coefficient these changes were not statistically significant, suggesting potential confounders (table 2). While women had worse baseline and 2-year WOMAC pain and function scores (all $p \leq 0.04$), this difference was not significantly influenced by neighborhood LEP (all pinteraction NS).

Methodology: Categorical variables are summarized as frequency (percent). Continuous variables are summarized as mean $\pm$ standard deviation

Methodology: Univariate and multivariable linear mixed-effects models were analyzed, with census tracts treated as random effects. In addition to neighborhood Limited English Proficiency; variables included in the model were: age, BMI, sex, ≥ 1 comorbidity; neighborhood percent poverty ($<10\%$, $10\% - <20\%$, $20\% - <30\%$, $30\% - <40\%$, $\geq 40\%$ [reference group]), neighborhood Gini coefficient was also included.

Table 1. Total Joint Replacement Patient characteristics

Characteristic	Total Hip Replacement (N=4009)	Total Knee Replacement (N=3898)
Patient demographics		
Age at surgery (years), mean $\pm$ SD	65.6 $\pm$ 10.6	67.8 $\pm$ 9.5
Sex: female, n (%)	2180 (53.9%)	2346 (60.2%)
BMI (kg/m ²)	27.9 $\pm$ 5.4	30.0 $\pm$ 5.9
Race, n (%)		
White	3794 (94.6%)	3568 (91.5%)
Black	131 (3.3%)	174 (4.5%)
Asian	25 (0.6%)	74 (1.9%)
Other	43 (1.1%)	56 (1.4%)
Unknown	16 (0.4%)	26 (0.7%)
Hispanic ethnicity, n (%)	102 (2.5%)	129 (3.3%)
Patient status		
ASA class		
I-II	3307 (82.5%)	3124 (80.1%)
III-IV	700 (17.5%)	773 (19.8%)
One or more comorbidities	895 (22.3%)	1057 (27.1%)
Census tract characteristics		
Poverty, n (%)		
$<10\%$	3325 (82.9%)	2787 (71.5%)
$10\% - <20\%$	507 (12.7%)	511 (13.1%)
$20\% - <30\%$	115 (2.9%)	129 (3.3%)
$30\% - <40\%$	49 (1.2%)	56 (1.4%)
$\geq 40\%$	13 (0.3%)	27 (0.7%)
Percent poverty, mean $\pm$ SD	6.2 $\pm$ 6.5	6.8 $\pm$ 7.2
Limited English Proficiency (LEP), n (%)		
$<10\%$	2981 (74.4%)	2787 (71.5%)
$10\% - <20\%$	614 (15.3%)	650 (16.7%)
$20\% - <30\%$	209 (5.2%)	251 (6.4%)
$30\% - <40\%$	120 (3.0%)	113 (2.9%)
$\geq 40\%$	85 (2.1%)	97 (2.5%)
Percent LEP, mean $\pm$ SD	8.6 $\pm$ 9.6	9.2 $\pm$ 10.0
Ours coefficient, mean $\pm$ SD	0.45 $\pm$ 0.07	0.45 $\pm$ 0.07
Patient-reported outcome		
Baseline survey results, mean $\pm$ SD		
WOMAC pain	53.3 $\pm$ 17.8	54.4 $\pm$ 17.3
WOMAC function	49.5 $\pm$ 18.0	53.7 $\pm$ 17.6
2-year survey results		
WOMAC pain, mean $\pm$ SD	53.7 $\pm$ 11.3	57.9 $\pm$ 15.6
WOMAC function, mean $\pm$ SD	51.1 $\pm$ 13.1	55.6 $\pm$ 18.1

Methodology: Categorical variables are summarized as frequency (percent). Continuous variables are summarized as mean $\pm$ standard deviation

Table 2. Impact of every 10% change in neighborhood limited English proficiency on WOMAC pain and function

