

and 3% another specialty. 30% had an early arthritis care center at their workplace, 71% had an infusion unit, 17% had ultrasound, 23% had a densitometer, 17% had a resonator and 9% had X-rays, however, most work in collaboration. 30% have training in ultrasound and 9% are in training period, 75% have training in reading densitometry and 2% in training period, 54% have training in resonance reading and 11% in training period. The average satisfaction with practice as a rheumatologist was 5/7, career options/professional growth 4/7, geographic location 5/7, income 4/7, job security 4/7, colleagues and co-workers 5/7. 33% had an annual compensation of <19,000 US dollars. Only 58% have malpractice insurance and 87% have medical insurance. 40% present at least one clinical comorbidity.

**Conclusion:** The majority of rheumatologists in the region who responded were female and feel satisfied with their clinical practice. This survey shows a low level of income for the region, however, more data should be obtained. This is the first study of its kind in Latin America, being an initiative for similar projects.

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SAT0583

#### DEVELOPMENT AND TESTING OF A SMARTPHONE APPLICATION TO SELF-MONITOR DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS

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**Background:** Several mobile applications (apps) exist to monitor symptoms of rheumatoid arthritis (RA), but high-quality apps are lacking.<sup>1</sup> We developed an app with patients, following the Medical Research Council guidance for developing and evaluating complex interventions.<sup>2</sup> The app facilitates telemonitoring through a weekly MDHAQ/RAPID3<sup>3</sup> questionnaire and has been integrated with the local electronic medical record.

**Objectives:** To evaluate the users' satisfaction, usability and engagement of the application, as a first and preparatory step toward the ultimate goal of telemonitoring and self-initiated care.

**Methods:** In a first, one month, pilot study 42 RA patients used the app. User's satisfaction was measured using an 11-point Likert scale. Usability was measured using the three concepts of the Technology Acceptance Model (TAM).<sup>4</sup> According to TAM, perceived usefulness (PU), perceived ease of use (PEOU), (behavioral) intention to use (ITU) predict how and when a product will be used. The PU and PEOU were measured using the system usability scale (0-100). A score of 68, or higher, indicates sufficient system usability.<sup>5</sup> The ITU was measured on a 11-point Likert scale. Engagement was measured by the percentage of patients completing all weekly questionnaires. General feedback was collected and implemented.

In a second, one month, pilot study, the improved app was evaluated in 24 RA patients using 5 themes derived from the Mobile App Rating Score<sup>6</sup>: "engagement", "functionality", "aesthetics", "information" and "subjective quality." Participants rated the questions on a 5 - point Likert scale. All responses were categorized into three categories: negative (1-2), neutral (3) and positive (4-5). Afterwards, nine participants (three users, three dropout users, and three non-users) agreed to participate in a semi-structured interview to get feedback on the App.

**Results:** In the first study, the ReumaMeter scored an overall median score of 8.0 (interquartile range (IQR) 7.0-9.0), a mean system usability score of 76 (SD 14.8) and participants intended to keep using the ReumaMeter in the future (median 7.0, IQR 5.0-9.0). Engagement decreased to 61% in week 4. During the second study, the number of positive responses for each category was at least twice as high as the number of negative responses (Figure 1). Feedback that emerged during the interviews matched these responses. In addition, several participants stated that app usage declined due to low disease activity.

**Conclusion:** The participants' overall feedback was positive in terms of users' satisfaction and usability. Engagement dropped, which may be due to lack of internal triggers to measure disease activity when patients are in remission. To assess the overall impact of the app on RA patient care, a randomized controlled trial is planned.

#### REFERENCES

- [1] Grainger R, et al. JMIR Mhealth Uhealth. 2017. 2:e7.
- [2] Craig P., et al. BMJ. 2008. doi:10.1136/bmj.a1655
- [3] Pincus, T.et.al. The Journal of Rheumatology. 2008. 35,2136-37.
- [4] Davis, F.D. MIS Quarterly. 1989. 13(3):319-339.
- [5] Bangor, A. International Journal of Human-Computer Intervction. 2008. 24 (6) 574-594.
- [6] Stoyanov, S.R., et al. JMIR Mhealth Uhealth, 2015. 3(1): p. e27.

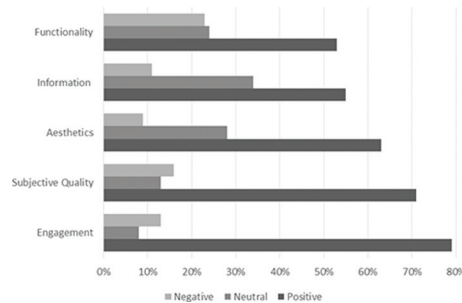


Figure 1. Qualitative results of app-evaluation - 79% of participants responding

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#### POORER OUTCOMES AND HIGHER HEALTHCARE UTILIZATION AFTER TOTAL HIP ARTHROPLASTY IN PATIENTS WITH LUPUS

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**Background:** Hip osteonecrosis and hip osteoarthritis are common causes of severe hip disease in lupus (1), both treated successfully with a total hip arthroplasty (THA). A recent systematic review of arthroplasty outcomes reported that the risk of overall complications post-THA was higher than in patients with lupus compared to those without lupus (2). However, no analyses were provided for specific outcomes such as infection, revision or associated health care utilization.

**Objectives:** To assess the risk of specific post-THA outcomes, i.e., infection, transfusion, revision and mortality and associated health care utilization, associated with lupus.

**Methods:** We used the 1998-2014 U.S. National Inpatient Sample data. Multivariable-adjusted separate Cox proportional hazard regression models assessed the association of lupus with post-operative complications (infection, transfusion, THA revision and mortality) and health care utilization outcomes (total hospital charges, discharge to inpatient facility, length of hospital stay) post-THA, adjusting for demographics, underlying diagnosis, comorbidity, insurance payer, and hospital characteristics, using hazard ratios (HR) and 95% confidence intervals (CI).

**Results:** Among 4,116,485 primary THA hospitalizations, 22,557 (0.5%) were in lupus patients. Patients with lupus were younger, more likely to be female, African-American or Hispanic and, have higher comorbidity, Medicaid insurance payer, lower income, or living in the South. In multivariable-adjusted analyses, lupus was associated with a significantly higher risk of infection, transfusion, hospital charges above the median