation Approaches
Population factors	No data to suggest differences in goals of treatment, patient beliefs, and preferences, or efficacy differences	Support individualized therapy decisions related to a perception of more severe disease and increased frequency of comorbidities
Initial and ongoing healthcare access	• Delays to secure a rheumatology consultation, travel distances, and socioeconomic considerations affect access to specialty care • Primary care providers in a community may be itinerant	• Propose alternative models of care for treatment initiation and monitoring • Reinforce enhanced collaboration with primary care for co-management • Coordinate care with other specialists the patient accesses and promote rheumatologist flexibility for patient visits • Providers should investigate and advocate for travel subsidies for patient travel
	Reduced allied health resources	Propose alternative modes of care delivery (e.g., telephysio)
	Baseline testing and monitoring	• Recommend required tests are completed prior to rheumatologist assessment to ensure treatment can begin immediately when indicated • Recommend therapies and monitoring regimens that minimize testing frequency or specialized monitoring needs when possible
Medication access and strategy	Variable pharmacy supply and dispensation limits could result in discontinuous access	Rheumatologist to be proactive in building relationships with local pharmacies, offering patient support programs including sampling, and advocating for approval of larger dispensation quantities
	Storage concerns (e.g., power supply) and transportation could result in disruption of the cold chain for injection medications	• Recommendation may preferentially suggest shelf-stable medications • Rheumatologist encouraged to help patient navigate primary health supports for medication storage and pharmacy delivery programs
	Intravenous and intraarticular therapies may be difficult to administer in rural/remote locations	• Recommendation may preferentially suggest selection of therapy, minimizing need for provider intervention • Use of intramuscular bridging instead of intraarticular injections if needed • Collaborative care with primary care providers to minimize use of prednisone

Table 2. Factors contributing to inequities in RA care for Indigenous populations and proposed mitigation approaches through guideline recommendations and implementation.

	Contributors to Inequity	Mitigation Approaches
Population factors	Health systems do not resource a holistic approach to health nor incorporate traditional medicine in treatment plans	Engage with health supports beyond biomedical providers and collaborate with the cultural health system
	Worse prognosis and refractory disease, including increased frequency of extraarticular manifestations and comorbidities	Support individualized therapy decisions. Incorporate shared decision-making approaches to support need for aggressive therapy, including collaboration with primary care to provide wraparound supports
	Younger disease onset has implications for childbearing potential	Offer medication options that are safe in pregnancy
	Increased risk of TB reactivation with certain pharmacotherapies	• Offer medication options associated with reduced TB reactivation • Engage public health supports for screening and treatment of latent TB
Initial and ongoing healthcare access	• Low trust in the healthcare system due to provider bias, structural racism, and past experiences of racism in the healthcare system • Stigma of "high-risk patient" often assigned to Indigenous patients, which perpetuates feelings of bias and racism	• Promote a safe care environment by educating providers, engaging health navigators in the care team, and building trust and rapport with the patient • Delay preliminary testing until the provider can communicate reasons for testing with patients • Rheumatologist encouraged to advocate for universal latent infection screening policy
	Social and clinical complexity	• Advocate for resource redistribution to address inequities in social determinants of health • Coordinate care with multidisciplinary care teams that engage health navigators, primary care, and social agencies • Specialist should have extensive knowledge of local resources and offer longer appointment times to review all aspects of the patient's health
	Difficulties achieving frequent reassessment of disease activity or monitoring tests due to long travel distance to see rheumatologist	• Build rapport with primary care: empower local primary care to begin initial treatment, and co-manage the patient • Offer alternative models of care • Promote rheumatologist flexibility for patient visits
	Personal identification needed for testing	Engage health navigators and social resources team to acquire necessary documentation
	Socioeconomic considerations affecting access to care	• Health system restructuring and/or utilization of alternative models of care to increase provider availability and accessibility • Embed specialty care in the medical home
	Difficulties with health system navigation (to primary care, to specialty care)	• Engage health navigators or community support workers with government program knowledge • Use different modes of communication if traditional appointment notification systems are a barrier to accessing care
Medication access and strategy	Storage concerns (e.g., power supply, shared living environments and homelessness) and transportation could result in disruption of the cold chain for injection medications	• Recommendation may preferentially suggest shelf-stable medications • Rheumatologist encouraged to help patient navigate primary health supports for medication storage and pharmacy delivery programs
	Variable pharmacy supplies, insurers limiting supply	• Rheumatologist encouraged to build a strong relationship and

Table 3. Factors contributing to inequities in RA care for elderly persons with frailty and proposed mitigation approaches through guideline recommendations and implementation.

