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Clinician and patients' views about self-management support in arthritis: a cross-sectional UK survey.



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Clinician and patients’ views about self-management support in arthritis: a cross-sectional UK survey.

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ABSTRACT**Objective**

The overall aims of the study are to (a) establish receipt and provision of self-management support for patients with inflammatory arthritis in the UK; and (b) establish if receipt of self-management support is associated with patient's knowledge, skills and confidence to self-manage.

Methods

Questionnaire for patients and healthcare professionals were sent to members and associates of the National Rheumatoid Arthritis Society (NRAS). Patients completed the Patient Activation Measure (PAM), and questions about receipt of self-management support. Healthcare professionals completed the Clinician Support PAM and questions about provision of self-management support.

Results

A total of 886 patients and 117 healthcare professionals completed a questionnaire. Only 15% of patients had attended a structured self-management programme. Over half of patients reported having the skills, confidence and knowledge to self-manage and this was associated with receipt of self-management support embedded in routine care. All healthcare professionals felt that patients should be actively involved in their own care, however, 60% were unable to offer structured self-management support. Healthcare professionals reported engaging in more embedded self-management support than patients reported receiving in routine care.

Conclusions

Only a small proportion of patients with arthritis have attended a structured support programme. Although healthcare professionals report engaging in self-management support embedded in routine care, patients do not necessarily agree and these differences could impact on the experience of patients with arthritis. When embedded self-management support does occur this is a significant predictor of patients’ knowledge, skills and confidence to self-manage, as opposed to attendance at a structured programme.

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SIGNIFICANCE AND INNOVATIONS

- Only a small proportion of patients with arthritis have attended a structured self-management programme.
- Healthcare professionals report greater use of embedded self-management support as opposed to offering a structured self-management programme.
- There are significant disparities between what elements of self-management support patients feel are embedded in routine care and what healthcare professional believe they are delivering.
- Self-management support that is embedded into routine treatment is a stronger predictor of patients' knowledge, skills and confidence to self-manage than is attendance at structured self-management support programmes.

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Self-management support has been identified as one of a number of activities recommended for people with inflammatory arthritis (1;2). This support aims to help patients better manage their symptoms, treatment, physical and psychological consequences and the lifestyle changes inherent in living with a chronic condition (3). This is achieved by increasing patients' skills and confidence in their ability to manage their health (4) and enabling them to take an active role in their own care. Self-management support is thought to consist of eight components; education, goal setting, action planning, problem solving, skills acquisition, self-monitoring, understanding illness and managing emotions (5). This support can take the form of group or individually structured self-management support programmes, such as those offered by arthritis charities or programmes delivered within primary or secondary care but outside of outpatient clinics, or support that is embedded within clinical teams and offered individually within routine consultations.

The UK has a long history of structured arthritis self-management support programmes many derived from the early work of Kate Lorig, which originally focussed on arthritis (6). Although the content, delivery and intensity of the interventions in the UK differed, they were frequently associated with some short-term benefits in terms of pain, disability, knowledge, well-being and ability to cope (7-11), lasting up to 14 months post-intervention and across a range of rheumatological conditions (9;11;12). At one time, a number of UK arthritis charities offered these programmes throughout the country, alongside Primary Care Trusts (PCTs) who were responsible for commissioning, organising and delivering community care at a local level. The PCTs tended to administer the Expert Patient Programme, a chronic disease self-management programme where individuals with a range of chronic conditions were recruited, including those with arthritis. During these times, large

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numbers of people with arthritis were served by structured self-management support.

These efforts began to decline approximately 10 years ago when self-management support was moved to a not-for-profit organisation set up by the UK Government to market and deliver courses, while UK arthritis charities began to decrease the number of self-management programmes they offered. As a result, these programmes then had to compete with all other healthcare services for commissioning by NHS trusts, where as they had been previously funded directly in one way or another by the NHS.

Despite these organisational changes and limiting access it is clear that people with arthritis remain eager for information (13) and access to self-management support (14). Recent research indicates that only 27% of rheumatology units in the UK can provide access to self-management education (15). The reasons for this are as yet unknown and even when patients are referred and invited to attend, uptake rates in clinical practice are undetermined and in clinical trials range between 2 and 28% (16). No published data currently estimates the proportion of patients with arthritis who have attended a structured self-management support programme in the UK, which would be one indicator of the impact of these organisational changes and the degree to which evidence has been translated into practice.

To address any potential barriers to providing and accessing structured self-management support programmes, and provide an avenue for ongoing, sustainable provision recent models are now seeking to embed self-management support within rheumatology clinical teams. This would involve clinicians offering self-management support during routine clinic appointments. An RCT of brief skills-based training in communication and self-management

skills, specifically for rheumatology healthcare professionals, found an increase in learning and integration of self-management support into standard care (17), and an increase in patient’s self-efficacy and acceptance of their condition (18). What is unknown is the extent to which rheumatology healthcare professionals are already embedding self-management support into standard care, or the extent to which patients feel they receive embedded self-management support within their rheumatology consultations.

The overall aims of this study are therefore to (a) establish receipt and provision of both structured self-management support programmes and embedded self-management support for patients with arthritis in the UK; (b) establish if receipt of self-management support, both structured and embedded, is considered to be associated with patient’s knowledge, skills and confidence in their ability to self-manage; and (c) determine healthcare professional’s attitudes to patient involvement in the care process and whether this predicts provision of embedded self-management support.

PATIENTS AND METHODS

Participants and recruitment

Participants, both patients and healthcare professionals, were recruited through the National Rheumatoid Arthritis Society (NRAS), UK. Members of NRAS were emailed a link to the online survey via their electronic newsletter and the wider rheumatoid arthritis community were contacted via NRAS’s social media platform and website. The inclusion criteria for patients were those over the age of 18, with a self-reported diagnosis of inflammatory arthritis. For healthcare professionals, inclusion criteria were those involved in the care of patients with inflammatory arthritis. All questionnaires were completed

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anonymously; completion and submission of the questionnaire was assumed as consent to participate. The study received full ethical approval from the School of Health Sciences Research Ethics Committee, City, University of London.

Measures

Two online questionnaires were developed, one for patients and the other for healthcare professionals. All data were collected online via Smart-Survey™ (19). All questions were compulsory to ensure minimal missing data. NRAS provided input into the design of the questionnaires, suggesting possible response options and rewording potentially confusing or unclear questions. These were then amended prior to ethics approval and dissemination.

Demographic and clinical variables

Patient data were collected on self-reported age, gender, disease type/s (more than one could be selected), use of methotrexate and disease duration. Healthcare professionals reported their age, gender, profession and number of years in practice.

Receipt of self-management support

Patients were asked 'Have you ever taken part in a structured self-management support programme?' (yes/no) and if so, where. To examine the extent to which patients were receiving embedded self-management support from their rheumatology team eight questions were designed, one for each of the eight components of self-management; education, goal setting, action planning, problem solving, skills acquisition, self-monitoring, understanding illness and managing emotions (5). For example, *"I work collaboratively with members of my rheumatology team to develop actions plans about how I manage my arthritis and its treatment"*. Responses for each item were on a 4-point Likert scale from 'strongly disagree' (1) to 'strongly agree' (4). A Cronbach's alpha of 0.81 indicated good

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internal consistency for the scale. A sum score was therefore created, with greater scores indicating greater receipt of embedded self-management support.

Provision of self-management support

Healthcare professionals were asked if they offered a structured self-management support programme to their patients (yes/no), and if not the reasons why. To examine the extent to which healthcare professionals engaged their patients with arthritis in embedded self-management support eight questions were designed, one for each of the eight components of self-management; education, goal setting, action planning, problem solving, skills acquisition, self-monitoring, understanding illness and managing emotions (5). For example, *“I work collaboratively with my patients to solve any problems they have about their arthritis and its treatment”*. Responses for each item were on a 4-point Likert scale from ‘strongly disagree’ (1) to ‘strongly agree’ (4). A Cronbach’s alpha of 0.86 indicated good internal consistency for the scale. A sum score was therefore created, with greater scores indicating greater provision of embedded self-management support.