Time-point	WOMAC pain Estimate $\pm$ SE	p-value	WOMAC function Estimate $\pm$ SE	p-value
Total Hip Replacement				
Baseline (Univariate)	-1.4 $\pm$ 0.3	<0.001	-1.7 $\pm$ 0.3	<0.001
2-year (Univariate)	-0.9 $\pm$ 0.2	<0.001	-1.2 $\pm$ 0.2	<0.001
Baseline (Multivariable)	-0.6 $\pm$ 0.3	0.10	-0.8 $\pm$ 0.3	0.07
2-year (Multivariable)	-0.4 $\pm$ 0.2	0.054	-0.6 $\pm$ 0.3	0.01
Total Knee Replacement				
Baseline (Univariate)	-1.7 $\pm$ 0.3	<0.001	-1.8 $\pm$ 0.3	<0.001
2-year (Univariate)	-1.0 $\pm$ 0.3	<0.001	-1.1 $\pm$ 0.3	<0.001
Baseline (Multivariable)	-0.8 $\pm$ 0.3	0.02	-0.5 $\pm$ 0.3	0.13
2-year (Multivariable)	-0.2 $\pm$ 0.3	0.43	-0.2 $\pm$ 0.3	0.54

Methodology: Univariate and multivariable linear mixed-effects models were analyzed, with census tracts treated as random effects. In addition to neighborhood Limited English Proficiency; variables included in the model were: age, BMI, sex, ≥ 1 comorbidity, neighborhood percent poverty ($<10\%$, $10\% - <20\%$, $20\% - <30\%$, $30\% - <40\%$, $\geq 40\%$ [reference group]), neighborhood Ours coefficient was also included.

Conclusions: Patients coming from neighborhoods with lower english proficiency have worse pain and function scores in unadjusted models. However when adjusted for potential confounders, the difference is not significant. Community factors which contribute to healthcare disparities are multidimensional, prospective studies collecting individual LEP data would be warranted to study this aspect in detail.

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FRI0612

HOW EFFECTIVE ARE INTERVENTIONS TARGETING PATIENT ACTIVATION IN PEOPLE WITH LONG TERM PHYSICAL CONDITIONS? A SYSTEMATIC REVIEW

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Background: Patient activation is an increasingly referenced concept in the self management of long term physical conditions. It refers to someone's ability to take an active role in self-managing their health. There has been a substantial increase in the number of studies trailing interventions targeting patient activation in a variety of formats. The findings from this review will contribute to maximising the impact of current rheumatology interventions, and to increase the understanding of patient activation to develop a framework to describe its core components within a rheumatology context.

Objectives: This study aimed to identify the effectiveness of interventions targeting patient activation in people with long-term conditions, including rheumatoid arthritis.

Methods: Studies that were randomised control trials of interventions targeting patient activation in adults with long term physical conditions were included in the review. PsycINFO, Medline, AMED, CINAHL, and ProQuest were searched during January 2017, as well as a variety of grey literature locations, snowballing and hand-searching to identify potential studies for inclusion. The Cochrane Collaboration's Risk of Bias Tool was used to determine the methodological quality of included studies, and any differences were resolved by the two reviewers. Authors were contacted if any additional information was required to extract data or to clarify risk of bias.

Results: 17 papers were included in the review. There was a great deal of heterogeneity in the types of interventions available targeting patient activation in a variety of populations, and a meta-analysis was not possible as a result. Interventions were delivered via face to face, telephone, internet and resource-based approaches. The studies also included a mix of group and individually delivered interventions. Outcome measures used also varied, including both direct and proxy measures for patient activation.

The findings suggest that in studies with interventions that are more structured, there appear to be a trend towards differences in patient activation scores between groups in favour of the intervention. It is possible that these increases in patient activation may occur with an increase in health literacy, as the literature suggests an association between the two constructs. This is discussed in terms of a proposed model for patient activation for rheumatology.

Conclusions: There is some initial evidence for the benefit of increasing structure in interventions targeting patient activation. There is no evidence for a medium of delivery that is most effective in people with long term conditions. Studies would benefit from reporting information about engagement and adherence to interventions to understand the mechanisms behind engaged participants becoming more active in managing their health. There is a need for increased research into patient activation within Rheumatology.

