Methods: We extracted data on all patients identified in the WA Hospital Morbidity Data Collection between 1995 and 2014, with the International Classification of Diseases (ICD) codes for RA (ICD 10 M05.00–M06.99, and the corresponding ICD 9 codes). We estimated period prevalence rates per 1000 hospital separations and annual average percentage changes, with the total number of hospital separations each year.

Results: A total of 17,125 patients were admitted to WA hospitals with a diagnostic code for RA over the study period (1995–2014). The total number of hospital separations for RA patients was 50,353, indicating an average of three hospital separations per patient over twenty years. The RA prevalence was 3.4 per 1000 separations over the study period, with a -2.89% annual average decrease since 1995.

Conclusion: These data demonstrate that hospitalisation for RA has decreased considerably in WA over the last two decades. As this decrease roughly coincides with the introduction of biological drug treatment for RA, the reduced need for hospital admission is likely due to improvements in RA management.

REFERENCES:

- [1] Uhlig T, Moe RH, Kvien TK (2014) The burden of disease in rheumatoid arthritis. *Pharmacoeconomics* 32:841–851. doi:10.1007/s40273-014-0174-6

Table1: Hospitalisation for rheumatoid arthritis (RA) in Western Australia (WA) (1995–2014).

Year	Total RA hospital separations	WA hospital separations	RA per 1000 separations	Average annual change per annum (RA hospital separations)	Average annual change per annum (WA hospital separations)
1995	3,518	451,195	7.8	0%	0%
1996	3,751	473,677	7.9	7%	5%
1997	3,994	506,721	7.9	6%	7%
1998	3,927	544,566	7.2	-2%	7%
1999	2,785	575,489	4.8	-29%	6%
2000	1,755	612,774	2.9	-37%	6%
2001	1,577	617,891	2.6	-10%	1%
2002	1,685	648,423	2.6	7%	5%
2003	1,908	657,439	2.9	13%	1%
2004	1,836	691,975	2.7	-4%	5%
2005	2,045	714,353	2.9	11%	3%
2006	2,215	740,059	3.0	8%	4%
2007	2,282	783,620	2.9	3%	6%
2008	2,184	829,595	2.6	-4%	6%
2009	2,682	887,209	3.0	23%	7%
2010	2,627	966,033	2.7	-2%	9%
2011	2,597	1,024,462	2.5	-1%	6%
2012	2,689	1,058,751	2.5	4%	3%
2013	2,281	1,070,399	2.1	-15%	1%
2014	2,015	1,081,463	1.9	-12%	1%
Total RA hospital separations	50,353				
Total WA hospital separations		14,936,094			
RA Period prevalence per 1000 separations (1995–2014)		3.4			
Average annual change since 1995				-2.89%	4.71%

Acknowledgements: Khalid Almutairi was supported by an Australian Government Research Training Program PhD Scholarship at the University of Western Australia.

Disclosure of Interests: Khalid Almutairi: None declared, Johannes Nossent Speakers bureau: Janssen, David Preen: None declared, Helen Keen Speakers bureau: Pfizer Australia, Abbvie Australia, Charles Inderjeeth Speakers bureau: Eli Lilly

DOI: 10.1136/annrheumdis-2021-eular.339

POS0298

UNDERSERVED POPULATIONS IDENTIFY BARRIERS AND PROPOSE SOLUTIONS FOR SELF-MANAGING ARTHRITIS AND CHRONIC CONDITIONS

S. Mills¹, K. Khehra², P. Ghuman², D. Au³, C. L. Koehn⁴, R. Maynard⁵, N. Clark^{6,7}, C. Davis⁸, A. Cui⁹, C. B. Hamilton^{2,10}, D. Lacaille^{2,10}. ¹University of British Columbia, Department of Medicine, School of Population and Public Health, Vancouver, Canada; ²University of British Columbia, Department of Medicine, Faculty of Medicine, Vancouver, Canada; ³MOSAIC (Multi-lingual Orientation Service Association for Immigrant Communities), Vancouver, Canada; ⁴Arthritis Consumer Experts, Vancouver, Canada; ⁵Portland Hotel Society Community Services Society, Vancouver, Canada; ⁶University of Victoria, School of Nursing, Victoria, Canada; ⁷University of British Columbia, Centre for Migration Studies, Vancouver, Canada; ⁸Centre for Collaboration, Motivation and Innovation, Vernon, Canada; ⁹University of British Columbia, Vancouver, Canada; ¹⁰Arthritis Research Canada, Vancouver, Canada

Background: Underserved populations, such as ethnic minorities, low-income adults, and Indigenous people living with arthritis are more likely to have lower health literacy, higher rates of multi-morbidity, and face challenges in accessing care¹⁻³. Self-management support (SMS) can help to mitigate the impacts of living with arthritis⁴. However, we require a more in-depth understanding of the daily barriers underserved communities face in living with arthritis in order to develop effective SMS that can meaningfully improve well-being and quality of life.

