Evidence report

E4E: Self-management education programs for osteoarthritis

What is self-management for osteoarthritis?

Self-management education programs are designed to encourage people with osteoarthritis 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 learning about: constructive attitudes and approaches, positive and active engagement in daily life, emotional well-being, health-directed activities (i.e., practical actions to improve health behaviours, e.g. diet, exercise, and other healthy habits), health service navigation, social integration and support, self-monitoring and insight, and skill and technique acquisition, e.g., education about osteoarthritis and the benefits and harms of medication and other therapies (Osborne et al).

The programs are provided in addition to medical care. The program format may be provided in an individualized or group setting, in person or online, and may be in written or video formats.

Is it effective?

A Cochrane review (Kroon 2014) of 29 randomized controlled trials found low certainty evidence that self-management interventions may have a small but clinically unimportant effect on pain reduction and little to no improvement in self-management skills, function, or quality of life compared to an attention control group (participants receive same contact hours with program providers but the content does not include self-management interventions; for example, general education). Compared to usual care, self-management probably results in a slight improvement in self-management skills, pain, and function (moderate-certainty evidence). The SoF table (Fig.1) is available at the end of this document.

While the benefits found in the trials are small to none, the harms are minimal and clinical practice guidelines on the treatment of osteoarthritis recommend self-management strategies. (Kolasinski 2019, Bannuru 2019).

Characteristics of studies

Populations

The systematic review by Kroon et al extracted data from each included study on the baseline characteristics of participants following the PROGRESS-Plus criteria. Place of residence, sex/gender, and age were reported in nearly all studies and race/ethnicity were reported in about half of the studies. Most studies were conducted in the US, followed by the UK, The Netherlands and Australia. One study was conducted in each of Spain, Sweden and Hong Kong. Most participants were female (68%), white (70%), with an average age of 65 years. Education was reported in less than half the studies with the majority having at least high school education and in several studies post secondary education was common. There was limited data on employment and socioeconomic status (SES) data; in the few studies that reported SES, most were lower to middle income, and one was focused on a low income, inner city population. Social capital was rarely reported, usually through marital status and were likely to have social support. Health literacy was reported in 4 studies; none used standardized health literacy tools.

Interventions

Most interventions in these trials focused on skill acquisition, health-directed activities and self-monitoring and insight. Social integration and support was rarely included in the programs. The majority of studies offered self-management programs in a group setting (65%), a quarter were individual sessions, and the rest were a combination of the two. Most programs were delivered in a face-to-face setting (74%), only two were over the telephone and one was internet-based; the rest were a combination of these. Most programs lasted six weeks.

Self-management program components	**% of program components reported in the 29 trials**
Skill & technique acquisition	94%
Health-directed activity	85%
Self-monitoring & insight	79%
Constructive attitudes & approaches	44%
Emotional well-being	38%
Health service navigation	32%
Positive and active engagement in life	26%
Social integration & support	12%

How certain are we of the results?

The certainty of the evidence from the Kroon et al systematic review ranges from moderate to low, with concerns related to risk of bias of methods (e.g., lack of blinding, unclear methods) and inconsistency across studies.

Equity relevant information from studies included in Kroon et al systematic review

Baseline equity-relevant characteristics in primary studies

While the baseline characteristics of participants was reported by PROGRESS-plus criteria as outlined in the section above, none of the included studies conducted subgroup analyses or reported effect modification by these criteria. Kroon et al.'s systematic review found little to no evidence that effects differed between studies conducted in predominantly White, educated, female populations and those conducted in other populations for self-management, function, pain, or withdrawals.

Equity-relevant data extracted from primary studies in Kroon et al.

Author	Year	Equity focused feasibility and/or acceptability considerations	Equity focused implementation considerations
Ackerman	2012	• the data strongly indicate that the 6-week group-based format is either not desirable or not practical for many people with moderate or worse hip or knee OA. • although we anticipated likely barriers to participation and built enablers into the study design, our screening process identified that many people did not want or were not able to attend the program. Barriers included work and family commitments, difficulty getting to courses and poor health	• home-based interventions including telephone coaching or Web-based programs might be more accessible to people with OA who commonly have functional limitations and comorbidities. • low referral rates by healthcare provider, requires considerable administrative support
Allen	2010	•Different types of intervention strategies may be more effective for patients at various stages of readiness-to-change and a tailored, stage-based approach may be most effective when implementing osteoarthritis self-management broadly in clinical settings	•Linking osteoarthritis self-management more directly to clinical care could foster an ongoing patient–provider partnership and lead to more sustained healthy behaviors and improved outcomes • Telephone-based programs may be more readily integrated into clinical practice than face-to-face programs and seem to be particularly useful for reaching some vulnerable patient groups, including those who are older, have more disabilities or lower socioeconomic status, or live in a rural area.
Berman	2004	nr	nr
Blixen	2004	• telephone-based intervention may be better for elderly because of mobility or logistic problems; only limited by lack of phone or poor hearing • study provides evidence that elderly people will agree to participate in and complete a telephone self-management programme.	• to reduce the number of telephone calls made by the nurse educator to contact subjects for their scheduled telephone session, a written reminder should be sent to each subject beforehand. • to sustain the improvements seen immediately after the six-week self-management programme, there should be continuing follow-up in the form of monthly reinforcement telephone calls.