Self-managing

Patients completed the Patient Activation Measure (PAM), which is a 13-item (20) measure that assesses patient knowledge, skills, and confidence in their ability to self-manage. It is a shortened version of the original 22-item scale (21), which has been found to possess excellent internal validity and person reliability using Rasch models. Responses are on a 4-point Likert scale from ‘disagree strongly’ (1) to ‘agree strongly’ (4), with a N/A option. Scores can be categorised into one of four progressively higher levels of activation, level 1: ‘may not yet believe that the patient role is important’ (score ≤ 47.0), level 2: ‘lacks confidence and knowledge to take action’ (score 47.1 - 55.1), level 3: ‘beginning to take action’ (score 55.2 - 67.0) and level 4: ‘has difficulty maintaining behaviours over time’

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(score ≥ 67.1). Raw scores are a total for the scale, which are then converted into scores from 0-100 with higher scores suggesting a stronger belief in their ability to manage their arthritis. This shortened version has been found to possess similar psychometric properties to the original version (20).

Attitude to patient involvement in the care process

Healthcare professionals completed the Clinician Support Patient Activation Measure (CS-PAM) (22) a 14-item measure that assesses a provider's attitude about the patient's role in the care process. Responses are on a 4 point Likert scale from 'not important' (1) to 'extremely important' (4), with N/A an option. Raw scores are a total for the scale. This total is then converted into a score ranging from 0-100, with higher scores indicating an increased belief that patients with arthritis should be more involved in the care process. Scores can be categorized into one of the 3 levels of activation. Level 1: 'patient should follow medical advice' (score of ≤ 37.81), level 2: 'patient can make independent judgments and actions' (score 39.23 - 58.44) and level 3: 'patient is able to function as a member of the care team' (score ≥ 60.13). The authors report good internal validity and using Rasch models the person reliability is also within acceptable limits (22).

Analysis

Descriptive statistics were used to summarise the characteristics of the sample. For patients, a multiple regression was performed to predict patient knowledge, skills, and confidence in their ability to self-manage (PAM) from disease type, age, gender, disease duration, use of methotrexate, attendance at structured self-management support programme and receipt of embedded self-management support (8 items). For healthcare professionals, a multiple regression was performed to predict engagement in embedded self-management support

(total scores) from age, gender, profession, years in practice and attitude to patient involvement in the care process (CS-PAM).

RESULTS

Participant characteristics

A total of 886 patients took part in the survey. One participant was removed from the study, as they did not identify themselves as having arthritis - 885 patients were included in the final analyses. Most participants were living with just one rheumatological condition (71.50%). A majority had been diagnosed with rheumatoid arthritis (Table 1). The average disease duration was 10.86 years (SD = 10.28 years). Eighty-three percent of the sample were female and age ranged from 21 to 88 years. A total of 117 healthcare professionals responded. Most of the sample were nurses followed by occupational therapists and rheumatologists (Table 2). Eighty-three per cent of the sample were female and age ranged from 21 to 64 years. The mean number of years in practice was 19.89 (SD = 10.93 years).

Patient’s receipt of self-management support

Only 15% (n=133) of patients had attended a structured self-management support programme and this was primarily within the rheumatology service at their treating hospital (Table 3). Receipt of embedded self-management support was more common. Approximately 50% of participants agreed or strongly agreed that they worked collaboratively with members of their rheumatology team to set goals and develop action plans about how to manage their arthritis and had been taught the skills they needed to manage and monitor their condition, as well as understand any test results (online supplementary material A). Over 70% of patients strongly agreed or agreed that a member of their rheumatology team had provided them with information and education about their

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arthritis, or that patients had worked collaboratively with their rheumatology team to solve any problems relating to their condition. By contrast, only 20-30% of participants agreed or strongly agreed that they had been able to discuss their understanding of their arthritis and its treatment with a member of their rheumatology team or that a member of the team had helped them manage the emotions or stresses associated with their condition and its treatment.

Patients self-managing

Patients' mean score on the PAM was 57.82 (SD = 15.51). The sample were evenly split across the four levels of activation, 251 (28.40%) participants were at activation level 1 (may not yet believe that the patient role is important), 182 (20.60%) at level 2 (lacks confidence and knowledge to take action), 204 (23.10%) at level 3 (beginning to take action) and 248 (28.00%) at level 4 (has difficulty maintaining behaviours over time). The multiple regression model explained 55% of the variance in PAM scores ($F(15, 868) = 25.59, p < 0.001$). Disease duration ($\beta = 0.16, p < .001$), embedded goal setting ($\beta = 0.16, p = .01$), embedded self-monitoring ($\beta = 0.16, p = .03$) and embedded discussions about the patients understanding of their condition ($\beta = -0.15, p < .001$) were the only statistically significant predictors in the model (Table 4).

Healthcare professionals attitudes to patient involvement in the care process

Healthcare professionals' mean score on the CS-Pam was 77.13 (SD = 13.99). No healthcare professionals scored within activation level 1 (patient should follow medical advice), 11 (9.40%) were within level 2 (patient can make independent judgments and actions) and 106 (90.60%) were in level 3 (patient is able to function as a member of the care team).

Healthcare professionals provision of self-management support

Almost 60% of the healthcare professionals were unable to offer a structured self-management support programme to their patients with arthritis. This was mainly due to a lack of staffing (n = 41, 35.00%) and funding (n = 20, 17.10%). Others reported not being aware of a suitable programme in their area (n = 14, 12%). Some had a preference to refer patients to other external agencies or organisations (n = 13, 11.1%) or to offer self-management support themselves on an individual basis (n = 3, 2.6%).

Whilst many healthcare professionals were unable to offer a structured approach to supporting their patients, self-management support was more likely to be embedded within standard care. All healthcare professionals surveyed agreed or strongly agreed that they provided information and education to their patients about their arthritis and its treatment (online supplementary material B). Over 90% agreed or strongly agreed that they worked collaboratively with their patients to set goals, develop plans of action, problem solve, help them acquire the necessary skills to manage their arthritis and, understand their arthritis and its treatment. Over 85% agreed or strongly agreed that they taught their patients how to monitor their arthritis and its treatment including the meaning of any blood tests and managing the emotional impact and stresses related to their arthritis. A multiple regression to explore whether CS-PAM scores, along with demographic characteristics could predict engagement in embedded self-management support was not statistically significant ($F(8, 108) = 1.69, p = 0.11$).

Differences between healthcare professionals and patients

Figure 1 demonstrates differences between healthcare professionals and patients on the degree to which the eight components of self-management support were felt to be

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embedded in standard care. Healthcare professionals on average agreed or strongly agreed that they worked with their patients to engage in all eight components of self-management support. Patients, on the other hand, disagreed that many of the eight components of self-management support were being offered to them during their routine consultations.

DISCUSSION

Self-management support should be integral to the care of people with arthritis (1). The mode in which this is implemented can differ from structured programmes delivered in secondary and primary care but outside of the outpatients setting to approaches that are embedded within routine care. There is limited data however, on the provision and uptake of self-management support by patients with arthritis in the UK. This survey found that only 15% of patients with arthritis had attended a structured self-management support programme. Possibly unsurprising given that 60% of rheumatology healthcare professionals were unable to offer a structured self-management support programme to their patients. Primarily because they were unable to staff or fund such services, which corresponds to the barriers to providing psychological support in arthritis (15). Attendance is an important indicator of reach (23), but despite evidence dating back to the 1980's (6) translation of evidence into UK practice appears to remain limited potentially due to the changes made to the commissioning of self-management programmes over 10 years ago.

One potential way of overcoming a lack of access to structured approaches is to embed self-management support into standard care. A model which has received recent attention in the literature (17;18). In fact, although the current study found that many healthcare professionals were unable to offer structured self-management support, they reported

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embedding self-management support into their routine clinic appointments. This shift from the provision of structured self-management programmes, 10 years ago, to embedded support may in part reflect the permeation of the self-management approach into clinical training and NHS priorities (24;25). This does however rely on the ability and preferences of individual clinician.