Objectives: The study objective was to bring together underserved people living with arthritis to identify common barriers they face in taking care of their conditions in daily life, and to identify their solutions to the identified challenges.

Methods: A team of researchers from several universities, nurse practitioners, physicians, policy makers, an arthritis consumer-patient leader and our

community partners (Multi-lingual Orientation Service Association for Immigrant Communities and the Portland Hotel Society Community Services Society) engaged in a Community-based Participatory and Concept Mapping (CM) study⁵⁻⁷ where participants from underserved communities identified major barriers they face in managing arthritis, agreed on key themes that emerged, and determined priorities for actions. This involved three key CM activities: 1) brainstorming ideas; 2) sorting and rating ideas; and 3) analyzing and interpreting concept maps⁸. Data was collected through face-to-face interviews and prioritized and interpreted in workshop settings.

Results: Sixty-three individuals who were ethnic minorities, immigrants, refugees, low-income, over 65, and/or housing insecure and living with arthritis identified 35 common barriers and made recommendations in the areas of financial difficulties, social services, access to health services, quality of health services, lack of knowledge, and mental health. Additional funding has been sought through Community-University Engagement Support Funding to enable our community partners to prioritize the recommendations in their communities, and to develop mechanisms for implementation using already existing community structures, processes, and services.

Conclusion: Persons living with arthritis in diverse underserved communities face significant health and social inequities, including lack of access to basic life necessities such as food, housing, employment, and safety, which creates barriers to self-managing arthritis and other chronic conditions in daily life. SMS for these communities needs to address these social and environmental barriers shaping capacity for self-management, and ultimately, quality of life and well-being.

REFERENCES:

- [1] Ackerman I, Busija L. Access to self-management education, conservative treatment and surgery for arthritis according to socioeconomic status. *Best Pr Res Clin Rheumatol*. 2012;26(5):561–83.
- [2] Shadmi E. Multimorbidity and equity in health. *Int J Equity Heal*. 2013;12(59):59.
- [3] Foster M, Kendall E, Dickson P, Chaboyer W, Hunter B, Gee T. Participation and chronic disease self-management: are we risking inequitable resource allocation? *Aust J Prim Health*. 2003;9(3):132–40.
- [4] Brady T, Anderson L, Kobau R. Chronic disease self-management support: public health perspectives. *Front Public Heal*. 2015;2(234).
- [5] Trochim W. An introduction to concept mapping for planning and evaluation. *Eval Progr Plann*. 1989;12(1):1–16.
- [6] Anderson L, Day K, Vandenberg A. Using a concept map as a tool for strategic planning: the healthy brain initiative. *Prev Chronic Dis*. 2011;8(5):A117.
- [7] Petrucci C, Quinlan K. Bridging the research practice gap: concept mapping as a mixed methods strategy in practice-based research and evaluation. *J Soc Serv Res*. 2007;34(2):25–42.
- [8] Kane M, Trochim W. Concept mapping for planning and evaluation. Thousand Oaks (CA): SAGE Publications; 2007.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2211

POS0299

SOCIOECONOMIC BACKGROUND IS ASSOCIATED WITH DISCORDANCE BETWEEN HEALTH LITERACY OF PEOPLE WITH RMDs AND ASSESSMENT OF HEALTH LITERACY BY THEIR TREATING HEALTH PROFESSIONAL

M. M. Bakker^{1,2}, C. Dikovec¹, P. Putrik^{1,2}, J. Rademakers^{2,3}, M. Van de Laar⁴, H. Vonkeman^{4,5}, M. R. Kok⁶, H. Voorneveld⁶, S. Ramiro^{7,8}, M. De Wit⁹, R. Buchbinder^{10,11}, R. Batterham^{12,13}, R. Osborne¹², A. Boonen^{1,2}. ¹Maastricht University Medical Centre, Internal Medicine, Rheumatology Division, Maastricht, Netherlands; ²Maastricht University, CAPRI - Care and Public Health Research Institute, Maastricht, Netherlands; ³Nivel - Netherlands Institute for Health Services Research, -, Utrecht, Netherlands; ⁴University of Twente, Psychology, Health and Technology, Enschede, Netherlands; ⁵Medisch Spectrum Twente, Arthritis Center Twente - Rheumatology and Clinical Immunology, Enschede, Netherlands; ⁶Maasstad Hospital, Rheumatology and Clinical Immunology, Rotterdam, Netherlands; ⁷Leiden University Medical Centre, Rheumatology, Leiden, Netherlands; ⁸Zuyderland Medical Centre, Rheumatology, Heerlen, Netherlands; ⁹Tools2Use Patient Association, -, Amsterdam, Netherlands; ¹⁰Monash University, School of Public Health and Preventive Medicine, Melbourne, Australia; ¹¹Cabrini Institute, Monash Clinical Epidemiology, Melbourne, Australia; ¹²Swinburne University of Technology, Centre for Global Health and Equity, Melbourne, Australia; ¹³Thammasat University, Faculty of Public Health, Bangkok, Thailand

