

# Can a three weeks program in a rehabilitation center improve symptoms and exercise frequency for rheumatic patients?

## A quality management report

Authors: Jarret G., Orpana A. Skogli Helse- og Rehabiliteringssenter AS, Lillehammer, Norway

### Background:

- Rehabilitation for people with rheumatic disorders (15% of worldwide population) is a long term project (1).
- Rheumatic patients do not exercise as often as recommended (2).
- Intensive multidisciplinary interventions (combining pharmacological treatment, physical therapy with supervised exercises, education) in rehabilitation centers are in some countries an option – of which there is little effect knowledge (3).
- Data from a quality-management report can shed some preliminary light on this subject.

### Purpose:

- **Primary objective:** To observe short and long term effects (at discharge and after 3- and 12 months follow up) of a three weeks intensive multidisciplinary program for rheumatic patients.
- **Secondary objective:** To see if a correlation can be found between symptoms (pain, stiffness), level of self-rated health and training frequency.

### Methods:

#### Participants:

- 746 patients, aged 27 and older (mean 62.0, S.D: 11.1, 84% women), followed a three weeks multidisciplinary program during the period of August 2010 to September 2016 at Skogli Health- and Rehabilitation center, Lillehammer, Norway.
- 3-month follow-up: N=261 and 12-month follow-up: N=135.