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FRI0613

USEFULNESS OF SMARTPHONES APPLICATIONS IN THE FOLLOW-UP OF PATIENTS WITH INFLAMMATORY RHEUMATOLOGICAL DISEASES: ARE THEY REALLY BENEFICIAL IN OBJECTIVE TERMS?

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Background: The use of computer programs developed for their use through smartphones has been incorporated into the health field. In recent years there have been countless new applications aimed at easing the work of the clinician through access to commonly used tools, image atlases, real-time information or to facilitate the monitoring of patients. In this last group, there are different applications oriented to multiple purposes.

Objectives: The aim of this study is to assess the performance of two personally developed applications for the follow-up of patients with gout and rheumatoid arthritis (ReumApp-Gota and ReumApp-AR).

Methods: We surveyed 65 patients who were users of ReumaApp-Gota and 35 patients who were users of ReumaApp-AR. All were direct users with at least 6 months of experience with the application. Both applications were developed by the author of the work on a free distribution platform and whose extension and

contents have been discussed in a previous abstract. The survey was completed upon request and in the presence of the reference clinician throughout the last quarter of 2017. The survey assessed three areas: therapeutic and hygienic-dietetic adherence, the perception of personalized follow-up and overall practical utility. In parallel, the number of annual attacks of patients using ReumaApp-Gota and the relative annual reduction of the uric acid level in peripheral blood were determined. In the case of patients using ReumaApp-AR, the demand for unscheduled visits due to flares of RA and the relative reduction of DAS28 were evaluated. In both cases, their results were compared with cohorts of patients who had not used any of the applications (35 of the drop group and 29 of the AR group).

Results: Users of ReumAPP-Gota: Improvement in adherence 25/65, personalized follow-up is perceived 56/65, has utility in day-to-day 52/65. Users of ReumAPP-AR: Improve adherence 31/35, personalized follow-up is perceived 30/35, has utility in day to day 29/35. The number of annual gout attacks in patients users of the APP was 1.32 OF 0.45 and that of non-users was 1.27 OF 0.52 ($P=0.848$), the relative annual reduction of patients with gout users of the APP was 36.6 OF 6.6 % and that of non-users 33.7 of 11.2% ($P=0.106$). The number of urgent visits in a year of patients with RA users of the APP was 0.55 of 0.12 and that of the non-users group 0.83 of 0.29 ($P<0.001$). The relative reduction of the DAS28 of patients using the APP was 34.9 of 5.9% and of the non-users was 31 of 7.7% ($P<0.025$).

Conclusions: Although the use of applications for smartphones seems to generate a greater sense of medical vigilance on the part of patients and is globally considered useful, its impact on the therapeutic adherence in patients with gout is low and is reflected in the objective results of reduction of plasma uric acid figures and the number of annual attacks. In the case of patients with RA the use of the application significantly reduces the need for urgent visits, most likely because it allows the clinician to contact the patient priorly when certain parameters entered exceed certain margins. But on the other hand the relative reduction of DAS28 may be due to the fact that patients not users of the application are usually older than those who accept its use.

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FRI0614 PHYSICIAN-PATIENT INTERACTIONS IN AFRICAN AMERICAN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: African American (AA) patients with systemic lupus erythematosus (SLE) are at high risk for poor outcomes. Patient characteristics and disease severity influence physician-patient interactions, which in turn can impact outcomes.

Objectives: Examine the relationships between physician-patient interactions and demographics, disease activity, and depression in AA SLE patients.

Methods: The Georgians Organized Against Lupus (GOAL) is a population-based cohort of patients with a documented diagnosis of SLE. We conducted a cross-sectional analysis of patient-reported data among 698 AA participants (out of 863 GOAL participants). We assessed patients reports of physician-patient interactions (communication, patient-centered decision making, and physician interpersonal style) through the Interpersonal Processes of Care survey (IPC-29), disease activity through the Systemic Lupus Activity Questionnaire, and depression through the Patient Health Questionnaire-9. We used non-parametric tests to assess IPC-29 by demographics, linear trend test to assess demographic-adjusted scores of IPC-29 by disease activity and depression, and multivariate logistic regression to assess the association of disease activity and depression with suboptimal IPC scores.