Although patients and healthcare professionals were not matched, data from this survey indicated that patients do not perceive receiving much self-management support in their clinical encounters, whilst healthcare professionals report providing high levels of support. This could indicate variation between clinicians on the self-management support offered within routine consultations, a lack of shared language between healthcare professionals and patients for self-management (26) and/or the inability of patients and/or healthcare professionals to accurately assess receipt or delivery of self-management support. When patients are able to engage with their healthcare team at a level of involvement consistent with their preferences they experience greater satisfaction with their care, are less depressed and have better health outcomes (27) therefore further investigation into the delivery and receipt of self-management support within the same clinical encounters is required. Given that this study found that embedding goal setting and self-monitoring into routine consultations was associated with greater knowledge, skills and confidence in patients' ability to self-manage, as opposed to attendance at a structured self-management support programme. This provides further justification for embedding self-management support into routine care.

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Recruitment of participants to this survey via online methods yielded a significant response from patients, highlighting the advantages of this approach. One of the strengths of this study is the large, national sample, however concerns have been raised about the representativeness of online research (28). It was however, not possible to estimate the number of people who received or saw the invitation to participate to assess representativeness, due to the online recruitment methods. There was a poorer response from healthcare professionals, and data is bias towards nursing and the allied health professions and those who are more interested in self-management support. The study was limited by its recruitment strategy, as individuals who join societies such as NRAS, may be those who actively seek information and support in relation to their condition. Other potential limitations relate to the questions aimed to measure engagement in embedded self-management support. We do not know how participants interpreted structured self-management support programmes and there may be other components of self-management that were not covered, particularly as we know that patients and healthcare professionals often hold different models of self-management (26). The measure was also developed specifically for this study, and although it contained good internal consistency we did not assess test-retest reliability or other forms of validity. Generalisability of the study outside of the UK is also not possible, given that importance and funding of self-management support differs by country.

Considering the emphasis placed on patient empowerment (24) and the integration of self-management support into the guidelines for managing arthritis (1;2), there seems to be some way to go before evidence has been translated into practice. Despite its long history and evidence base this survey revealed that the organisational changes made to the delivery

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and funding of self-management support in the UK means that only a small proportion of patients with inflammatory arthritis have attended a structured self-management support programme. From the healthcare professional perspective, it appears that self-management support is now more likely to be embedded within routine clinic appointments. When goal setting and self-monitoring were embedded into routine care this was associated with increased patient knowledge, skills and confidence to self-manage. Patients however, felt that this does not always occur, which raises concerns about the impact that this may have on their experience of care and the health outcomes of patients with arthritis.

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REFERENCES

- (1) Zangi HA, Ndosi M, Adams J, Andersen L, Bode C, Boström C et al. EULAR recommendations for patient education for people with inflammatory arthritis. *Ann Rheum Dis* 2015; 74: 954-62.
- (2) National Institute for Health and Care Excellence. Rheumatoid arthritis: the management of rheumatoid arthritis in adults CG79. 2009. London, NICE.
- (3) Barlow J, Wright C, Sheasby J, Turner A, Hainsworth J. Self-management approaches for people with chronic conditions: a review. *Patient Educ Couns* 2002; 48:177-87.
- (4) Dures E, Hewlett S. Cognitive-behavioural approaches to self-management in rheumatic disease. *Nat Rev Rheumatol* 2012; 8:553-9.
- (5) Mulligan K, Steed E, Newman S. Different types and components of self-management interventions. In: Newman S, Steed E, Mulligan K, editors. *Chronic Physical Illness: Self-Management and Behavioural Interventions*. Maidenhead: Open University Press; 2009. 64-77.
- (6) Lorig KR. Arthritis Self-Management: A Patient Education Program. *Rehabil Nurs* 1982; 7:16-20.
- (7) Riemsma RP, Taal E, Kirwan JR, Rasker JJ. Systematic review of rheumatoid arthritis patient education. *Arthritis Rheum* 2004; 51:1045-59.
- (8) Niedermann K, Fransen J, Knols R, Uebelhart D. Gap between short- and long-term effects of patient education in rheumatoid arthritis patients: A systematic review. *Arthritis Rheum* 2004; 51:388-98.

Arthritis self-management support: a national survey

(9) Astin JA, Beckner W, Soeken K, Hochberg MC, Berman B. Psychological interventions for rheumatoid arthritis: A meta-analysis of randomized controlled trials. *Arthritis Rheum* 2002; 47:291-302.

(10) Knittle K, Maes S, de Gucht V. Psychological interventions for rheumatoid arthritis: Examining the role of self-regulation with a systematic review and meta-analysis of randomized controlled trials. *Arthritis Care Res (Hoboken)* 2010; 62:1460-72.

(11) Warsi A, LaValley MP, Wang PS, Avorn J, Solomon DH. Arthritis self-management education programs: a meta-analysis of the effect on pain and disability. *Arthritis Rheum* 2003; 48:2207-13.

(12) Iversen MD, Hammond A, Betteridge N. Self-management of rheumatic diseases: state of the art and future perspectives. *Ann Rheu Dis* 2010; 69:955-63.

(13) Barlow JH, Cullen LA, Rowe IF. Educational preferences, psychological well-being and self-efficacy among people with rheumatoid arthritis. *Patient Educ Couns* 2002; 46:11-9.

(14) Dures E, Almeida C, Caesley J, Peterson A, Ambler N, Morris M et al. Patient preferences for psychological support in inflammatory arthritis: a multicentre survey. *Ann Rheu Dis* 2014; 75:142-7.

(15) Dures E, Almeida C, Caesley J, Peterson A, Ambler N, Morris M et al. A survey of psychological support provision for people with inflammatory arthritis in secondary care in England. *Musculoskeletal Care* 2014; 12:173-81.

(16) Koehn CL, Esdaile JM. Patient education and self-management of musculoskeletal diseases. *Best Pract Res Clin Rheumatol* 2008; 22:395-405.

(17) Dures E, Hewlett S, Ambler N, Jenkins R, Clarke J, Gooberman-Hill R. Rheumatology clinicians' experiences of brief training and implementation of skills to support patient self-management. *BMC Musculoskelet Disord* 2014; 15:108.

Arthritis self-management support: a national survey

- (18) Dures E, Hewlett S, Ambler N, Jenkins R, Clarke J, Gooberman-Hill R. A qualitative study of patients' perspectives on collaboration to support self-management in routine rheumatology consultations. *BMC Musculoskelet Disord* 2016; 17:129-37.
- (19) Smartline International Ltd. Smart-Survey™. 2002. Gloucester.
- (20) Hibbard JH, Mahoney ER, Stockard J, Tusler M. Development and Testing of a Short Form of the Patient Activation Measure. *Health Serv Res* 2005; 40:1918-30.
- (21) Hibbard JH, Stockard J, Mahoney ER, Tusler M. Development of the Patient Activation Measure (PAM): conceptualizing and measuring activation in patients and consumers. *Health Serv Res* 2004; 39:1005-26.
- (22) Hibbard JH, Collins PA, Mahoney E, Baker LH. The development and testing of a measure assessing clinician beliefs about patient self-management. *Health Expect* 2010; 13:65-72.
- (23) Moore GF, Audrey S, Barker M, Bond L, Bonell C, Hardeman W et al. Process evaluation of complex interventions: Medical Research Council guidance. *BMJ* 2015; 350:h1258.
- (24) Department of Health. NHS Outcomes Framework for 2016-17. London, Department of Health; 2016.
- (25) NICE. Quality standards for rheumatoid arthritis. London, National Institute for Health and Care Excellence; 2013.
- (26) Sadler E, Wolfe CD, McKevitt C. Lay and health care professional understandings of self-management: A systematic review and narrative synthesis. *SAGE Open Med* 2014; doi: 10.1177/2050312114544493.
- (27) Kiesler DJ, Auerbach SM. Optimal matches of patient preferences for information, decision-making and interpersonal behavior: evidence, models and interventions. *Patient Educ Couns* 2006; 61:341.