Buszewicz	2006	• programmes need to consider how to maximise participation and the relatively poor uptake of the intervention is of concern in terms of the accessibility and acceptability of self management programmes in primary care. • an understanding of how various components of the intervention may impact different outcomes could alllow appropriate targeting of patients to the intervention.	
Calfas	1992	nr	nr
Cronan/Gallagher	1997	•Interventions were equally effective for men and women. Trend for men to have higher quality of well-being scores than women. Women were more likely than men to contact their HMO by phone. • Attendance at 10 weekly and 10 monthly meetings and travel distance may be barriers for people with mobility issues, caregiving responsibilities, lower income, rural residence •intervention composed of group participation and peer interaction which may be less feasible for people with social isolation, limited social networks •may be less acceptable in those less motivated or people less comfortable with group participation	•size of social network is related to lower rates of health care service use and higher health status; people with limited social networks may need additional support •specific psychosocial factors such as coping ability, emotional support, motivation to improve health influence participation, engagement and healthcare use; could account for differences in health care costs or attrition from programmes. •Most participants were well educated and White, longer-term HMO members, limiting generalizability to other populations and broader implementation may require targeted outreach and tailored engagement strategies •peer-led social support interventions were less resource-intensive and may be more scalable
Crotty	2009	na	na
Hansson	2010	na	na
Heuts	2005	• this study focused on younger people with OA and a considerable number were performing paying jobs; improvement of pain and daily functioning in this group evidently has important consequences because it positively	na

		influences opportunities for active social participation and quality of life	
Hopman-Rock	2000	na	na
Hughes	2004	na	na
Hurley	2007	• The trial enrolled a representative inner-city population with common comorbidities that primary care physicians encounter in daily practice. Psychological variables and health beliefs are important determinants of functioning; in this study participants with positive exercise beliefs who were confident in their ability to exercise had better functioning, whereas those with higher baseline depression had poorer outcomes. •Group sessions were scheduled at inflexible times that were sometimes inconvenient, and missed sessions could not be rearranged which is consistent with clinical practice, but it was as effective as individual sessions; individual sessions can provide effective, convenient, flexible option	•Consider different delivery options, such as individual sessions, to reduce barriers to participation • Targeting individuals likely to benefit the most from the intervention might maximize efficient use of resources.
Jessep	2009		• The adaptability of the programme is one of its strengths and attractions. It allows clinicians to tailor management to individual's needs, making it clinically relevant and useful.
Keefe	1990	na	• spouse training is considered essential in pain treatment programs and could enhance this program
Keefe	1996		• Some older adults with osteoarthritis may be unmarried, widowed, or lack a spouse or partner. Adaptation of the intervention to include family members, friends, or other support persons may improve applicability and accessibility. • Group-based approaches may not be practical in all clinical settings and may require adaptation for delivery to individual couples

			• Participants had high marital satisfaction and were not considered to have marital distress; limits generalizability of results; authors postulated that since intervention includes components from marital therapy, it is possible that intervention could have more pronounced effects in maritally distressed couples but this needs to be studied.
Keefe	2004		• patients and spouses who participated in the spousal support self-management programme were all volunteers with generally high levels of marital satisfaction; the results may not generalize to patients and spouses who have significant marital problems. • people with medical problems for which exercise may not be safe were excluded, limiting generalizability.
Lorig	2008		• this study assessed an online intervention which is limited to those who are computer literate and have access to the internet; as well, this trial population was highly educated
Maisiak	1996	• the study noted the advantages of telephone interventions: travel not needed, easier to schedule, improved quality control with centralized counseling, less disturbance to caregivers, can individualize assistance. • persons in rural areas or with mobility impairment can more easily participate	• participants in this study tended to be white with average education levels; however, other studies have been conducted in Black, low income population and positive results in both studies suggests an effect for all demographic groups.
Martire	2007	• high rate (>25%) of non-attendance reflects challenges of delivering an intervention that requires repeated travel outside the home for older individuals who are struggling with arthritis and making difficult choices about their activities.	• individuals who received the patient-oriented intervention reported greater reductions in pain and improvements in physical function than those who received the couple-oriented intervention. • spouses who received the couple-oriented intervention reported greater reductions in stress and a trend toward less critical attitudes than spouses of individuals with OA who received the patient-oriented intervention. • female spouses and spouses with high marital