Background: Health literacy is increasingly recognised as a critical determinant of health. While care should be tailored to the health literacy needs of each patient [1], research in primary care shows that physicians often under- or over-estimate their patients' health literacy, with socioeconomic factors playing a role [2]. Evidence in a rheumatology setting is scarce.

Objectives: -To investigate discordance between health literacy of patients with rheumatic and musculoskeletal diseases (RMDs) and assessment by their treating health professional, across the nine domains of the Health Literacy Questionnaire (HLQ).

-To explore whether discordance is associated with the patient's socioeconomic background.

Methods: Patients with rheumatoid arthritis (RA), spondyloarthritis (SpA), or gout from three Dutch outpatient rheumatology clinics completed the HLQ [3]. The treating health professional (rheumatologist, physician assistant, nurse (practitioner) or resident) assessed their patient's level for each HLQ domain, or answered "I don't know". Discordance per domain was calculated as the patient's score subtracted from the professional's score (both on a 0-10 scale). Discordance was defined as a ≥ 2 -point difference in either direction. Adjusted multilevel multinomial regression models (ref. = no discordance) with patients clustered by health professionals were computed to test the role of socioeconomic factors (age, gender, education level, immigration background, living alone and employment status) in negative (i.e. professional scored lower) and positive (i.e. professional scored higher) discordance.

Results: Of 778 patients included, 41% had RA, 34% had SpA, and 25% had gout. We observed considerable discordance across all HLQ domains (Table 1). Professionals answered "I don't know" most often for "Having social support for health" (19.4%, domain 4). Most discordance occurred for "Critically appraising information" (42.1%, domain 5). For all HLQ domains except "Having social support for health" (domain 4), discordance was associated with socioeconomic factors. In patients with a non-Western immigration background, professionals were likely to assign lower scores than patients' HLQ scores in six domains. Education level was an important driver of discordance in seven domains, with the direction of the association being domain-dependent. Other factors associated with discordance in multiple domains were type of rheumatic disease, comorbidities, mastery, how well the professional knew the patient, type of professional, and disease impact.

Table 1. Discordance per HLQ domain (n=778)

HLQ domain	Professional scored lower	No discordance	Professional scored higher	Professional did not know
	n (%)			
1. Healthcare provider support	128 (16)	514 (66)	126 (16)	10 (1)
2. Having sufficient information	100 (13)	528 (68)	143 (18)	7 (1)
3. Actively managing health	95 (12)	461 (59)	208 (27)	14 (2)
4. Having social support for health	55 (7)	397 (51)	175 (22)	151 (19)
5. Critically appraising information	78 (10)	448 (58)	250 (32)	2 (0)
6. Actively engaging with providers	205 (26)	500 (64)	70 (9)	3 (0)
7. Navigating the health system	115 (15)	544 (70)	107 (14)	12 (2)
8. Finding health information	163 (21)	492 (63)	98 (13)	25 (3)
9. Understanding health information	145 (19)	511 (66)	110 (14)	12 (2)

Conclusion: Considerable discordance between patients' health literacy and their treating health professionals' assessment exists across health literacy domains. In eight out of nine domains, discordance was associated with the patient's socioeconomic background, particularly education and immigration background. Understanding and addressing the reasons for discordance between patient-reported and professional-perceived health literacy has potential to improve responsiveness to patients' needs, promote better communication and ultimately improve care outcomes.