Arthritis self-management support: a national survey

(28) Whitehead LC. Methodological and ethical issues in Internet-mediated research in the field of health: an integrated review of the literature. Social Science & Medicine 2007; 65:782-91.

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Table 1. Patient characteristics

Characteristics	n(%)
Age, m(SD)	56.84(11.10)
Gender	
Female	735(83.10)
Male	150(16.90)
Condition†	
Rheumatoid arthritis	841(95.00)
Osteoarthritis	145(16.40)
Fibromyalgia	74(8.40)
Osteoporosis	57(6.40)
Psoriatic arthritis	33(3.70)
Lupus or Ankylosing Spondylitis	11(1.20)
Juvenile idiopathic arthritis	11(1.20)
Sjögren's	11(1.20)
Inflammatory arthritis	10(1.10)
Seronegative arthritis	8(0.90)
Gout	7(0.80)
Polymyalgia rheumatica	5(0.60)
Osteopenia	4(0.50)
Lumbar spinal stenosis	3(0.30)
Hypermobility syndrome	1(0.10)
Palindromic rheumatism	1(0.10)

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Characteristics	n(%)
Sciatica	1(0.10)
Degenerative disc disease	1(0.10)
Mixed connective tissue disease	1(0.10)
Marfan syndrome	1(0.10)

† Self-reported and more than 1 rheumatological condition could be selected

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Table 2. Healthcare professional characteristics

Profession	n(%)
Nurse Practitioner	55(47.00)
Occupational Therapist	19(16.20)
Rheumatologist	18(15.40)
Physiotherapist	12(10.30)
Podiatrist	6(5.10)
Clinical Nurse Specialist in Rheumatology	3(2.70)
Pharmacist	1(0.90)
Clinical Trials Coordinator	1(0.90)
Research Practitioner	1(0.90)
Practice Nurse	1(0.90)

Table 3. Location of self-management programme attendance

Location	n(%)
Within rheumatology services at hospital	78(59.10)
Charity	27(20.45)
A local patient group	16(12.12)
GP service	9(6.82)
Expert patient programme (EPP)	9(6.82)
Self-taught	1(0.76)
COPERS† course	1(0.76)

† COPERS: coping with persistent pain, effectiveness research into self-management

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Table 4. Multiple regression model for patient PAM scores

	Standardized		
	β	t	p
Coefficients			
(Constant)		7.70	0.00
Age	0.01	0.24	0.81
Gender	-0.01	-0.46	0.65
Disease duration (years)	0.16	5.54	0.00
Methotrexate use	-0.05	-1.78	0.08
Rheumatoid arthritis	0.00	0.04	0.97
Psoriatic arthritis	-0.02	-0.47	0.64
Attendance at a structured self-management programme	0.05	1.82	0.07
A member of the rheumatology team has provided me with information and education about my arthritis and its treatment	-0.02	-0.46	0.65
I work collaboratively with members of the rheumatology team to set goals about how I manage my arthritis and its treatment	0.15	2.65	0.01
I work collaboratively with members of the rheumatology team to develop actions plans about how I manage my arthritis and its treatment	-0.01	-0.17	0.86
I work collaboratively with members of the rheumatology team to solve any problems I have about my arthritis and its	0.09	1.86	0.06

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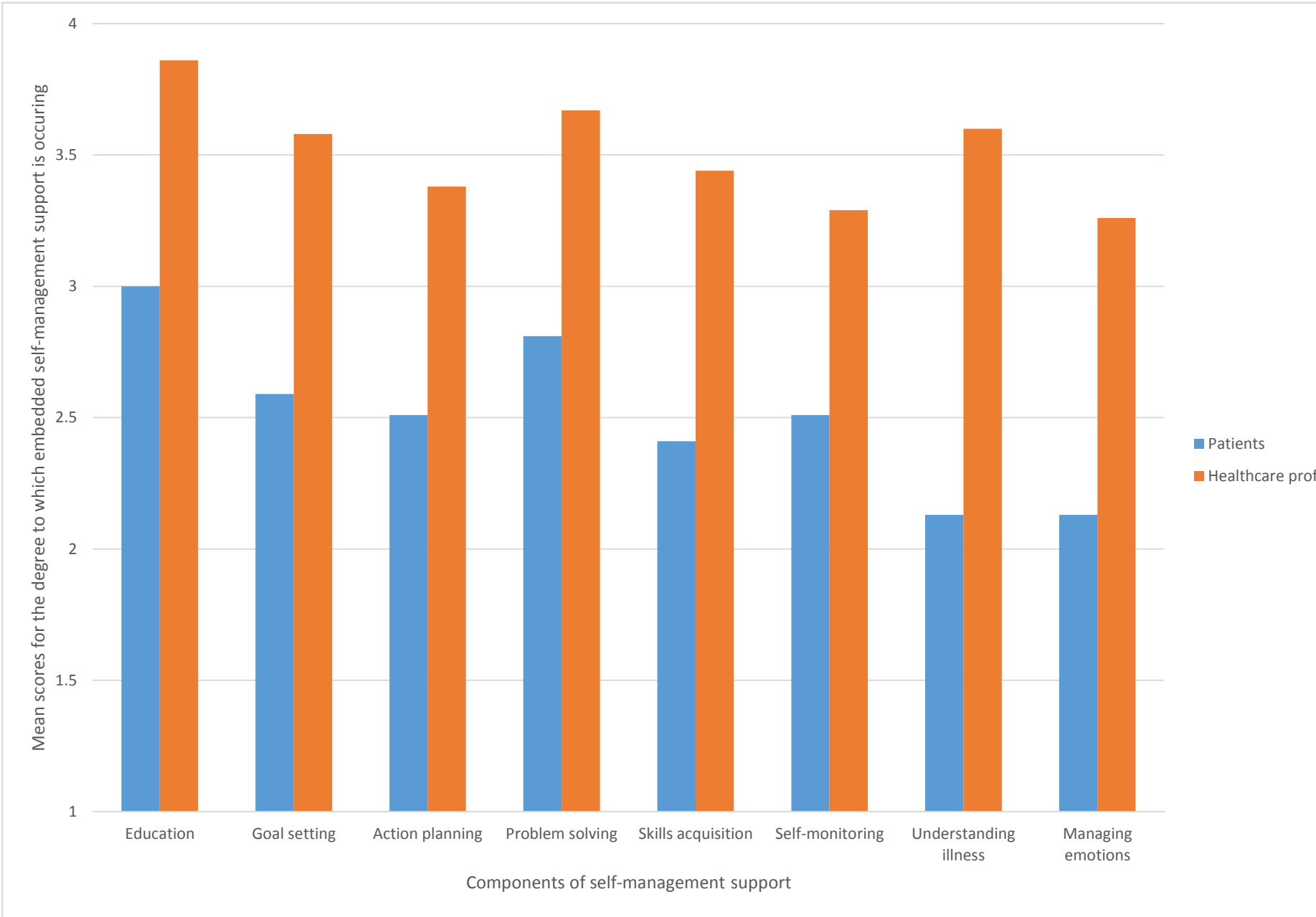
	Standardized		
	β	t	p
	Coefficients		
treatment			
A member of the rheumatology team has taught me the skills	0.06	1.23	0.22
I need to manage my arthritis and its treatment			
A member of the rheumatology team has taught me how to			
monitor my arthritis and its treatment, including the	0.10	2.19	0.03
meaning of any tests I have			
I have discussed what I understand about my arthritis and its			
treatment with a member of the rheumatology team	-0.15	-3.63	0.00
A member of the rheumatology team has helped me manage			
my emotions and any stress I have experienced in relation to	0.08	1.88	0.06
my arthritis and its treatment			

Figure legend

Figure 1. Receipt and delivery of embedded self-management support (mean scores)