	Contributors to Inequity	Mitigation Approaches
Population factors	Short life expectancy informs individualized outcome goals	• Document and communicate an integrated care plan and goals of care • Use shared decision-making approaches to reinforce patient-centered care • Assess treatment burden relative to benefit and use conservative approaches
	Exclusion from clinical trials results in paucity of outcome data	Support reasonable use of therapy given lack of data
	Side effects vary based on comorbidities, polypharmacy, cognitive impairment, and degree of frailty	• Individualize treatment approach with safe and appropriate medication • Deprescribe and minimize medication to increase adherence and reduce side effects • Include family and healthcare proxies in care plan
Initial and ongoing healthcare access	Barriers in accessible transportation	• Propose alternative models of care including telehealth and telephone consultations • Engage community organizations or services for patient transportation • Include family and support networks but be mindful of not creating extra burden • Minimize testing or use mobile laboratories where available
	Multimorbidity, complex medical history, and cognitive decline affect continuity of care	• Use collaborative multidisciplinary team-based care with strong communication protocols and information systems • Form a strong alliance with primary care and geriatrics • Engage family and support networks
Medication access and strategy	• Treatment strategy should be aligned with patient outcome goals • Necessary to avoid or minimize medications associated with adverse events (e.g., steroids or NSAIDs)	• Promote shared decision-making approaches • Use a conservative approach to pharmacotherapy • Select safe alternatives or nonpharmacotherapy where possible
	Administration preferences may vary based on the cognitive abilities of the patient and the availability of their supports	Understand the patient's available supports (family, home care, paramedic program) for medication administration
	Insurance may vary once the patient is considered a senior	Advocacy to ensure medication coverage for seniors

Table 4. Factors contributing to inequities in RA care for refugees and first-generation immigrants, and proposed mitigation approaches through guideline recommendations and implementation.

	Contributors to Inequity	Mitigation Approaches
Population factors	Varying goals of treatment based on previous socioeconomic status and reason for immigration	• Shared decision-making approaches • Employ relationship-building skills and provide trauma-informed care to build rapport with the patient
	• Different sociocultural approaches to healthcare • Patients risk having poor self-advocacy and difficulties communicating their preferences	• Shared decision-making approaches • Rheumatologist encouraged to improve communication skills and build rapport with the patient • Engage health navigators and community support workers in the care team
	Variations in disease phenotype, comorbidities between populations, treatment effect, and tolerability by race or ethnicity	Individualize therapy approach to meet patient needs
Initial and ongoing healthcare access	Difficulties navigating the healthcare system and appointment notification systems incompatible with patients' technological skills may affect reoccurring care	• Use different modes of communication as needed by the patient • Use health navigators or community support workers with government program knowledge • Engage family members in the care team
	Socioeconomic considerations	Advocate for health system restructuring to increase provider availability and accessibility
	Stigma and bias of "high-risk patient"	Rheumatologists encouraged to advocate for a policy change to universal screening
Medication access and strategy	Variable coverage for refugees	• Engage with health navigators and multidisciplinary care teams • Compassionate coverage policies
	Variable transfer of prior medication exposure history may force the patient to retry ineffective pharmacotherapies	• Rheumatologist encouraged to advocate variances in medication order with formulary companies
	Storage and accessibility concerns for prolonged travel to home country could result in disruption of the cold chain for injection medications	• Recommendation may preferentially suggest shelf-stable medications • Rheumatologist encouraged to help patient navigate support programs to access additional supply for prolonged travel
	Low initial trust in the healthcare system, and rapid loss of trust when side effects or adverse events occur, may affect adherence and loss to follow-up	• Use a health navigator or broker for effective communication • Encourage increasing provider accessibility to build trust and rapport with the patient

Table 5. Factors contributing to inequities in RA care for persons of low socioeconomic status and vulnerably housed and proposed mitigation approaches through guideline recommendations and implementation.