			satisfaction who received the couple-oriented intervention also experienced better outcomes in terms of depressive symptoms and caregiver mastery.
Maurer	1999	nr	•both the exercise and patient education interventions showed benefit in reducing pain but the patient education less costly
Mazzuca	1997	• individualized self-care education program with telephone follow-up showed feasibility in low income, majority Black, women, inner city population; resting knee pain decreased at 1 yr, improved function at 4 mos but not 12 mos	• ongoing, proactive follow-up by patient educator or trained clinical assistant may help to sustain intervention effects
Mazzuca	2004	nr	• Those who direct the resources of primary care systems should consider a supervised, algorithm-based nursing intervention as a likely approach to achieving and maintaining the safe and effective management of knee OA in their elderly patients.
McKnight	2010	nr	nr
Murphy	2008	nr	• study sample was predominantly white women who were well educated which limits generalizability
Nunez	2006	•The programme was based on theories of social learning and self-management and was carried out using active learning strategies in both individual and group visits. This allowed visits to be spaced out over time and facilitated attendance and greater control of the patients' evolution	•It has been suggested that individualized education programs may be better in controlling the symptoms of RA than those carried out in groups

Victor	2005	• loss to follow-up was significantly greater ($p<0.05$) amongst those with lower 'coping' scores as measured by the AHI, lower socio-domain SF-36 scores and lower physical health status. • loss to follow-up was not random with patients being more likely to complete the study if they were more 'positive' about their condition and had higher levels of physical and social functioning; • therefore, the intervention may have been less acceptable, manageable, or engaging for participants with poorer coping or functioning	•loss to follow-up was greater among participants with poorer coping, lower social functioning, and worse physical health status, suggesting that additional supports may be needed to improve engagement and retention for individuals with greater psychosocial or functional challenges.
Wetzels	2005	• study of a single session nurse-based intervention to provide education and self management of OA symptoms in people >65 yrs with OA (average age was 75 yrs) did not show evidence of an effect; authors suggested counseling may need to be targeted more explicitly to individual problems.	• excluded patients with severe psychosocial circumstances
Yip	2007	• intervention was explicitly adapted for an ethnic Chinese population in Hong Kong and incorporated culturally familiar exercise (Tai Chi–style movement). •Exclusion of participants with substantial functional limitations and dropout related to being busy or walking problems may limit applicability to populations experiencing greater disability or access barriers	• equity implication: culturally tailored interventions (language, familiar activities, culturally acceptable self-management approaches) may improve relevance and uptake

Additional equity-focused literature search results

Publication Year	Author	Title	Brief description of study	General OA Equity	Self-management specific
2024	Abbaticchio, A et al	Policies in Canada fail to address disparities in access to person-centred osteoarthritis care: a content analysis.	Examined how OA-relevant policies in Canada address equitable, person-centred OA care for women using content analysis to extract data from English policies in OA-relevant documents.	General equity considerations: Specific population groups, such as Indigenous peoples, newcomers, refugees, and the homeless, face barriers in access to care. Factors affecting this lack of access include a lack of programs and self-management resources in different languages, as well as culturally safe care. Some of these population groups are also disproportionately affected by poverty, social isolation, and precarious employment; this, in turn, may impact access to effective osteoarthritis care. One of the challenges for patients navigating conservative treatment is that most of the treatment modalities fall outside of the publicly funded health	Four (29%) policies recommended strategies for improving access to OA care at the patient (self-management education material in different languages and tailored to cultural norms), clinician (healthcare professional education) and system level (evaluate OA service equity, engage lay health leaders in delivering self-management programs, and offer self-management programs in a variety of formats). Example of detailed policy" Work with people with osteoarthritis to support the development of an individualized, goal-oriented selfmanagement plan that gives the person information and advice on the ongoing management of their symptoms and directs them to resources and other supports they may need. [Plans] should include information about how to access local services, such as exercise classes, weight-management programs, and support groups. [Plans] will also need to consider any other medical conditions you have that may impact your goals and abilities. translate self-management

				system. Community educational programs, lifestyle coaching, exercise programs, physiotherapy, massage therapy, and dietary consultations are mostly privately funded. This results in inequity for patients unable or unwilling to fund these treatments out of pocket or who lack adequate private insurance coverage. This situation also leads patients who are financially able to entertain treatment options that are not based on scientific and medical evidence…the result is a complex navigation challenge where patients are forced to become subject matter experts in managing their disease. They are often faced with the difficult choice of paying out of pocket for privately funded treatments of uncertain benefit, suffering with untreated joint pain until the disease progresses to end-stage, or aggressively pursuing scarce public services, with little guidance	educational material into various languages [33–35, 42] and ensure content is culturally-relevant. Engage lay health leaders representing equity-seeking communities to deliver self-management programs [33–35, 39] and enhance the accessibility of self-management programs via telephone and online support; delivering programs online, but also considering that people with financial or literacy challenges may not have access to a web-enabled device or be comfortable using it [RESEARCH RECOMMENDATIONS Investigate how to support self-management among various equity-seeking groups [30, 32, 45]; Evaluate access to and impact of existing OA management programs to identify factors that contribute to beneficial outcomes [31, 33–37, 42–44]; Identify supports needed by healthcare professionals to foster patient self-management [39]; and Engage persons with OA in research.