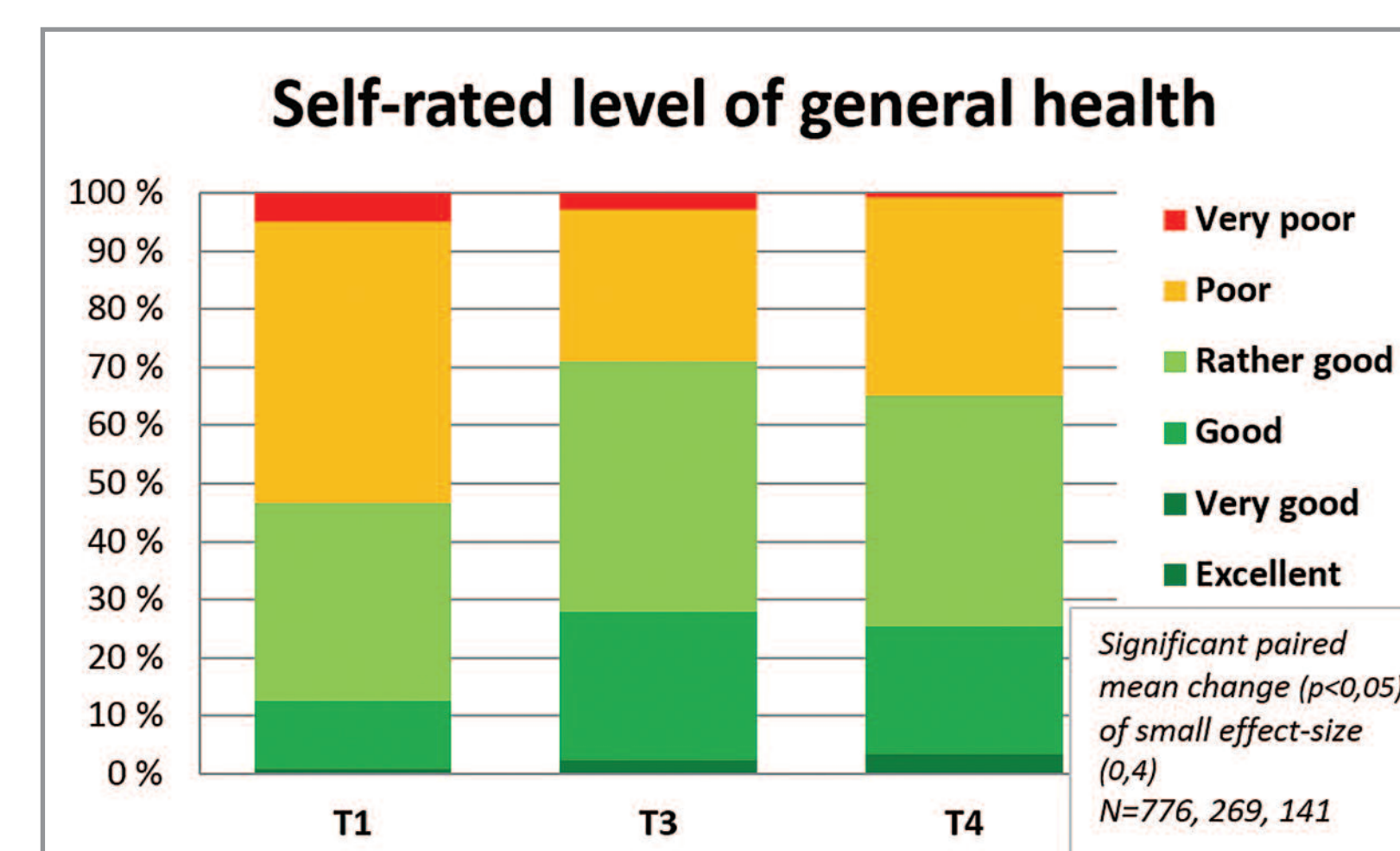
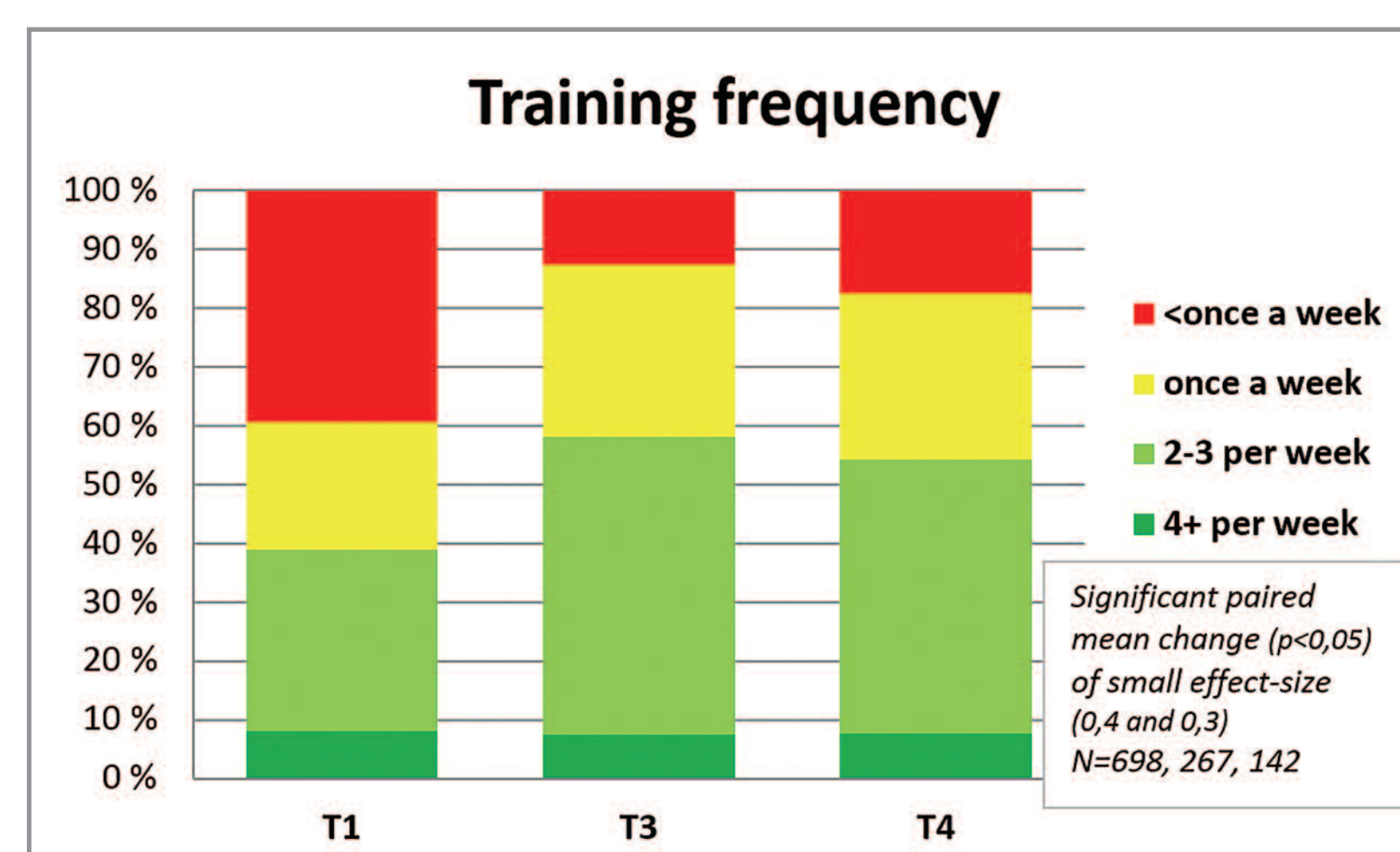
#### Program:

- Training group activities (x30): land or water based (45 min, average), focus on mobility, strength and endurance.
- Training individual program (x10): supervised by physiotherapist (25 min, average).
- Treatments: Active and "hands on" physiotherapy (x9).
- Treatments/contacts with other health professionals (x12): physician, nutritionist, occupational therapist, psychologist...
- Education (x5): Lectures related to rheumatic disorders.