	Contributors to Inequity	Mitigation Approaches
Population factors	Past or current intravenous drug use or substance abuse may alter administration feasibility and patient preferences	Offer medications with minimized infection risk
	Increased frequency of mental health conditions, history of trauma, or substance abuse	• Engage multidisciplinary teams in patient care with strong coordination strategy • Promote a safe and trauma-informed care environment
	Poor health literacy	• Use appropriate communication tools to engage with the patient • Use health navigators in the care team
Initial and ongoing healthcare access	Socioeconomic considerations	• Advocacy for health system restructuring and alternative models of care to increase provider availability and accessibility • Embed specialty care in the medical home
	Social and clinical complexity affects patient monitoring and coordination of care	• Ally with health navigators, social agencies, and primary care provider knowledgeable of local resources • Engage with multidisciplinary care teams and case conferencing between providers • Increase appointment duration
	Difficulties navigating the healthcare system and appointment notification systems that are incompatible with patients' technological realities may affect reoccurring care	• Use different modes of communication as needed by the patient • Use health navigators or community support workers with government program knowledge
Medication access and strategy	Prioritizing cost-effective approaches	• Offer more first-line therapies to increase adherence • Use sampling programs; pharmaceutical companies should subsidize necessary medications and have compassionate coverage policies
	Storage concerns (e.g., power supply, refrigeration access, shared living environments, homelessness) could result in disruption of the cold chain for injection medications	• Recommendation may preferentially suggest shelf-stable medications • Rheumatologist encouraged to help patient navigate primary health supports for medication storage and pharmacy delivery programs or seek out alliances with shelters, community programs, and pharmacies for storage
	Low initial trust in the healthcare system, and rapid loss of trust when side effects or adverse events occur, which may affect adherence and loss to follow-up	• Use a health navigator or broker for effective communication • Improve provider accessibility to build trust and rapport with the patient

Equity-informed implementation recommendations for self-management education in rheumatoid arthritis

- **Offer flexible, multimodal delivery models:** telephone, home-based, online, individual, group, or mixed formats) may reduce participation barriers related to mobility limitations, transportation, caregiving responsibilities, work schedules, and rural or remote residence. . Telephone, home-visit, and online approaches improved feasibility for people facing transportation, work, distance, or functional barriers, while combined individual/group approaches facilitated attendance. Acknowledge that over-reliance on digital platforms may exclude some populations.
- **Address socioeconomic barriers to participation:** Ensure programs are affordable, minimise out-of-pocket costs, and are integrated with health-system supports that facilitate access to medications, allied health services, and follow-up care, particularly for people with limited insurance coverage or financial resources.
- **Tailor the format and intensity of self-management education** to individual needs, functional status, readiness, and social circumstances rather than using a uniform approach. Participants with better function sometimes perceived intensive programs as unnecessary, while those at greater risk of disability or social disadvantage may benefit from more individualized or intensive occupational therapy or self-management support.
- **Adapt educational strategies to literacy, language, and educational level**. Written leaflets alone may not suit all patients, comprehension and engagement may vary, visual aids may support people with lower education, and voice-based communication may be preferable when literacy is limited. Studies also noted exclusions related to language barriers and low reading levels, highlighting the need for more inclusive delivery approaches
- **Use individualized goal setting and personalized education to improve acceptability and engagement.** Programs that incorporated tailored goals, individualized discussion, problem-solving, or customized content reported high recruitment, retention, or acceptability, particularly when adapted to participants' priorities and circumstances.
- **Reduce practical barriers to participation by minimizing travel burden, scheduling demands, and attendance obstacles.** Travel distance, transportation costs, family or professional obligations, caregiving responsibilities, time away from work, and inflexible attendance requirements reduced feasibility for some patients and may require alternative or lower-burden models of delivery.