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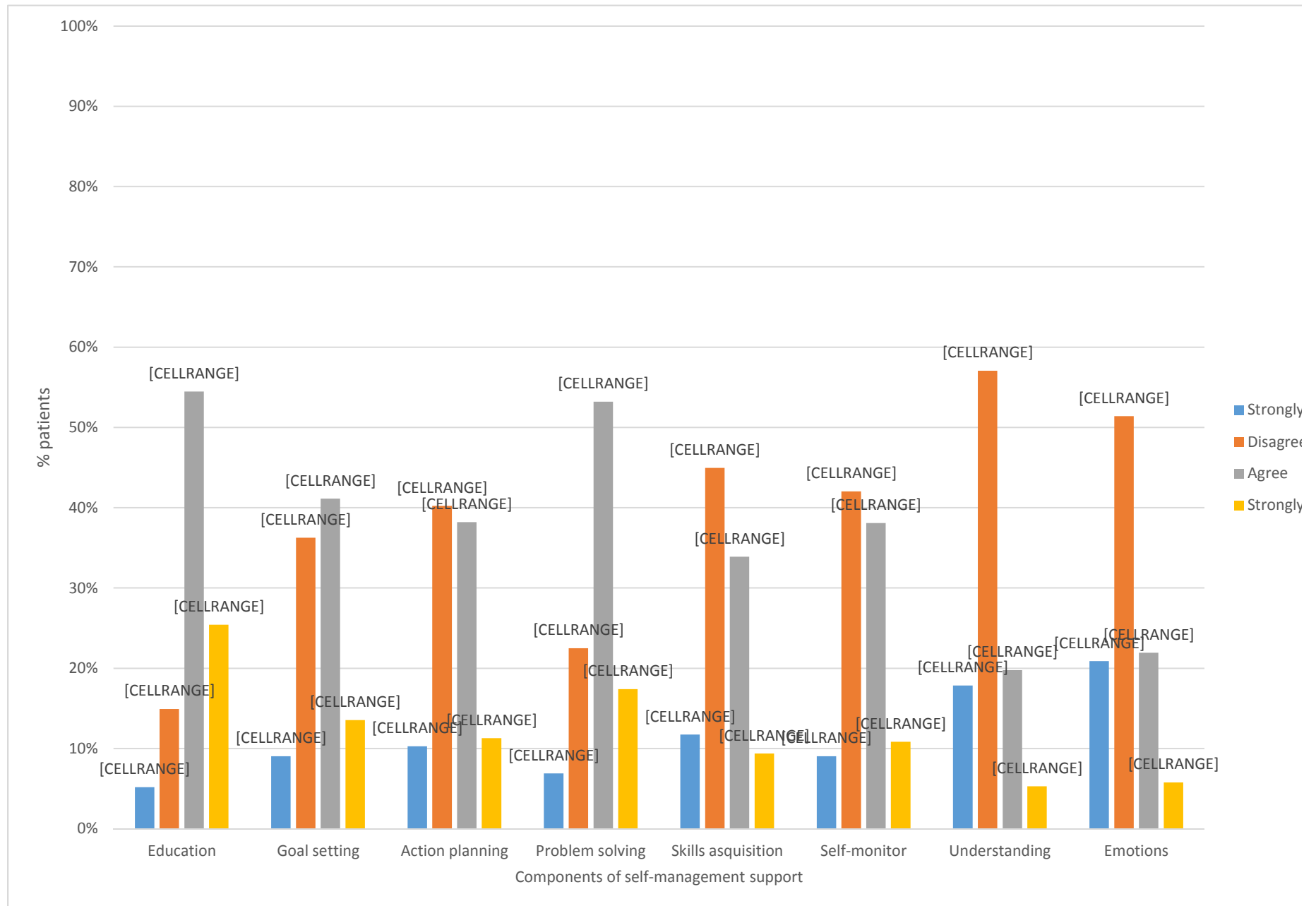


	Education	Goal setting	Action planning	Problem solving
Patients	3	2.59	2.51	2.81
Healthcare professionals	3.86	3.58	3.38	3.67

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1				
2	Skills acquisition	Self-monitoring	Understanding illness	Managing emotions
3	2.41	2.51	2.13	2.13
4	3.44	3.29	3.6	3.26
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Clinician and patients’ views about self-management support in arthritis: a cross-sectional UK survey.

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ABSTRACT**Objective**

The overall aims of the study are to (a) establish receipt and provision of self-management support for patients with inflammatory arthritis in the UK; and (b) establish if receipt of self-management support is associated with patient's knowledge, skills and confidence to self-manage.

Methods

Questionnaire for patients and healthcare professionals were sent to members and associates of the National Rheumatoid Arthritis Society (NRAS). Patients completed the Patient Activation Measure (PAM), and questions about receipt of self-management support. Healthcare professionals completed the Clinician Support PAM and questions about provision of self-management support.

Results

A total of 886 patients and 117 healthcare professionals completed a questionnaire. Only 15% of patients had attended a structured self-management programme. Over half of patients reported having the skills, confidence and knowledge to self-manage and this was associated with receipt of self-management support embedded in routine care. All healthcare professionals felt that patients should be actively involved in their own care, however, 60% were unable to offer structured self-management support. Healthcare professionals reported engaging in more embedded self-management support than patients reported receiving in routine care.

Conclusions

Only a small proportion of patients with arthritis have attended a structured support programme. Although healthcare professionals report engaging in self-management support embedded in routine care, patients do not necessarily agree and these differences could impact on the experience of patients with arthritis. When embedded self-management support does occur this is a significant predictor of patients’ knowledge, skills and confidence to self-manage, as opposed to attendance at a structured programme.

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SIGNIFICANCE AND INNOVATIONS

- Only a small proportion of patients with arthritis have attended a structured self-management programme.
- Healthcare professionals report greater use of embedded self-management support as opposed to offering a structured self-management programme.
- There are significant disparities between what elements of self-management support patients feel are embedded in routine care and what healthcare professional believe they are delivering.
- Self-management support that is embedded into routine treatment is a stronger predictor of patients' knowledge, skills and confidence to self-manage than is attendance at structured self-management support programmes.

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Self-management support has been identified as one of a number of activities recommended for people with inflammatory arthritis (1;2). This support aims to help patients better manage their symptoms, treatment, physical and psychological consequences and the lifestyle changes inherent in living with a chronic condition (3). This is achieved by increasing patients' skills and confidence in their ability to manage their health (4) and enabling them to take an active role in their own care. Self-management support is thought to consist of eight components; education, goal setting, action planning, problem solving, skills acquisition, self-monitoring, understanding illness and managing emotions (5). This support can take the form of group or individually structured self-management support programmes, such as those offered by arthritis charities or programmes delivered within primary or secondary care but outside of outpatient clinics, or support that is embedded within clinical teams and offered individually within routine consultations.

The UK has a long history of structured arthritis self-management support programmes many derived from the early work of Kate Lorig, which originally focussed on arthritis (6). Although the content, delivery and intensity of the interventions in the UK differed, they were frequently associated with some short-term benefits in terms of pain, disability, knowledge, well-being and ability to cope (7-11), lasting up to 14 months post-intervention and across a range of rheumatological conditions (9;11;12). At one time, a number of UK arthritis charities offered these programmes throughout the country, alongside Primary Care Trusts (PCTs) who were responsible for commissioning, organising and delivering community care at a local level. The PCTs tended to administer the Expert Patient Programme, a chronic disease self-management programme where individuals with a range of chronic conditions were recruited, including those with arthritis. During these times, large

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numbers of people with arthritis were served by structured self-management support.

These efforts began to decline approximately 10 years ago when self-management support was moved to a not-for-profit organisation set up by the UK Government to market and deliver courses, while UK arthritis charities began to decrease the number of self-management programmes they offered. As a result, these programmes then had to compete with all other healthcare services for commissioning by NHS trusts, where as they had been previously funded directly in one way or another by the NHS.