				or information to assist in their decision-making. Incorporate arthritis-related curriculum into post-graduate and specialty programs that address the needs of vulnerable groups.	
2025	Abdullah, Y et al	Racial disparities in osteoarthritis: Prevalence, presentation, and management in the United States.	purpose of the current literature review is to summarize differences in OA prevalence, presentation, disability, diagnosis, and management among different racial-ethnic groups in the U.S.	-	there are no racial differences in voluntary participation in Self-Management Education (SME) programs and OA education
2025	Abenoja, A et al	Strategies to Improve Equitable Access to Early Osteoarthritis Diagnosis and Management: An Updated Review.	The purpose of this study was to conduct a rapid review of research published from 2010 to now on strategies to support equitable, person-centered, and early OA diagnosis and management.	-	Studies included older adults (46%), 27% targeted Black patients, 9% targeted Spanish speakers, 18% focused on women, 73% included at least 50% women, 86% reported and analzed results by sex or gender. 7 studies assessed self management programs: one reported significantly less joint stiffness, physical function disability, and depressive symptoms and reported significantly higher selfefficacy and quality of life among women aged 65 years and older in the experimental group, one reported better knee functional status and higher

					health-related quality of life among womenintheintervention group, one reported a significant improvement in arthritis self-efficacy, pain beliefs, and the number of unplanned medical consultations among the intervention group of participants aged 65 years and older (70% women), reported a significant difference in communication about source of pain among adults aged 60 years and older in the intervention group (83% women)
2025	Anderson, A et al	Adapting an Osteoarthritis Peer Mentorship Intervention for Remote Delivery to People Experiencing Socioeconomic Disadvantage: A Multi-Method Approach.	Study asessing adapting an in person OA peer support program to remote delivery for low SES	-	Employing a multi-method approach with diverse partners was key to identifying what adaptations were required. Offer the option to hold mentorship sessions via telephone or videoconferencing with choice of platform; small group options; peer mentors are themselves experiencing SES disadvantage, speak same language; support for communication needs, eg. for deaf/hard of hearing; provide electronic and printed copies of materials prior to first session; mentor and mentee info in two separate packages; link to national support orgs and how to search for local orgs;
2011	Borkhoff, C et al	Reaching those most in need: a scoping review of interventions to improve health care quality for	To conduct a systematic review to identify and describe the scope and nature of the research evidence on the	-	•Nine of 10 studies considered targeted intervention research, evaluated arthritis self-management interventions. All 9 studies reported positive results supporting the use of arthritis self-management as an intervention to improve health care quality of

		disadvantaged populations with osteoarthritis.	effectiveness of interventions to improve health care quality or reduce disparities in the care of disadvantaged populations with osteoarthritis		disadvantaged populations with OA. The authors of these studies reported improvements in the participants' knowledge of OA and self-management options, self-help skills, exercise behavior, cognitive symptom management, self-efficacy, depression, perceived helplessness, disability, pain at rest, pain when walking, overall joint pain, general health status, and the use of adaptive equipment. •Seven of these studies compared the disadvantaged population to a pretest or control group. One study was the first to document the benefits of ASMPs for African Americans, acknowledging the programs' potential in reducing health care disparities. However, rather than comparing the difference in effect between the African Americans and a relevant comparator group (i.e., whites), the authors compared African Americans to all participants (including the African American participants. • one study compared the effectiveness of an ASMP or a social support group or a combined intervention of the two between women and men. The authors found that all 3 interventions were equally effective for men and women in decreasing helplessness levels and that the education-only and combination groups

					were equally effective for men and women in decreasing anxiety levels, but that men, compared with women, experienced greater improvements in the quality of well-being, self efficacy, and depression. •one study examined differences in health status, health behavior, arthritis self efficacy,and health care utilization between Spanish speaking and English-speaking participants who were mailed an arthritis self-management tool kit; they found no difference in the effectiveness of the tool kit between the two groups and concluded that all of the tool kit participants experienced positive results for all outcomes but health care utilization, which was unaffected. • Much of the positive impact of the ASMPs that were evaluated is likely attributable to the cultural tailoring of these programs to meet the needs of the targeted disadvantaged population. Needs assessments with representatives from the disadvantaged group, community involvement, and the training of lay leaders to deliver the intervention were frequently part of developing the intervention. • Given the fact that disadvantaged populations do not receive potentially effective interventions until they reach 25% of the total

					population with the disease, culturally tailoring programs appears to be an effective strategy on how to extend their reach to those most in need. •Our review identifies important gaps in knowledge and a focus for future research. None of the identified studies evaluated interventions targeting health care providers, and few targeted the health care system. This is despite evidence to suggest that provider behavior during the clinical encounter and the operation of health care systems contribute substantially to health care inequities
2014	Guillemin, F et al	Determinants of MSK health and disability--social determinants of inequities in MSK health.	The goal of this chapter is to review concepts and determinants associated with health inequity, and the effect of interventions to minimize their impact.	General equity considerations: Access to hip and knee OA treatment is also associated with education level, income, place of residence and personal factors. Overall, the highest access group are men between the ages of 60 and 84. On the other hand, access tends to be low among people living in rural communities and of non-white ethnicity . Education is a strong determinant of differences in health. It has been shown to determine a remarkably homogeneous	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 socioeconomic status, education, and wealth). Hence, much effort should be placed on sustaining interventions targeting those most in need, which means specific design, recruitment, and attention.