- **Incorporate trusted social supports where appropriate, while tailoring involvement to patient needs.** Studies suggested that involving relatives, partners, or significant others may improve motivation, coping, social support, and compliance for some patients, although effects were mixed and may require attention to coping skills and family dynamics.
- **Ensure cultural and contextual relevance:** Adapt content and delivery to be culturally appropriate and responsive to local contexts, including language needs, community norms, and experiences of discrimination, with meaningful engagement of Indigenous Peoples and other groups experiencing inequities where relevant.
- **Consider integrating self-management support into routine care pathways, including nurse-led or telephone follow-up models.** Several studies suggested self-management education could be embedded within routine care, chronic care models, or nursing workflows to improve feasibility and continuity of support.
- **Ensure workforce and resource requirements are considered when selecting delivery models.** One-to-one, workplace-based, or individualized occupational therapy approaches may improve tailoring but can be labour-intensive, more expensive, and dependent on access to trained staff (e.g., occupational therapists, vocational rehabilitation expertise, workplace visits). Group or lay-led approaches may offer more practical alternatives in some settings.
- **Build trust and culturally responsive relationships to support participation and engagement.** Fear of scams, cultural beliefs about illness or self-management, and reliance on physicians or family roles influenced participation and engagement in some populations, suggesting programs may benefit from trust-building and culturally responsive tailoring.
- **When using digital or telehealth delivery, provide support for technology access and usability.** Online and telephone-based models may improve access and reduce reliance on clinic-based resources, but feasibility depends on access to phones or internet, hearing ability, comfort with technology, and language accessibility.
- **Recognize that intervention effects and acceptability may differ across populations and contexts, and tailor implementation accordingly.** Studies highlighted differences related to sex/gender, education, income, occupation, cultural context, and socioeconomic disadvantage, supporting case-by-case adaptation rather than a one-size-fits-all approach.
- **Design programs to minimise intervention-generated inequities:** Proactively plan implementation strategies that reach populations under-represented in trials, including individuals with low socioeconomic status, limited formal education, racialised or Indigenous communities, and those with unstable housing or limited social support.

Gaps and future directions

Overall, the evidence base demonstrates frequent measurement of some equity-relevant characteristics at baseline but an absence of analytic or inferential use of these data. This limits the ability to assess for differential effects to determine whether self-management and educational interventions for rheumatoid arthritis reduce, exacerbate, or have neutral effects on existing health inequities. Future trials should pre-specify equity-relevant hypotheses, ensure consistent measurement of PROGRESS-Plus domains, and conduct pre-specified subgroup analyses where appropriate. Explicit consideration of feasibility and applicability for populations experiencing inequities should be integrated into intervention design, analysis, and reporting to better inform equitable implementation. Greater attention is needed to populations facing barriers related to socioeconomic disadvantage, low literacy, language barriers, rural or remote residence, disability, caregiving responsibilities, and cultural beliefs that may influence participation, engagement, and outcomes. Priority areas include evaluating self-management models that integrate both exercise and psychological components, and developing and testing individualized, adaptive approaches that are tailored to patient needs, preferences, and contexts.

References

England BR et al. 2022 American College of Rheumatology Guideline for Exercise, Rehabilitation, Diet, and Additional Integrative Interventions for Rheumatoid Arthritis. Arthritis Care & Research. Vol. 75, No. 8, August 2023, pp 1603–1615. DOI 10.1002/acr.25117

Nikiphorou E, et al. 2021 EULAR recommendations for the implementation of self-management strategies in patients with inflammatory arthritis. Ann Rheum Dis 2021;80:1278–1285. doi:10.1136/annrheumdis-2021-220249

Pianarosa E, Hazlewood G, Thomas M, Hsiao R, Barnabe C. Supporting Equity in Rheumatoid Arthritis Outcomes in Canada: Population-specific Factors in Patient-centered Care. The Journal of Rheumatology May 2021, jrheum.210016; DOI: 10.3899/jrheum.210016

Wu Z, Zhu Y, Wang Y, et al. The Effects of Patient Education on Psychological Status and Clinical Outcomes in Rheumatoid Arthritis: A Systematic Review and Meta-Analysis. 2022. Front. Psychiatry 13:848427. doi: 10.3389/fpsyt.2022.84842