REFERENCES:

- [1] Bakker et al., *Arthrit Care Res* (2021)
- [2] Storms et al., *BMJ Open* (2019)
- [3] Osborne et al., *BMC Public Health* (2013)

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2344

POS0300

DOES COGNITIVE BEHAVIORAL THERAPY IMPROVE PSYCHOSOCIAL OUTCOME IN RHEUMATOID ARTHRITIS: A SYSTEMATIC LITERATURE REVIEW

A. Van Breda¹, D. De Cock¹, C. Vervloesem¹, M. Doumen^{1,2}, D. Bertrand¹, S. Pazmino¹, R. Westhovens^{1,2}, P. Verschuere^{1,2}, ¹KU Leuven, *Skeletal Biology and Engineering Research Centre, Leuven, Belgium*; ²University Hospitals Leuven, *Rheumatology, Leuven, Belgium*

Background: Rheumatoid arthritis (RA) is a chronic inflammatory auto-immune disease impacting both physical and mental wellbeing of patients. Cognitive behavioral therapy (CBT), a psycho-social intervention aiming to revert maladaptive thinking and dysfunctional behavior, could improve psychosocial wellbeing in patients with RA. However, it is unclear which CBT components are most successful in improving wellbeing and if certain subpopulations might be more sensitive to CBT therapy.

Objectives: To summarize in a systematic literature review, the effect of CBT on psychosocial outcomes in RA, focussing on most successful components and which patient subgroups benefit most from CBT.

Methods: A search was conducted with the support of a health sciences librarian at the KU Leuven Biomedical Library from inception until 28.06.2020 in 5 electronic databases: PubMed, EMBASE, Web of Science Core Collection, Cochrane Library and Cumulated Index to Nursing and Allied Health Literature (CINAHL). We included studies in English and Dutch involving patients >18 years old with RA, using cognitive behavioral approaches as intervention, with outcomes related to psychosocial variables. Two reviewers (CV&AVB) independently screened first the titles and abstracts of the studies, and later the full texts for eligibility. A third reviewer (DDC) was consulted if no consensus was found. Quality was assessed by the Critical Appraisals Skills Programme (CASP) RCT checklist.

Results: In total, 18 of 1114 retrieved articles could be included (Table 1). Mean age of the participants ranged between 48-63 years with a mean disease duration between 13-16 years. The most used CBT techniques included relaxation training, attention diversion strategies, problem solving skills, goal setting, communication, and social skills training. CBT resulted in ameliorated psychosocial wellbeing related to more active coping styles, improved self-efficacy and reduced perception of disease stressors. Six/18 studies focused on a RA patient subgroup with an increased psychosocial risk profile, such as high levels of depression. There was limited evidence for an improved treatment effect in these patients because of the elevated levels of psychological distress, but internal motivation seemed key for success.

Table 1. Included studies

First Author	Year	Country	Population	Mean age	Outcomes assessed
O'Leary	1988	USA	N=30	49y	Self-efficacy, Depression, Loneliness, perceived stress
Radojevic	1992	USA	N=59	54y	Depression, Anxiety, Pain coping
Germond	1993	SA	N=24	49y	Coping, Health Control, Stress, Mood, Impact
Parker	1995	USA	N=141	60y	Life stress, Daily stressors, helplessness, depression, anxiety, self-efficacy, impact
Kraaimaat	1995	NL	N=43	57y	Anxiety, Depression, Social Support, Pain Coping
Sharpe	2001	UK	N=55	56y	Anxiety, Depression, Coping
Evers	2002	NL	N=64	54y	Anxiety, Negative mood, Social functioning, Illness cognitions, coping, pain, compliance
Parker	2003	USA	N=54	56y	Depression, Stressors, Stress, Anxiety, Helplessness, Self-efficacy
Van Lankveld	2004	NL	N=58	50y	Depression, Anxiety, Stressors, Coping, Social Support
Zautra	2008	USA	N=142	52y	Affect, Depression, Coping, Pain, Catastrophizing
Hammond	2008	UK	N=167	55y	Self-efficacy, distress, Control, Self-Management
Barsky	2010	USA	N=168	53y	Distress
Hewlett	2011	UK	N=117	60y	Anxiety, Depression, Fatigue
Sharpe	2012	AU	N=104	56y	Anxiety, Depression
Garnefski	2013	NL, BE	N=82	48y	Depression, Anxiety, Self-efficacy
Lumley	2014	USA	N=266	55y	Anxiety, Depression
Vermaak	2015	AU	N=113	54y	Depression, Anxiety, Self-Efficacy, Distress, QoL
Hewlett	2019	UK	N=319	63y	Fatigue, Mood, QoL, Self-Efficacy, Helplessness

Conclusion: Adding CBT to standard care induces modest improvements in psychosocial outcomes for patients with RA. CBT seems more successful if patients are motivated to reflect on their cognitions and behaviours. However, more research with large-scale studies, focusing also on the critical early disease phase, is needed to investigate the long-term benefits of CBT.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.4090