will inform the development of informational approaches to support family communication and access to FDRs.

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POS1484-HPR THE ASSOCIATION OF STIGMA WITH DISEASE VARIABLES IN PATIENTS WITH FIBROMYALGIA (FM)

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Background: Stigma, defined as social devaluation of an individual, can be an important stressor for chronic pain patients [1]. Not every condition is stigmatized. A relevant factor for illness stigmatization seems to be whether the cause is mental-behavioural or physical. Chronic pain is often regarded as an imaginary illness or caused by psychological problems [2]. Sources of stigma for chronic pain patients are perceived negative attitudes from family members, the general public, and physicians [1].

Objectives: To assess perceived stigma and the associations with disease variables in a cohort of patients with FM.

Methods: We invited 18 FM self-help groups in Germany to participate anonymously in our survey, and we sent the survey battery to 192 potential participants via postal mail. To measure perceived stigma, we used the Chronic Pain Stigma Scale (CPSS) developed by Reed [3], which has 30 items and 3 subscales (public, physicians, family). We also assessed sociodemographic characteristics, disease related variables (e.g., pain, stress, depression, anxiety), and other health-related factors, including health related quality of life [Healthy Days Core Module (CDC HDQOL-4)], disease specific impact (FIQ), fear avoidance belief questionnaire (physical activity subscale) (FABQ-PA), pain catastrophizing scale (PCS) and pain self-efficacy questionnaire (PSEQ).

Results: In total 162 FM patients participated (=84% response rate). Their mean age was 58 years (SD=10), 84% (N=135) were female. Highest level of education was: Elementary School 29%, Junior High School 35%, High School 15%, College 12%, and other 10%. Duration of chronic pain was 18.2 years (SD=12.0). There was no significant gender difference in the stigma subscales, nor was there an association with duration of chronic pain. Table 1 presents the significant Pearson correlations.

Table 1. Correlations of CPSS stigma subscales with health variables.
* $p < .05$; ** $p < .01$; ns=not significant.

	CPSS-public	CPSS-physician	CPSS-family
Regional pain scale	ns	.19*	.20*
VAS pain today	ns	ns	Ns
FIQ	.20*	.16*	.22**
HADS-anxiety	.37*	.20*	.24*
HADS-depression	.41**	.16*	.25**
CDC-HDQOL-4			
General health	.19*	.18*	.22**
Physical health	.19*	ns	ns
Mental health	.20*	ns	.21*
Impairment	.24*	ns	ns
Perceived stress scale	.44**	.24**	.37**
FABQ-PA	ns	-.17*	ns
PCS	.21*	ns	ns
PSEQ	.19*	ns	.18*

Conclusion: Perceived stigma in our FM patient cohort has an important impact on a variety of different disease variables including mental and general health, physical functioning, and on pain coping. Stigmatizing attitudes perceived from the general public exhibited the greatest association with most variables in our chronic pain patients. Perceived stigma from physicians and the family were also related to negative disease consequences in our FM patients. To conclude, we assert that

assessing and addressing multi-source perceived stigmatization in routine clinical care may improve the management and wellbeing of patients with FM.

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POS1485-HPR PATIENTS' PERSPECTIVE ON CONTINUATION VERSUS TEMPORARY INTERRUPTION OF IMMUNOMODULATORY AGENTS DURING INFECTIONS IN PATIENTS WITH IMMUNE-MEDIATED INFLAMMATORY DISEASES: AN INTERVIEW STUDY

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Background: Immune mediated inflammatory diseases (IMIDs) like rheumatoid arthritis (RA) are often treated with immunomodulatory agents (IA). Infection risks appear to be slightly increased in IMID patients using IA¹. However, it remains uncertain whether it is best to continue or temporary interrupt IA in case of an infection. For this decision, it is essential to know patient's perceptions about both strategies. Unfortunately, little is known about the patients' perceptions on this topic.

Objectives: To explore the patients' perspectives on continuation and temporary interruption of IA in case of an infection and assess possible barriers and facilitators.

Methods: Semi-structured interviews were conducted in IMID patients using IA. Patients were recruited from the rheumatology, dermatology and gastroenterology departments of two hospitals in the Netherlands. Purposive sampling was used to select a diverse patient population. Semi-structured interviews were performed until data saturation was reached and analyzed using inductive thematic analysis.

Results: 19 patients with 6 different IMIDs and 17 different IA were interviewed. The majority was female, mean age 51 years and mean disease duration 17 years. Four had experienced a severe infection (requiring hospitalization). 15 patients indicated that they would prefer to continue their IA in case of an infection, however, for most patients this would depend on the infection severity. Several facilitators and barriers were identified (Table 1). Patients mentioned disease flare as a barrier for temporary interruption. Beliefs about susceptibility to infections form barriers and facilitators for both temporary interruption and continuation. Patients also mentioned that they would follow their physician's advice on continuation/temporary interruption.

Table 1. Identified barriers and facilitators

Temporary interruption	
Barriers	Disease flare and its impact Loss of IA effects or increased side effects after restarting Long duration of interruption Belief: IA has no/a positive effect on infection (risk) Belief: not more susceptible for infections Practical barriers Not aware of possibility of interruption Not following physician's advice
Facilitators	More severe and/or longer lasting infection Interactions with medication needed for infection Positive effect of interruption on immune system Short duration of interruption Belief: more susceptible for infections Belief: IA has a negative effect on infection (risk) Concerned about infections Current stable disease Physician's advice Long duration of IA effects Wish to taper/stop IA in general Negative impact of infection on daily activities
Continuation	
Barriers	Belief: more susceptible for infections Belief: IA has a negative effect on infection (risk) Negative previous experiences during infection Loss of IA effects after long use
Facilitators	Interactions with medication needed for infection Belief: not more susceptible for infections Belief: IA has no/a positive effect on infection (risk) Not concerned about infections IA needed to control IMID Mild infection Positive previous experiences with continuation Physician's advice

Conclusion: Interviewed patients seemed to prefer continuation of IA during an infection if possible. The concern of disease flare might form a barrier for temporary interruption, this is in line with a previous study, showing that RA patients fear disease flare after dose reduction ².