				gradient of prevalence at the disadvantage of low educated people across age classes for a large number of chronic disease groups in Europe. In Ontario Canada, Glazier [15] found no issue in access to primary care physicians based on people's level of education, but they noted an inequity in access to specialist care in frequency of visit and bypassing primary care in a system where there is universal health care coverage. In RA and OA, economical resources, time resources, environment and culture were not very valued as facilitators but that outcome expectancy, belief of the doctors, motivation, attitude, agreement, knowledge of patient and accessibility were contributing the most to positive physician behaviors.	
2021	Johnson, A et al	Patterns and Correlates of Self-Management	This study sought to examine the prevalence and correlates of Self	-	To our knowledge, this is the first study to examine the association between SM and experimental pain, introducing an opportunity for more

		Strategies for Osteoarthritis-Related Pain Among Older Non-Hispanic Black and Non-Hispanic White Adults.	management use for pain among non-Hispanic Black patients (NHB) and non-Hispanic White patients (NHW) older adults with or at risk for knee OA.		targeted research on the role of biologic pain mechanisms and specific SM efficacy.In contrast to prior studies, there were no significant differences in use of total SM by ethnicity/race, other studies reporting that NHBs are more likely than NHWs to engage in SM for arthritis. Among NHWs, the total number of pain sites was positively associated with total SM use. Individuals with more widespread pain may engage in more SM activities to mitigate symptoms. This relationship was not evident among NHBs. Among NHBs, lower levels of passive coping were associated with a greater number of reported SM strategies for OA-related pain. This finding is in line with research indicating that more adaptive coping styles contribute to the use of multiple SM strategies for chronic conditions (26). The important difference to consider here is that the drivers of SM use may differ between NHWs and NHBs; for NHWs, the biologic impact (i.e., number of pain sites) was associated with SM, whereas for NHBs, psychosocial processes (i.e., coping) were associated with SM. These findings highlight potential differences in the underlying biopsychosocial mechanisms contributing to SM use in older NHB and NHW adults with musculoskeletal pain.
2021	Reyes, A et al	Racial/Ethnic and	review of race/ethnicity and	-	Consistent: higher education associated with higher self-education

		Socioeconomic Disparities in Osteoarthritis Management.	SES disparities in OA management in interventions in OARSI guideline; differences in treatment utilization, barriers to access, and outcomes after treatment.		program use, more provider education; moderate quantity; Large cross-sectional with adjustment quality of evidence; no association with race

Equity-informed implementation recommendations for self-management education in osteoarthritis

- **Use health-literacy-friendly materials and teaching methods**: Provide information in clear, simple language, supported by visuals and practical examples, and check understanding, recognising that differences in literacy can affect how well people engage with and benefit from self-management education.
- **Tailor services to meet cultural needs of equity-relevant populations:** Build in opportunities for community-based needs assessments and co-production of material, delivery by local leaders; adapt language, activities, and self-management strategies to cultural context and familiarity ; offer peer support or family involvement especially for people who may be socially isolated, to support ongoing self-management beyond formal program sessions.
- **Provide additional support for people facing psychosocial or social barriers**: Individuals with poorer coping, depression, low social functioning, limited social networks, low confidence, or lower motivation may require tailored engagement strategies, additional encouragement, or retention supports to improve participation and outcomes.
- **Make programs easier to access for underserved groups**: Schedule self-management programs so they are accessible to people from racialized communities, those living in rural or remote areas, people with lower incomes, and older adults; repeated travel and inflexible group sessions reduced participation for some participants, particularly older adults and those with poorer mobility or competing responsibilities; consider locations other than in-person, clinic-based programs; provide details on how to access local services.
- **Address practical barriers:** Deliver self-management programs alongside supports that help with cost, transportation, access to services, and follow-up care while understanding existing broader social or health system challenges; consider embedding programmes within routine clinical care.
- **Offer flexible and person-centred delivery options:** Provide self-management education programs through a range of formats, such as in-person, by telephone, videoconferencing or simple technology options, and adapt content to people's cultural context, daily circumstances (e.g. transportation challenges, caregiving responsibilities, work schedules), and physical abilities.

- **Provide proactive follow-up and reinforcement to sustain benefits.** Reminder systems, follow-up telephone calls, or ongoing reinforcement may improve attendance, retention, and maintenance of improvements, particularly among older adults and people facing barriers to ongoing participation.

Gaps and Future directions

While some equity-relevant characteristics were often measured at baseline, there was no equity-relevant analysis of the data. This limits the ability to determine whether self-management and educational interventions for rheumatoid arthritis reduce, exacerbate, or have neutral effects on existing health inequities. Further research is needed to evaluate interventions targeting health care providers, including supports needed by healthcare professionals to foster patient self-management, and the health system. Equity-focused intervention research should explicitly assess whether self-management programs reduce documented health care inequities, including those arising from structural disadvantages related to socioeconomic status, culture, language, and education. 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. People with osteoarthritis should be engaged in the research process.