Results: Lowest IPC-29 scores were for patient-centered decision making, specifically for the "asked patient" subdomain (how often doctors assessed patients' problems to follow recommendations and treatment) in women compared with men (mean score 3.1 ± 1.4 and 3.6 ± 1.4 , respectively; $p=0.02$). Scores for the "assumed socioeconomic level" subdomain (how often doctors make assumptions about a patient's socioeconomic level) in the interpersonal style domain were higher (worse) in patients aged 18–34 (mean score 1.6 ± 0.9), compared to those aged 35–55 (mean score 1.5 ± 0.9 ; $p=0.03$). Patients with higher educational attainment ($\geq$ college) reported poorer mean scores for most communication and interpersonal style scales than those with $\leq$ high-school. We found significant linear trends of poorer scores for all communication scales across more severe

disease activity and depression, and poorer scores for all interpersonal style scales across more severe disease activity. Neither disease activity nor depression was associated with worse patient-centered decision-making. In multivariate models depression was associated with suboptimal quality of communication (OR 1.2; 95% CI 1.04–1.4) and interpersonal style (OR 1.1; 95% CI 1.0–1.3); and disease activity increased the odds of suboptimal communication (OR 1.1; 95% CI 1.0–1.3).

Conclusions: In AA patients with SLE, perceptions of physicians' communication, shared decision-making, and physicians' interpersonal style vary by sex and education. While disease activity and depression were associated with worse reports of physician-patient communication and interpersonal style, neither disease activity nor depression influenced shared-decision making. Our data suggest that in addition to standard of care treatment, AA SLE patients with active disease and depression might need provider-based interventions focused on communication and interpersonal style.

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FRI0615 NORMALISED TOXICITY TO PREGABALIN DID NOT INCREASE WITH CHANGES IN APPROVAL MECHANISM AND USE IN AUSTRALIA

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Background: Pregabalin is a potent antagonist of neuronal voltage-gated calcium channels used to treat neuropathic pain. Although first registered with the Therapeutic Goods Administration (TGA) in April 2005, rapid uptake of pregabalin in the Australian market only came after its listing on the Pharmaceutical Benefits Scheme (PBS) with a streamlined code on 1st March 2013 for the indication of neuropathic pain. Recently, there has been concern raised about the growing off-label use of pregabalin for chronic pain syndromes and the subsequent potential for undue adverse drug reactions (ADRs).¹

Objectives: The aim of this study was to measure how broadening access to pregabalin in Australia affected the rate of pregabalin-associated ADRs, and whether such an effect was disproportionate to the change in pregabalin prescription rates.

Methods: We extracted ADRs reported in the TGA Database of Adverse Event Notifications (DAEN) between 1st January 2009 and 18th October 2017, in which pregabalin was thought to have been causative. We also extracted calls to the Victorian Poisons Information Centre (VPIC) between 1st January 2009 and 31st December 2017 in which pregabalin was a reported exposure. For both databases, ADR rates were annualised, with the missing DAEN ADR reports between 19th October 2017 and 31st December 2017 imputed using a linear model based on year-to-date ADR rates. The annual ADR rates were normalised by dividing by the estimated number of pregabalin prescriptions filled (in millions), to obtain a normalised Toxicity Index (number of ADRs per million scripts). Because the data was annualised, the 1st January 2013 was used as the approximate starting date of PBS streamlined listing.

Results: The estimated number of pregabalin prescriptions filled in Australia increased over the study period from 155,336 in 2009 to 3,739,421 in 2017. A total of 886 ADRs were reported to VPIC over the study period, and 1056 reported to DAEN (1076 after extrapolation). The mean Toxicity Index (TI) for the VPIC database was 539 ADRs/million scripts before PBS streamlined listing, and 298 ADRs/million scripts after; there was no evidence that the TI had increased ($p=0.9$, one-tail t-test). Similarly, the TI for the DAEN database was 441 ADRs/million scripts prior to PBS streamlined listing, versus 85 ADRs/million after; there was no evidence that TI increased ($p=0.98$, one-tail t-test).