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POS1486-HPR DAILY ACTIVITY IMPAIRMENT IS MEDIATED BY BOTH ORAL DRYNESS AND ORAL HEALTH RELATED QUALITY OF LIFE IN PATIENTS WITH PRIMARY SJÖGREN'S SYNDROME

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Background: Both oral functions and oral health-related quality of life (OHRQoL) are poorly affected by low salivary flow rate in patients with primary Sjögren's syndrome (pSS).

Objectives: The aim of the study was to evaluate the effects of oral dryness and OHRQoL on daily life in patients with primary Sjögren's syndrome (pSS).

Methods: In this cross-sectional study, 86 patients with pSS (M/F: 5/81; mean age: 52.4 ± 11.6 years) were included. The data were collected by clinical examination and a questionnaire regarding patient-reported outcome measures (PROMs). Patient filled PROMs regarding Oral Health Impact Profile-14 (OHIP-14) for OHRQoL, Work Productivity and Activity Impairment scale (WPAI) for Daily life and the EULAR Sjögren's Syndrome Patient Reported Index (ESSPRI) for their symptoms. Unstimulated whole saliva flow rates (U-WSFR) of patients were calculated as ml/min. Increases in PROMs and decreases in U-WSFR reflected poor conditions. After preliminary analysis, a mediation analysis was used to evaluate the relations among variables.

Results: WPAI-Daily activity impairment score was higher in patients with low U-WSFR (≤ 0.1 ml/min) than the others (67 ± 29.8 vs 52.5 ± 28.6) ($p=0.042$). Both U-WSFR (0.43 ± 0.57 ml/min) and ESSPRI-Dryness score (6.31 ± 2.71) were correlated with scores of OHIP-14 (25.96 ± 17.13) ($r=-0.38$ $p=0.000$; $r=0.37$ $p=0.000$) and WPAI-Daily activity impairment (57.96 ± 29.71) ($r=-0.36$ $p=0.004$; $r=0.53$ $p=0.000$). Moreover, scores of ESSPRI-Pain (5.16 ± 3.12) and ESSPRI-Fatigue (5.41 ± 2.97) were also related to WPAI-Daily activity impairment score ($r=0.41$ $p=0.001$; $r=0.49$ $p=0.000$, respectively). In the mediation analysis, WPAI-Daily activity impairment score (57.9 ± 29.7) was directly mediated by ESSPRI-Dryness score ($p=0.0010$) and indirectly mediated by OHIP-14 score (25.9 ± 17.1) ($p=0.0357$). After mediation analysis, a bootstrap analysis with 5000 replications was applied to estimate the mediation effect to generate 95% CI. Percentile bootstrap of OHIP-14 score was found to be an effective mediator for Daily activity impairment based on 5000 bootstrap samples.

Conclusion: Both oral dryness and poor OHRQoL in patients with pSS affected daily activity impairment. Therefore, the patients' needs for improving oral health were critical components of treatment plans to improve the daily activity of SjS patients.

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HPR Service developments, innovation and economics in healthcare

POS1487-HPR NEXT-GENERATION ONLINE TELEMEDICINE SYSTEM UTILIZING MIXED REALITY FOR RHEUMATOID ARTHRITIS

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Background: Telemedicine can be performed using a conventional videophone or web conferencing system. Then, joint lesions can only be observed and inferred from two-dimensional images, and it is difficult to perform accurate joint assessments, which is essential for the management of rheumatoid arthritis (RA).

Objectives: To develop the next-generation online telemedicine system utilizing mixed reality for RA.

Methods: We have developed a system that can assess joints accurately in three-dimensions images in real-time, using Azure Kinect DK (depth sensor)/HoloLens 2 (headset), which are mixed reality technologies, and Teams (online interview/chat) provided by Microsoft. Furthermore, by applying artificial intelligence (AI), we plan to implement additionally to this system 1) a function to quickly catch and automatically evaluate the patient's anxiety and changes in facial expressions at the time of examination, 2) a function to record dialogue with the patient in chronological order, 3) a function to support the detection of swollen joints, and 4) function to automatically analyze the questionnaire.

Results: This system remotely connects a rheumatologist in the Nagasaki University Hospital (Nagasaki City, urban area) and a patient with RA and a non-rheumatologist in the Goto Central Hospital (Goto Island, rural area). A three-dimensional hologram of the patient's hand projected in front of a rheumatologist. Using this system, we are able to evaluate joints more accurately than using a conventional videophone or web conferencing system.

Conclusion: It is expected that this system will enable remote medical care specializing in rheumatology, which is standardized at a high level even in areas without rheumatologists such as remote islands and remote areas. This system remotely connects Nagasaki City and Goto Island, but due to the performance of the system, it is not limited to these areas and it is possible to connect rheumatologists to any area that can be connected to the network. It is also effective for the purpose of avoiding the risk of infection during long-distance hospital visits under the epidemic of COVID-19 infection.

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POS1488-HPR CAN A SPECIALIST NURSE LEAD A COMPREHENSIVE OSTEOPOROSIS SERVICE WITH REMOTE SUPERVISION – AN INNOVATIVE CONCEPT

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Background: Specialist services traditionally rely on a consultant to lead a multidisciplinary team and provide patient facing activities. However, demand