Figure 1. Summary of Findings tables reproduced from Kroon et al. 2014

SUMMARY OF FINDINGS

Summary of findings for the main comparison. SMP compared to Attention control for osteoarthritis

SMP compared with attention control for osteoarthritis

Patient or population: patients with osteoarthritis
Settings: primary care, or outpatient
Intervention: SMP
Comparison: attention control

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	Attention control	SMP				
Self-management of OA Arthritis self-efficacy scale (ASES). Scale from 1 to 10, higher better Follow-up: 12 months	Mean self-management of osteoarthritis in the control groups was **5.8 points**	Mean self-management of osteoarthritis in the intervention groups was **0.4 points higher** (0.4 lower to 1.2 higher)		344 (one study)	⊕⊕⊖⊖ **low** [1,2]	MD 0.4 (-0.39 to 1.19) Absolute mean improvement 4% (4% worse to 12% improved) Relative improvement 7% (7% worse to 21% improved)[3]
Positive and active engagement in life —not measured	See comment	See comment	Not estimable	-	See comment	No studies measured this outcome
Pain Multiple tools[4]. Scale from: 0 to 10, 0 = no pain Follow-up: six to 12 months	Mean pain ranged across control groups from **5.67 to 6.19 points**	Mean pain in the intervention groups was **0.8 points lower** (0.3 to 0.14 lower)		575 (three studies)	⊕⊕⊖⊖ **low** [1,2]	SMD -0.26 (-0.44 to -0.09) Absolute reduction in pain 8% (3% to 14% reduction). Relative reduction in pain 13% (5% to 22% reduction). NNTB = 8 (5 to 23)[5]
Global OA scores AIMS2 (average of physical, affect, and pain subscales). Scale from 0 to 10, lower better Follow-up: nine months	Mean global osteoarthritis symptom score in the control group was **4.22 points**	Mean global osteoarthritis symptom score in the intervention group was **0.14 points lower** (0.54 lower to 0.26 higher)		251 (one study)	⊕⊕⊖⊖ **low** [2,6]	Absolute reduction 1.4% (5.4% reduction to 2.6% increase). Relative reduction 3% (11% reduction to 5% increase)
Self-reported function	Mean self-reported function in the control groups was	Mean self-reported function in the intervention groups was		574 (three studies)	⊕⊕⊖⊖ **low** [1,2]	SMD -0.19 (-0.5 to 0.11)

Multiple tools.[7] Lower score better Follow-up: 12 months	**1.29 points on 0 to 3 scale** [8]	**0.04 points lower** (0.02 lower to 0.10 higher)				Absolute improvement in function 4% (2% reduction to 11% improvement). Relative improvement 11% (6% reduction to 30% improvement)[8]
Quality of life Quality of well-being scale. Scale from 0 to 1, higher better Follow-up: 12 months	Mean quality of life in the control groups was **0.57 units**	Mean quality of life in the intervention groups was **0.01 lower** (0.03 lower to 0.01 higher)		165 (one study)	⊕⊕⊝⊝ **low** [2,9]	Absolute mean reduction 1% (95% CI 3% lower to 1% higher) Relative reduction 2% (95% CI 5% lower to 1% higher)
Withdrawals Follow-up: six to 12 months	**117 per 1,000**	**130 per 1,000** (91 to 183)	**RR 1.11** (0.78 to 1.57)	937 (five studies)	⊕⊕⊕⊝ **moderate** [2]	Absolute risk difference 1% increase (95% CI 3% decrease to 5% increase). Relative percentage change 11% increase (95% CI 22% decrease to 57% increase)

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).
CI: Confidence interval; **RR:** Risk ratio.

GRADE Working Group grades of evidence.
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1]One large study was conducted in Veteran population that was mostly men (92.7%), limiting applicability of findings.
[2]Design flaws, including participants were not blind to group allocation in all trials, other trials had unclear randomisation method or concealment of allocation and unbalanced withdrawals across treatment groups, render the evidence susceptible to bias.
[3]Estimated relative changes based on mean (SD) ASES score in attention control group at baseline 5.8 (2.0) from Allen 2010.
[4]Pain VAS, pain on walking VAS and pain subscale of the arthritis impact measurement scale (AIMS).
[5]Estimated using mean (SD) for control group VAS pain on walking at baseline 6.28 (3.18) from Mazzuca 1997, and an assumed minimal clinically important difference of 1.5 points in 10-point pain scale.
[6]Approximately half of total study population in trial had rheumatoid arthritis (data not included); data are presented for the OA subgroup; small sample size and wide CIs reduce precision.
[7]AIMS physical disability subscale, AIMS2 function subscale and HAQ disability subscale.
[8]Assumed risk from Mazzuca 1997 control group at 12 months mean HAQ disability scale:1.29 (SD 0.70); 0 to 3 scale, lower score better. Absolute risk difference estimated from control group SD at baseline from the same study (SD 0.66); and relative percent change using mean control group HAQ score at baseline (1.13).
[9]Potential imprecision due to data available only from a single study (n = 165).