Despite these organisational changes and limiting access it is clear that people with arthritis remain eager for information (13) and access to self-management support (14). Recent research indicates that only 27% of rheumatology units in the UK can provide access to self-management education (15). The reasons for this are as yet unknown and even when patients are referred and invited to attend, uptake rates in clinical practice are undetermined and in clinical trials range between 2 and 28% (16). No published data currently estimates the proportion of patients with arthritis who have attended a structured self-management support programme in the UK, which would be one indicator of the impact of these organisational changes and the degree to which evidence has been translated into practice.

To address any potential barriers to providing and accessing structured self-management support programmes, and provide an avenue for ongoing, sustainable provision recent models are now seeking to embed self-management support within rheumatology clinical teams. This would involve clinicians offering self-management support during routine clinic appointments. An RCT of brief skills-based training in communication and self-management

skills, specifically for rheumatology healthcare professionals, found an increase in learning and integration of self-management support into standard care (17), and an increase in patient’s self-efficacy and acceptance of their condition (18). What is unknown is the extent to which rheumatology healthcare professionals are already embedding self-management support into standard care, or the extent to which patients feel they receive embedded self-management support within their rheumatology consultations.

The overall aims of this study are therefore to (a) establish receipt and provision of both structured self-management support programmes and embedded self-management support for patients with arthritis in the UK; (b) establish if receipt of self-management support, both structured and embedded, is considered to be associated with patient’s knowledge, skills and confidence in their ability to self-manage; and (c) determine healthcare professional’s attitudes to patient involvement in the care process and whether this predicts provision of embedded self-management support.

PATIENTS AND METHODS

Participants and recruitment

Participants, both patients and healthcare professionals, were recruited through the National Rheumatoid Arthritis Society (NRAS), UK. Members of NRAS were emailed a link to the online survey via their electronic newsletter and the wider rheumatoid arthritis community were contacted via NRAS’s social media platform and website. The inclusion criteria for patients were those over the age of 18, with a self-reported diagnosis of inflammatory arthritis. For healthcare professionals, inclusion criteria were those involved in the care of patients with inflammatory arthritis. All questionnaires were completed

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anonymously; completion and submission of the questionnaire was assumed as consent to participate. The study received full ethical approval from the School of Health Sciences Research Ethics Committee, City, University of London.

Measures

Two online questionnaires were developed, one for patients and the other for healthcare professionals. All data were collected online via Smart-Survey™ (19). All questions were compulsory to ensure minimal missing data. NRAS provided input into the design of the questionnaires, suggesting possible response options and rewording potentially confusing or unclear questions. These were then amended prior to ethics approval and dissemination.

Demographic and clinical variables

Patient data were collected on self-reported age, gender, disease type/s (more than one could be selected), use of methotrexate and disease duration. Healthcare professionals reported their age, gender, profession and number of years in practice.

Receipt of self-management support

Patients were asked 'Have you ever taken part in a structured self-management support programme?' (yes/no) and if so, where. To examine the extent to which patients were receiving embedded self-management support from their rheumatology team eight questions were designed, one for each of the eight components of self-management; education, goal setting, action planning, problem solving, skills acquisition, self-monitoring, understanding illness and managing emotions (5). For example, *"I work collaboratively with members of my rheumatology team to develop actions plans about how I manage my arthritis and its treatment"*. Responses for each item were on a 4-point Likert scale from 'strongly disagree' (1) to 'strongly agree' (4). A Cronbach's alpha of 0.81 indicated good

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internal consistency for the scale. A sum score was therefore created, with greater scores indicating greater receipt of embedded self-management support.

Provision of self-management support

Healthcare professionals were asked if they offered a structured self-management support programme to their patients (yes/no), and if not the reasons why. To examine the extent to which healthcare professionals engaged their patients with arthritis in embedded self-management support eight questions were designed, one for each of the eight components of self-management; education, goal setting, action planning, problem solving, skills acquisition, self-monitoring, understanding illness and managing emotions (5). For example, *“I work collaboratively with my patients to solve any problems they have about their arthritis and its treatment”*. Responses for each item were on a 4-point Likert scale from ‘strongly disagree’ (1) to ‘strongly agree’ (4). A Cronbach’s alpha of 0.86 indicated good internal consistency for the scale. A sum score was therefore created, with greater scores indicating greater provision of embedded self-management support.

Self-managing

Patients completed the Patient Activation Measure (PAM), which is a 13-item (20) measure that assesses patient knowledge, skills, and confidence in their ability to self-manage. It is a shortened version of the original 22-item scale (21), which has been found to possess excellent internal validity and person reliability using Rasch models. Responses are on a 4-point Likert scale from ‘disagree strongly’ (1) to ‘agree strongly’ (4), with a N/A option. Scores can be categorised into one of four progressively higher levels of activation, level 1: ‘may not yet believe that the patient role is important’ (score ≤ 47.0), level 2: ‘lacks confidence and knowledge to take action’ (score 47.1 - 55.1), level 3: ‘beginning to take action’ (score 55.2 - 67.0) and level 4: ‘has difficulty maintaining behaviours over time’

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(score ≥ 67.1). Raw scores are a total for the scale, which are then converted into scores from 0-100 with higher scores suggesting a stronger belief in their ability to manage their arthritis. This shortened version has been found to possess similar psychometric properties to the original version (20).

Attitude to patient involvement in the care process

Healthcare professionals completed the Clinician Support Patient Activation Measure (CS-PAM) (22) a 14-item measure that assesses a provider's attitude about the patient's role in the care process. Responses are on a 4 point Likert scale from 'not important' (1) to 'extremely important' (4), with N/A an option. Raw scores are a total for the scale. This total is then converted into a score ranging from 0-100, with higher scores indicating an increased belief that patients with arthritis should be more involved in the care process. Scores can be categorized into one of the 3 levels of activation. Level 1: 'patient should follow medical advice' (score of ≤ 37.81), level 2: 'patient can make independent judgments and actions' (score 39.23 - 58.44) and level 3: 'patient is able to function as a member of the care team' (score ≥ 60.13). The authors report good internal validity and using Rasch models the person reliability is also within acceptable limits (22).

Analysis

Descriptive statistics were used to summarise the characteristics of the sample. For patients, a multiple regression was performed to predict patient knowledge, skills, and confidence in their ability to self-manage (PAM) from disease type, age, gender, disease duration, use of methotrexate, attendance at structured self-management support programme and receipt of embedded self-management support (8 items). For healthcare professionals, a multiple regression was performed to predict engagement in embedded self-management support

(total scores) from age, gender, profession, years in practice and attitude to patient involvement in the care process (CS-PAM).

RESULTS

Participant characteristics

A total of 886 patients took part in the survey. One participant was removed from the study, as they did not identify themselves as having arthritis - 885 patients were included in the final analyses. Most participants were living with just one rheumatological condition (71.50%). A majority had been diagnosed with rheumatoid arthritis (Table 1). The average disease duration was 10.86 years (SD = 10.28 years). Eighty-three percent of the sample were female and age ranged from 21 to 88 years. A total of 117 healthcare professionals responded. Most of the sample were nurses followed by occupational therapists and rheumatologists (Table 2). Eighty-three per cent of the sample were female and age ranged from 21 to 64 years. The mean number of years in practice was 19.89 (SD = 10.93 years).

Patient’s receipt of self-management support

Only 15% (n=133) of patients had attended a structured self-management support programme and this was primarily within the rheumatology service at their treating hospital (Table 3). Receipt of embedded self-management support was more common. Approximately 50% of participants agreed or strongly agreed that they worked collaboratively with members of their rheumatology team to set goals and develop action plans about how to manage their arthritis and had been taught the skills they needed to manage and monitor their condition, as well as understand any test results (online supplementary material A). Over 70% of patients strongly agreed or agreed that a member of their rheumatology team had provided them with information and education about their

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arthritis, or that patients had worked collaboratively with their rheumatology team to solve any problems relating to their condition. By contrast, only 20-30% of participants agreed or strongly agreed that they had been able to discuss their understanding of their arthritis and its treatment with a member of their rheumatology team or that a member of the team had helped them manage the emotions or stresses associated with their condition and its treatment.