#### Outcomes/Instruments:

- Pain and stiffness: NRS- 11, at baseline (T1), at discharge (T2), and at 3- (T3) and 12 months (T4) after discharge.
- Self-rated level of health: Likert scale (1-6), at T1, T2, T3 and T4.
- Self-reported level of training frequency: Likert scale (1-4), at T1, T3 and T4.
- Self-rated level of Quality Adjusted Life Years (QALY): EQ-5D-5L questionnaire at T1 and T2 – introduced medio-2016 (N=69).

		T1			T2				T3				T4			
		mean (with paired populations)			mean	T1-T2 % change	p value	effect size	mean	T1-T3 % change	p value	effect size	mean	T1-T4 % change	p value	effect size
		T1 (T2)	T1 (T3)	T1 (T4)												
Pain (0-10)		6,1	6,1	5,8	4,7	24 %	<0,001	moderate 0,69	5,8	5 %	<0,05	-	5,8	0 %	-	-
	N:	746	261	135	746				261				135			
Stiffness (0-10)		6,0	6,1	5,7	4,5	25 %	<0,001	moderate 0,73	5,8	5 %	<0,05	-	5,7	0 %	-	-
	N:	744	261	135	744				261				135			
Self-rated health (1-6) Likert scale		4,5	4,4	4,4	3,8	16 %	<0,001	large 0,84	4,0	9 %	<0,001	small 0,45	4,1	8 %	<0,001	small 0,45
	N:	746	259	134	746				259				134			
QALY (0-1)		0,50	0,57		0,62	25 %	<0,001	moderate 0,65	0,64	14 %	<0,05	small 0,40				
	N:	76	17		76				17							



### Results:

- **At discharge (T2):** Significant mean improvement (p<0.0001) on all factors, of moderate/large effect-size.
- **Three months after discharge (T3):** Mean improvement (p<0.05) on all factors except pain, of small/moderate effect size.
- **12 months after discharge (T4):** Mean improvement (p<0.05) on self-rated level of health and training frequency, of small effect size.
- The degree of pain and stiffness at T4 is back to T1-level.
- Positive correlation (p<0.05) between level of training frequency and self-rated level of health (small at T1/T3, medium at T4), but no correlation between level of training frequency and level of pain, or level of stiffness, at any time.
- Significant QALY mean change of 0.115 after just 3 weeks intervention.

### Conclusions:

- People with rheumatic disorders seem to have a very positive short term effects on all aspects measured after a three week multidisciplinary rehabilitation program: Pain, stiffness, self-rated level of health, self-reported level of training frequency, self-rated level of Quality Adjusted Life Years (QALY).

- Those effects gradually decline to a pre-rehab level during the following year; this is particularly true for pain and stiffness.

- At the same time, we observe a more sustained effect on self-rated level of health, especially for those who regularly exercise.

- This suggests that a higher training frequency after a rehabilitation program is associated with a higher sense of health – regardless of symptom levels.

- A significant QALY mean change after just 3 weeks intervention is interesting, especially since governments and insurance companies, who expect more cost effective rehabilitation, put a definite price-tag on those QALY changes.

### Implications:

- There might be a need for intensive multidisciplinary programs for rheumatic patients at intervals of less than a year; to be able to better keep the general health and function gained.

- Another implication for short rehabilitation programs is to increase focus on the necessity for an active lifestyle – including regular exercises – rather than aiming at reducing symptoms, in order to maintain sense of general health.

1 Stoffer MA, Smolen JS, Woolf A, et al. *Ann Rheum Dis* 2015; **74**: 1145-1149.2  
2 Holm I, Tveter AT, Moseng T, Dagfinrud H, et al. *Physiotherapy* 2015; **101** (3): 273-83  
3 Berdal G, Smedslund G, Dagfinrud H, et al. *Arthritis Care & Research* Vol. 67, No.2, Feb. 2015, pp 240-254

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"Presented at the WCPT Congress 2017, Cape Town"



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