Summary of findings 2. SMP compared with usual care for osteoarthritis

SMP compared with usual care

Patient or population: patients with osteoarthritis
Settings: community, outpatient, primary care
Intervention: SMP
Comparison: usual care or no treatment or wait list control

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	Usual care/No treatment/Wait list	SMP				
Self-management of OA Multiple tools[1]. Scale from 1 to 10, higher better Follow-up: three to 21 months	Mean self-management of osteoarthritis in the control groups, using ASES 1 to 10-point scale (10 is better), was **3.7 points** [2]	Mean self-management of osteoarthritis in the intervention groups was **0.13 points higher** (0.02 to 0.23 higher)		1,706 (11 studies)	⊕⊕⊕⊖ **moderate** [3]	SMD 0.16 (0.03 to 0.29) Absolute mean improvement 1.3% (0.2% to 2.3% improvement). Relative improvement 3.5% (0.65% to 6.3% improvement). NNTB 13 (7 to 69)[2]
Positive and active engagement in life Multiple tools[4] Follow-up: six to 12 months	Mean positive and active engagement in life in the control groups, based on SF-36 subscale for role emotional, 0 to 100 scale (100 best), was **57 points** [5]	Mean positive and active engagement in life in the intervention groups was **0.4 points higher** (8 lower to 8.4 higher)		357 (three studies)	⊕⊕⊕⊖ **moderate** [3]	SMD 0.01 (-0.2 to 0.21) Absolute mean improvement 0.4% (8% worsening to 8.8% improvement). Relative improvement 0.5% (10% worsening to 10% improvement)
Pain Multiple tools[6] Follow-up: three to 21 months	Mean pain in the control groups, based on 0 to 10 VAS scale (0 is no pain), was **3.5 points** [7]	Mean pain in the intervention groups was **0.5 points lower** (0.23 to 0.1 lower)		2,083 (14 studies)	⊕⊕⊕⊖ **moderate** [3]	SMD -0.19 (-0.28 to -0.10) Absolute mean reduction 5.5% (8% to 3% reduction). Relative reduction 16% (23% to 8% reduction). NNTB 11 (7 to 21)
Global OA scores Multiple tools[8] Follow-up: six to 21 months	Mean global osteoarthritis scores in the control groups, based on 0 to 96 point WOMAC scale (lower is better), was **35 points** [9]	Mean global osteoarthritis score in the intervention groups was **5.0 points lower** (7.6 to 2.7 lower)[9]		1,957 (seven studies)	⊕⊕⊕⊖ **moderate** [3]	SMD -0.25 (-0.37 to -0.13) Absolute mean improvement 5% (3% to 8% improvement). Relative improvement 13% (7% to 19% improvement). NNTB 10 (7 to 19)[9]

Function—Self-reported Scale from 0 to 68. Lower score is better Follow-up: six to 21 months	Mean function self-reported in the control groups, based on 0 to 68 WOMAC subscale (lower is better), was **25 points** [10]	Mean function self-reported in the intervention groups was **2.6 points lower** (3.9 to 1.3 lower)[10]		2,254 (13 studies)	⊕⊕⊕⊖ **moderate** [3]	SMD -0.18 (-0.27 to -0.09) Absolute improvement 4% (2% to 6% improvement). Relative improvement 10% (5% to 15% improvement). NNTB 14 (9 to 27)[10]
Quality of life Multiple tools[11] Follow-up: six to 21 months	Mean quality of life in the control groups, based on -0.11 to 1.0 EQ-5D scale (higher score is better), was **0.66 points** [12]	Mean quality of life in the intervention groups was **0.006 points higher** (0.03 lower to 0.04 higher)		1,383 (eight studies)	⊕⊕⊕⊖ **moderate** [3]	SMD 0.02 (-0.09 to 0.13) Absolute improvement 0.6% (2.7% worsening to 3.9% improvement). Relative improvement 1% (4.5% worsening to 6.5% improvement)
Withdrawals Losses to follow-up Follow-up: three to 21 months	**172 per 1,000**	**171 per 1,000** (128 to 229)	**RR 0.99** (0.74 to 1.33)	3,738 (16 studies)	⊕⊕⊖⊖ **low** [3,13]	Absolute risk difference 0% (3% lower to 4% higher). Relative difference 10% lower (26% lower to 33% higher)

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).
CI: Confidence interval; **RR:** Risk ratio.

