

$p < 0.01$ ), and low Health Expenditure per capita ( $r = 0.61$ ,  $p < 0.01$ ); the age of RAO did not correlate with nT. A significant linear regression equation was found [ $F(2,32) = 13.61$ ,  $p < 0.01$ ,  $R^2 = 0.46$ ] in the age of RAO, Health Expenditure per capita ( $\beta = 0.0007$ ; CI 95% 0.00004 to 0.001) and PM10 levels ( $\beta = -0.044$ ; CI 95% -0.085 to -0.002).

**Conclusions:** The tropospheric pollutant PM10 and the components of the Health Expenditure per capita such as the provision of health services, family planning activities and nutrition activities are variables worth to further study through hypothesis-testing designs.

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### AB1137 THE ROLE OF SOCIAL DETERMINANTS ON THE PREVALENCE OF RHEUMATIC DISEASES IN LATIN AMERICA. A MULTILEVEL COPCORD STUDY

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**Objectives:** To determine the impact of individual and regional variables on the geographic distribution of RD across six Latin-American countries

**Methods:** This is a secondary multilevel analysis of cross-sectional data of COPCORD studies that investigated the prevalence of RD in Argentina, Colombia, Ecuador, México, Peru, and Venezuela. Individual factors were sex, age, comorbidities, job status, and Health Assessment Questionnaire (HAQ) score. Contextual level variables were country and subject's identification as indigenous. RD predictors, including individual and regional variables, particularly indigenous status were identified with logistic regression models. The effect of contextual variables was estimated with median odds ratio's (OR) estimation.

**Results:** Most individuals included in this analysis came from urban areas (82.40%); their mean age was 43.12 years (95% CI 43.01-43.35); and 56.0% were women. Nearly all of them reported >1 comorbidity (94.70%) and 72.19% were economically active. The prevalence of any RD varied from 1.55% in Peru to 26.09% in Argentina. The mean prevalence of Rheumatoid Arthritis (RA) was 1.58 (range 0.64 to 2.47) (table 1). Aside comorbidities, individual level variables associated to any RD were sex (OR: 1.35; 95% CI 1.28-1.43), age (OR: 1.02; 95% CI 1.01-1.03), and HAQ score (OR: 3.71; 95% CI 3.22-4.28). Crude comparisons showed significant variations among countries ( $p < 0.01$ ) and indigenous groups (OR: 1.69; 95% CI 1.58-1.81). These findings were confirmed by adjusted analysis (Median OR 1.26; 95% CI 1.14-1.38) (table 2).

Table 1. General prevalences and sample sizes across countries

Country	n	%	Prevalence %			
			Any RD	RA	OA	Fibromyalgia
Argentina	1656	3.94	26.09	2.42	3.86	0.06
Colombia	6734	16.01	6.53	0.64	5.18	0.25
Ecuador	4877	11.60	13.2	0.88	10.58	2.05
Mexico	22175	45.69	18.34	2.47	12.01	0.82
Peru	1095	2.60	1.55	0.65	0.55	0.09
Venezuela	5512	9.45	14.94	0.9	16.47	0.38
Total/General	42049	100.00	16.00	1.58	10.42	0.77

Table 2. Individual and contextual factors associated to any RD

Any rheumatic diseases	OR	p	95% IC	
Any comorbidities	1,676	<0,001	1,542	1,821
Age (yrs)	1,019	<0,001	1,017	1,022
HAQ	2,456	<0,001	2,240	2,693
Schooling level	0,970	<0,001	0,962	0,978
	MOR*	p	95% IC	
Indigenous vs. Non-indigenous	1,266	0,015	1,146	1,386

**Conclusions:** There common factors associated to the prevalence of RD in the

region, however, the estimation of its impact varies in significant way across countries and related to the fact of belong to an indigenous group indicating an increase in the estimated ORs.

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### AB1138 ENGAGEMENT IN A UK SMARTPHONE STUDY EXAMINING THE ASSOCIATION BETWEEN WEATHER AND PAIN: PRELIMINARY RESULTS FROM CLOUDY WITH A CHANCE OF PAIN

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**Background:** Smartphones can facilitate collection of temporally-rich self-reported data, and have proven to enable large recruitment. However, their viability to support epidemiological research is uncertain due to concerns about selection bias and unsustainable engagement.

**Objectives:** To examine the characteristics and engagement of participants in the first six months of Cloudy with a Chance of Pain, a UK smartphone-based study investigating the link between the weather and chronic pain.

**Methods:** Between 20th of January and 29th of February 2016, we recruited UK residents 17 years or older with chronic pain ( $\geq 3$  months) who owned a smartphone. Participants received prompts from an app developed by uMotif, which they used to daily report the severity of ten pain-related symptoms. Of those who enrolled, those eligible for analysis provided sufficient baseline data to confirm they were  $\geq 17$  years old, and at least one symptom. The characteristics of those who were eligible were examined. Engagement per day was defined based on whether participants had completed any of the ten symptoms. Participants were then clustered by their engagement over time using a first-order hidden Markov models. Participant characteristics were then compared between the clusters.

**Results:** Of 7972 people who registered to participate, 6370 were eligible. 81% of participants were female, with a mean age of 49 years (SD 12.9). The most common diagnosis was arthritis (40% type unspecified, 19% rheumatoid arthritis), followed by fibromyalgia/chronic widespread pain (24%) and "other pain diagnosis" (23%). We identified four clusters of engagement: high (14%), moderate (22%), low (39%) and tourists (25%). Median days of data entry ranged from 1 (1-1) to 175 (IQR: 152-177) for the tourist and high engagement clusters respectively. Those in the high and moderate clusters ( $n = 2249$ , 35%) engaged on at least 50% of days in the study (high: 79%; moderate: 50%). Highly engaged participants were older (median 56 (47-63)) when compared to those who were low engagers (47 (39-57)) or tourists (49 (40-58)). A lower proportion of tourists were women (76% (95% CI: 74-78)), than in any other cluster (high: 82% (80-85), moderate: 84% (82-86), low: 81% (79-82)).

**Conclusions:** Cloudy with a Chance of Pain recruited a large sample of people with chronic pain, of whom over one in three participants engaged in smartphone-based symptom reporting for at least 50% of days in the first six months. Smartphone studies enable quick mass participation with sustained daily data entry, providing unprecedented volumes of daily data. While there may be selection bias towards older females in our study, younger men are also less likely to participate in studies using traditional data collection methods. Our study suggests that smartphones could provide a viable alternative to traditional data collection methods.

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### AB1139 AUTOANTIBODY AGAINST COMPLEMENT COMPONENT 1Q SUBCOMPONENT IS ASSOCIATED WITH THE PATHOGENESIS OF RECURRENT PREGNANCY LOSS

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**Background:** In recurrent pregnancy loss (RPL), the pathogenesis of the majority of cases remains to be explained. Antiphospholipid syndrome (APS) is one