Patients self-managing

Patients' mean score on the PAM was 57.82 (SD = 15.51). The sample were evenly split across the four levels of activation, 251 (28.40%) participants were at activation level 1 (may not yet believe that the patient role is important), 182 (20.60%) at level 2 (lacks confidence and knowledge to take action), 204 (23.10%) at level 3 (beginning to take action) and 248 (28.00%) at level 4 (has difficulty maintaining behaviours over time). The multiple regression model explained 55% of the variance in PAM scores ($F(15, 868) = 25.59, p < 0.001$). Disease duration ($\beta = 0.16, p < .001$), embedded goal setting ($\beta = 0.16, p = .01$), embedded self-monitoring ($\beta = 0.16, p = .03$) and embedded discussions about the patients understanding of their condition ($\beta = -0.15, p < .001$) were the only statistically significant predictors in the model (Table 4).

Healthcare professionals attitudes to patient involvement in the care process

Healthcare professionals' mean score on the CS-Pam was 77.13 (SD = 13.99). No healthcare professionals scored within activation level 1 (patient should follow medical advice), 11 (9.40%) were within level 2 (patient can make independent judgments and actions) and 106 (90.60%) were in level 3 (patient is able to function as a member of the care team).

Healthcare professionals provision of self-management support

Almost 60% of the healthcare professionals were unable to offer a structured self-management support programme to their patients with arthritis. This was mainly due to a lack of staffing (n = 41, 35.00%) and funding (n = 20, 17.10%). Others reported not being aware of a suitable programme in their area (n = 14, 12%). Some had a preference to refer patients to other external agencies or organisations (n = 13, 11.1%) or to offer self-management support themselves on an individual basis (n = 3, 2.6%).

Whilst many healthcare professionals were unable to offer a structured approach to supporting their patients, self-management support was more likely to be embedded within standard care. All healthcare professionals surveyed agreed or strongly agreed that they provided information and education to their patients about their arthritis and its treatment (online supplementary material B). Over 90% agreed or strongly agreed that they worked collaboratively with their patients to set goals, develop plans of action, problem solve, help them acquire the necessary skills to manage their arthritis and, understand their arthritis and its treatment. Over 85% agreed or strongly agreed that they taught their patients how to monitor their arthritis and its treatment including the meaning of any blood tests and managing the emotional impact and stresses related to their arthritis. A multiple regression to explore whether CS-PAM scores, along with demographic characteristics could predict engagement in embedded self-management support was not statistically significant ($F(8, 108) = 1.69, p = 0.11$).

Differences between healthcare professionals and patients

Figure 1 demonstrates differences between healthcare professionals and patients on the degree to which the eight components of self-management support were felt to be

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embedded in standard care. Healthcare professionals on average agreed or strongly agreed that they worked with their patients to engage in all eight components of self-management support. Patients, on the other hand, disagreed that many of the eight components of self-management support were being offered to them during their routine consultations.

DISCUSSION

Self-management support should be integral to the care of people with arthritis (1). The mode in which this is implemented can differ from structured programmes delivered in secondary and primary care but outside of the outpatients setting to approaches that are embedded within routine care. There is limited data however, on the provision and uptake of self-management support by patients with arthritis in the UK. This survey found that only 15% of patients with arthritis had attended a structured self-management support programme. Possibly unsurprising given that 60% of rheumatology healthcare professionals were unable to offer a structured self-management support programme to their patients. Primarily because they were unable to staff or fund such services, which corresponds to the barriers to providing psychological support in arthritis (15). Attendance is an important indicator of reach (23), but despite evidence dating back to the 1980's (6) translation of evidence into UK practice appears to remain limited potentially due to the changes made to the commissioning of self-management programmes over 10 years ago.

One potential way of overcoming a lack of access to structured approaches is to embed self-management support into standard care. A model which has received recent attention in the literature (17;18). In fact, although the current study found that many healthcare professionals were unable to offer structured self-management support, they reported

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embedding self-management support into their routine clinic appointments. This shift from the provision of structured self-management programmes, 10 years ago, to embedded support may in part reflect the permeation of the self-management approach into clinical training and NHS priorities (24;25). This does however rely on the ability and preferences of individual clinician.

Although patients and healthcare professionals were not matched, data from this survey indicated that patients do not perceive receiving much self-management support in their clinical encounters, whilst healthcare professionals report providing high levels of support. This could indicate variation between clinicians on the self-management support offered within routine consultations, a lack of shared language between healthcare professionals and patients for self-management (26) and/or the inability of patients and/or healthcare professionals to accurately assess receipt or delivery of self-management support. When patients are able to engage with their healthcare team at a level of involvement consistent with their preferences they experience greater satisfaction with their care, are less depressed and have better health outcomes (27) therefore further investigation into the delivery and receipt of self-management support within the same clinical encounters is required. Given that this study found that embedding goal setting and self-monitoring into routine consultations was associated with greater knowledge, skills and confidence in patients' ability to self-manage, as opposed to attendance at a structured self-management support programme. This provides further justification for embedding self-management support into routine care.

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Recruitment of participants to this survey via online methods yielded a significant response from patients, highlighting the advantages of this approach. One of the strengths of this study is the large, national sample, however concerns have been raised about the representativeness of online research (28). It was however, not possible to estimate the number of people who received or saw the invitation to participate to assess representativeness, due to the online recruitment methods. There was a poorer response from healthcare professionals, and data is bias towards nursing and the allied health professions and those who are more interested in self-management support. The study was limited by its recruitment strategy, as individuals who join societies such as NRAS, may be those who actively seek information and support in relation to their condition. Other potential limitations relate to the questions aimed to measure engagement in embedded self-management support. We do not know how participants interpreted structured self-management support programmes and there may be other components of self-management that were not covered, particularly as we know that patients and healthcare professionals often hold different models of self-management (26). The measure was also developed specifically for this study, and although it contained good internal consistency we did not assess test-retest reliability or other forms of validity. Generalisability of the study outside of the UK is also not possible, given that importance and funding of self-management support differs by country.

Considering the emphasis placed on patient empowerment (24) and the integration of self-management support into the guidelines for managing arthritis (1;2), there seems to be some way to go before evidence has been translated into practice. Despite its long history and evidence base this survey revealed that the organisational changes made to the delivery

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and funding of self-management support in the UK means that only a small proportion of patients with inflammatory arthritis have attended a structured self-management support programme. From the healthcare professional perspective, it appears that self-management support is now more likely to be embedded within routine clinic appointments. When goal setting and self-monitoring were embedded into routine care this was associated with increased patient knowledge, skills and confidence to self-manage. Patients however, felt that this does not always occur, which raises concerns about the impact that this may have on their experience of care and the health outcomes of patients with arthritis.

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REFERENCES

- (1) Zangi HA, Ndosi M, Adams J, Andersen L, Bode C, Boström C et al. EULAR recommendations for patient education for people with inflammatory arthritis. *Ann Rheum Dis* 2015; 74: 954-62.
- (2) National Institute for Health and Care Excellence. Rheumatoid arthritis: the management of rheumatoid arthritis in adults CG79. 2009. London, NICE.
- (3) Barlow J, Wright C, Sheasby J, Turner A, Hainsworth J. Self-management approaches for people with chronic conditions: a review. *Patient Educ Couns* 2002; 48:177-87.
- (4) Dures E, Hewlett S. Cognitive-behavioural approaches to self-management in rheumatic disease. *Nat Rev Rheumatol* 2012; 8:553-9.
- (5) Mulligan K, Steed E, Newman S. Different types and components of self-management interventions. In: Newman S, Steed E, Mulligan K, editors. *Chronic Physical Illness: Self-Management and Behavioural Interventions*. Maidenhead: Open University Press; 2009. 64-77.
- (6) Lorig KR. Arthritis Self-Management: A Patient Education Program. *Rehabil Nurs* 1982; 7:16-20.
- (7) Riemsma RP, Taal E, Kirwan JR, Rasker JJ. Systematic review of rheumatoid arthritis patient education. *Arthritis Rheum* 2004; 51:1045-59.
- (8) Niedermann K, Fransen J, Knols R, Uebelhart D. Gap between short- and long-term effects of patient education in rheumatoid arthritis patients: A systematic review. *Arthritis Rheum* 2004; 51:388-98.