GRADE Working Group grades of evidence.
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1]Arthritis self-efficacy scale (ASES), ASES subscale for pain, arthritis helplessness index (AHI) and the health education impact questionnaire (heiQ).
[2]Self-management measured using ASES 1 to 10 scale; 10 is best score, taken from Heuts 2005: mean (SD) baseline ASES score in control group was 3.7 (0.8), and mean (SD) ASES final score in control group was 3.7 (0.9); for number needed to treat for an additional beneficial outcome (NNTB) calculation, the minimal clinically important difference not known, assumed as 0.5.
[3]Participants and study personnel were not blind to group allocations; other issues included unclear randomisation and concealment of allocation; thus trials were at risk of selection, performance and detection biases. One trial, Victor 2005, had inconsistent results compared with the other 10 trials, possibly related to a high risk of bias in that trial, but we do not believe it was significant enough to downgrade the evidence further.
[4]Quality of life short form 36 (SF-36) subscale for role emotional and heiQ subscale for positive and active engagement in life.
[5]Positive and active engagement in life calculated from Victor 2005, using SF-36, 0 to 100 scale (100 is highest score): mean (SD) baseline score in control group was x (y); and mean final score in control group was 57 points.
[6]Arthritis impact measurement scale (AIMS), visual analogue scale (VAS) and Western Ontario McMaster Universities Arthritis Index (WOMAC).
[7]Pain calculated from Heuts 2005, using VAS 0 to 10 scale (0 is no pain): Mean (SD) baseline hip pain score in control group was 3.5 (2.9); and mean final score in control group was 3.5 (2.7).

[8]Western Ontario McMasters University Arthritis Index (WOMAC), Arthritis Impact Measurement Scale (AIMS2) and self-rated global health questionnaires.
[9]Global disease scores taken from Hurley 2007, using WOMAC 0 to 96 point scale (lower score better): Mean (SD) baseline score in the control group was 38.4 (19.82); and mean final score in control group was 35 points. For number needed to treat for an additional beneficial outcome (NNTB) calculation, the minimal clinically important difference not known, assumed as 0.5.
[10]Self-reported function based on Hurley 2007, using WOMAC function 0 to 68 point scale (lower score better): Mean (SD) baseline score in the control group was 27.2 (14.6); and mean final score in the control group was 25 points. For number needed to treat for an additional beneficial outcome (NNTB) calculation, the minimal clinically important difference not known, assumed as 0.5.
[11]Quality of life short form 36 (SF-36), quality of life, quality of well-being scale and EQ-5D.
[12]Quality of life taken based on Hurley EQ-5D (0 to 1 scale; higher score better): Control group mean (SD) at baseline was 0.6 (0.3) and at follow-up was 0.66 (0.3).
[13]Inconsistency across studies regarding whether greater number of withdrawals in the self-management group or control group.

References

Kroon FPB, van der Burg LRA, Buchbinder R, Osborne RH, Johnston RV, Pitt V. Self-management education programmes for osteoarthritis. Cochrane Database of Systematic Reviews 2014, Issue 1. Art. No.: CD008963. DOI: 10.1002/14651858.CD008963.pub2.

Abenoja A, Theodorlis M, Ahluwalia V, Battistella M, Borkhoff CM, Hazlewood GS, Lofters A, MacKay C, Marshall D, Gagliardi AR. Strategies to Improve Equitable Access to Early Osteoarthritis Diagnosis and Management: An Updated Review. Arthritis Care Res (Hoboken). 2025 Feb;77(2):218-227. doi: 10.1002/acr.25179. Epub 2023 Sep 12. PMID: 37382031; PMCID: PMC11771570.

Anderson A. et al. Adapting an Osteoarthritis Peer Mentorship Intervention for Remote Delivery to People Experiencing Socioeconomic Disadvantage: A Multi-Method Approach. 2025. DOI 10.1111/hex.70245

Borkhoff CM, Wieland ML, Myasoedova E, et al. Reaching those most in need: a scoping review of interventions to improve health care quality for disadvantaged populations with osteoarthritis [review]. Arthritis Care Res (Hoboken) 2011;63:39–52

Kolasinski SL, Neogi T, Hochberg MC, Oatis C, Guyatt G, Block J, et al. 2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee. Arthritis Rheumatol. 2020 Feb;72(2):220-233. doi: 10.1002/art.41142. Epub 2020 Jan 6. Erratum in: Arthritis Rheumatol. 2021 May;73(5):799. doi: 10.1002/art.41761. PMID: 31908163; PMCID: PMC10518852.

Bannuru RR, Osani MC, Vaysbrot EE, Arden NK, Bennell K, Bierma-Zeinstra SMA, et al. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. Osteoarthritis Cartilage. 2019 Nov;27(11):1578-1589. doi: 10.1016/j.joca.2019.06.011. Epub 2019 Jul 3. PMID: 31278997.

Osborne RH, Elsworth GR, Whitfield K. The Health Education Impact Questionnaire (heiQ): an outcomes and evaluation measure for patient education and self-management interventions for people with chronic conditions. Patient Educ Couns. 2007 May;66(2):192-201. doi: 10.1016/j.pec.2006.12.002. Epub 2007 Feb 22.

Schrubbe, LA. Et al. Pain coping skills training for African Americans with osteoarthritis (STAART): study protocol of a randomized controlled trial. 10.1186/s12891-016-1217-2