Arthritis self-management support: a national survey

(9) Astin JA, Beckner W, Soeken K, Hochberg MC, Berman B. Psychological interventions for rheumatoid arthritis: A meta-analysis of randomized controlled trials. *Arthritis Rheum* 2002; 47:291-302.

(10) Knittle K, Maes S, de Gucht V. Psychological interventions for rheumatoid arthritis: Examining the role of self-regulation with a systematic review and meta-analysis of randomized controlled trials. *Arthritis Care Res (Hoboken)* 2010; 62:1460-72.

(11) Warsi A, LaValley MP, Wang PS, Avorn J, Solomon DH. Arthritis self-management education programs: a meta-analysis of the effect on pain and disability. *Arthritis Rheum* 2003; 48:2207-13.

(12) Iversen MD, Hammond A, Betteridge N. Self-management of rheumatic diseases: state of the art and future perspectives. *Ann Rheu Dis* 2010; 69:955-63.

(13) Barlow JH, Cullen LA, Rowe IF. Educational preferences, psychological well-being and self-efficacy among people with rheumatoid arthritis. *Patient Educ Couns* 2002; 46:11-9.

(14) Dures E, Almeida C, Caesley J, Peterson A, Ambler N, Morris M et al. Patient preferences for psychological support in inflammatory arthritis: a multicentre survey. *Ann Rheu Dis* 2014; 75:142-7.

(15) Dures E, Almeida C, Caesley J, Peterson A, Ambler N, Morris M et al. A survey of psychological support provision for people with inflammatory arthritis in secondary care in England. *Musculoskeletal Care* 2014; 12:173-81.

(16) Koehn CL, Esdaile JM. Patient education and self-management of musculoskeletal diseases. *Best Pract Res Clin Rheumatol* 2008; 22:395-405.

(17) Dures E, Hewlett S, Ambler N, Jenkins R, Clarke J, Gooberman-Hill R. Rheumatology clinicians' experiences of brief training and implementation of skills to support patient self-management. *BMC Musculoskelet Disord* 2014; 15:108.

Arthritis self-management support: a national survey

- (18) Dures E, Hewlett S, Ambler N, Jenkins R, Clarke J, Gooberman-Hill R. A qualitative study of patients' perspectives on collaboration to support self-management in routine rheumatology consultations. *BMC Musculoskelet Disord* 2016; 17:129-37.
- (19) Smartline International Ltd. Smart-Survey™. 2002. Gloucester.
- (20) Hibbard JH, Mahoney ER, Stockard J, Tusler M. Development and Testing of a Short Form of the Patient Activation Measure. *Health Serv Res* 2005; 40:1918-30.
- (21) Hibbard JH, Stockard J, Mahoney ER, Tusler M. Development of the Patient Activation Measure (PAM): conceptualizing and measuring activation in patients and consumers. *Health Serv Res* 2004; 39:1005-26.
- (22) Hibbard JH, Collins PA, Mahoney E, Baker LH. The development and testing of a measure assessing clinician beliefs about patient self-management. *Health Expect* 2010; 13:65-72.
- (23) Moore GF, Audrey S, Barker M, Bond L, Bonell C, Hardeman W et al. Process evaluation of complex interventions: Medical Research Council guidance. *BMJ* 2015; 350:h1258.
- (24) Department of Health. NHS Outcomes Framework for 2016-17. London, Department of Health; 2016.
- (25) NICE. Quality standards for rheumatoid arthritis. London, National Institute for Health and Care Excellence; 2013.
- (26) Sadler E, Wolfe CD, McKevitt C. Lay and health care professional understandings of self-management: A systematic review and narrative synthesis. *SAGE Open Med* 2014; doi: 10.1177/2050312114544493.
- (27) Kiesler DJ, Auerbach SM. Optimal matches of patient preferences for information, decision-making and interpersonal behavior: evidence, models and interventions. *Patient Educ Couns* 2006; 61:341.

Arthritis self-management support: a national survey

(28) Whitehead LC. Methodological and ethical issues in Internet-mediated research in the field of health: an integrated review of the literature. Social Science & Medicine 2007; 65:782-91.

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Table 1. Patient characteristics

Characteristics	n(%)
Age, m(SD)	56.84(11.10)
Gender	
Female	735(83.10)
Male	150(16.90)
Condition†	
Rheumatoid arthritis	841(95.00)
Osteoarthritis	145(16.40)
Fibromyalgia	74(8.40)
Osteoporosis	57(6.40)
Psoriatic arthritis	33(3.70)
Lupus or Ankylosing Spondylitis	11(1.20)
Juvenile idiopathic arthritis	11(1.20)
Sjögren's	11(1.20)
Inflammatory arthritis	10(1.10)
Seronegative arthritis	8(0.90)
Gout	7(0.80)
Polymyalgia rheumatica	5(0.60)
Osteopenia	4(0.50)
Lumbar spinal stenosis	3(0.30)
Hypermobility syndrome	1(0.10)
Palindromic rheumatism	1(0.10)

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Characteristics	n(%)
Sciatica	1(0.10)
Degenerative disc disease	1(0.10)
Mixed connective tissue disease	1(0.10)
Marfan syndrome	1(0.10)

† Self-reported and more than 1 rheumatological condition could be selected

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Table 2. Healthcare professional characteristics

Profession	n(%)
Nurse Practitioner	55(47.00)
Occupational Therapist	19(16.20)
Rheumatologist	18(15.40)
Physiotherapist	12(10.30)
Podiatrist	6(5.10)
Clinical Nurse Specialist in Rheumatology	3(2.70)
Pharmacist	1(0.90)
Clinical Trials Coordinator	1(0.90)
Research Practitioner	1(0.90)
Practice Nurse	1(0.90)

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Table 3. Location of self-management programme attendance

Location	n(%)
Within rheumatology services at hospital	78(59.10)
Charity	27(20.45)
A local patient group	16(12.12)
GP service	9(6.82)
Expert patient programme (EPP)	9(6.82)
Self-taught	1(0.76)
COPERS† course	1(0.76)

† COPERS: coping with persistent pain, effectiveness research into self-management

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Table 4. Multiple regression model for patient PAM scores

	Standardized		
	β	t	p
	Coefficients		
(Constant)		7.70	0.00
Age	0.01	0.24	0.81
Gender	-0.01	-0.46	0.65
Disease duration (years)	0.16	5.54	0.00
Methotrexate use	-0.05	-1.78	0.08
Rheumatoid arthritis	0.00	0.04	0.97
Psoriatic arthritis	-0.02	-0.47	0.64
Attendance at a structured self-management programme	0.05	1.82	0.07
A member of the rheumatology team has provided me with information and education about my arthritis and its treatment	-0.02	-0.46	0.65
I work collaboratively with members of the rheumatology team to set goals about how I manage my arthritis and its treatment	0.15	2.65	0.01
I work collaboratively with members of the rheumatology team to develop actions plans about how I manage my arthritis and its treatment	-0.01	-0.17	0.86
I work collaboratively with members of the rheumatology team to solve any problems I have about my arthritis and its	0.09	1.86	0.06

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	Standardized		
	β	t	p
	Coefficients		
treatment			
A member of the rheumatology team has taught me the skills	0.06	1.23	0.22
I need to manage my arthritis and its treatment			
A member of the rheumatology team has taught me how to			
monitor my arthritis and its treatment, including the	0.10	2.19	0.03
meaning of any tests I have			
I have discussed what I understand about my arthritis and its			
treatment with a member of the rheumatology team	-0.15	-3.63	0.00
A member of the rheumatology team has helped me manage			
my emotions and any stress I have experienced in relation to	0.08	1.88	0.06
my arthritis and its treatment			

Figure legend

Figure 1. Receipt and delivery of embedded self-management support (mean scores)

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