



From evidence to practice: improving work participation outcomes by work-related medical rehabilitation in patients with chronic musculoskeletal diseases

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1. Background
2. Methods
3. Results
4. Discussion

From evidence to practice

- Strong evidence in favor of work-related medical rehabilitation
- Implementation possible though not finally completed
- Patients with a high risk of failing return to work
- Similar effects in routine care only if patients and dose are alike
- Reduction of the effects in real care very likely:

Is there any effect at all in favor of work-related medical rehabilitation in routine care?


Methods

- *Sample*: approved rehabilitation due to musculoskeletal disorders
- *Time of measurement*: before rehabilitation, 3 and 10 months after completing the rehabilitation
- *Intervention*: work-related medical rehabilitation (WMR)
- *Controls*: medical rehabilitation (MR)
- *Propensity score matching*: similar controls and unbiased estimation of the treatment effect

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Work-related medical rehabilitation in patients with musculoskeletal disorders: the protocol of a propensity score matched effectiveness study (EVA-WMR, DRKS00009780)

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Abstract

Background: Musculoskeletal disorders are one of the most important causes of work disability. Various rehabilitation services and return-to-work programs have been developed in order to reduce sickness absence and increase sustainable return-to-work. As the effects of conventional medical rehabilitation programs on sickness absence duration were shown to be slight, work-related medical rehabilitation programs have been developed and tested. While such studies proved the efficacy of work-related medical rehabilitation compared with conventional medical rehabilitation in well-conducted randomized controlled trials, its effectiveness under real-life conditions has yet to be proved.

Methods/Design: The cohort study will be performed under real-life conditions with two parallel groups. Participants will receive either a conventional or a work-related medical rehabilitation program. Propensity score matching will be used to identify controls that are comparable to treated work-related medical rehabilitation patients. Over a period of three months, about 18,000 insured patients with permission to undergo a musculoskeletal rehabilitation program will be contacted. Of these, 15,000 will receive a conventional and 3,000 a work-related medical rehabilitation. We expect a participation rate of 40 % at baseline. Patients will be aged 18 to 65 years and have chronic musculoskeletal disorders, usually back pain. The control group will receive a conventional medical rehabilitation program without any explicit focus on work, work ability and return to work in diagnostics and therapy. The intervention group will receive a work-related medical rehabilitation program that in addition to common rehabilitation treatments contains 11 to 25 h of work-related treatment modules. Follow-up data will be assessed three and ten months after patients' discharge from the rehabilitation center. Additionally, department characteristics will be assessed and administrative data records used. The primary outcomes are sick leave duration, stable return to work and subjective work ability. Secondary outcomes cover several dimensions of health, functioning and coping strategies.

Discussion: This study will determine the relative effectiveness of a complex, newly implemented work-related rehabilitation strategy for patients with musculoskeletal disorders.

Trial registration: German Clinical Trials Register (DRKS00009780, February 10, 2016).

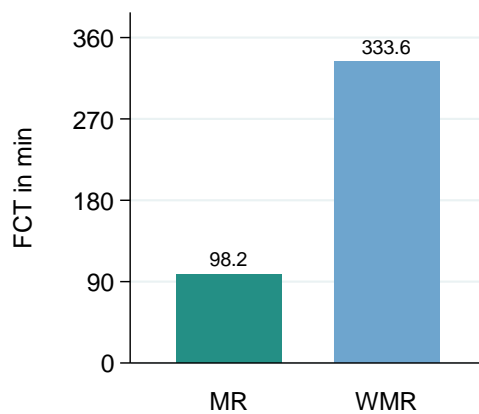
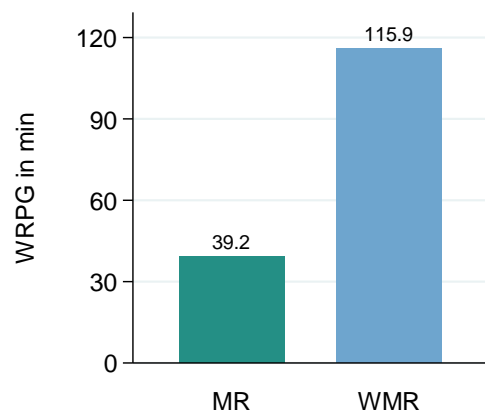
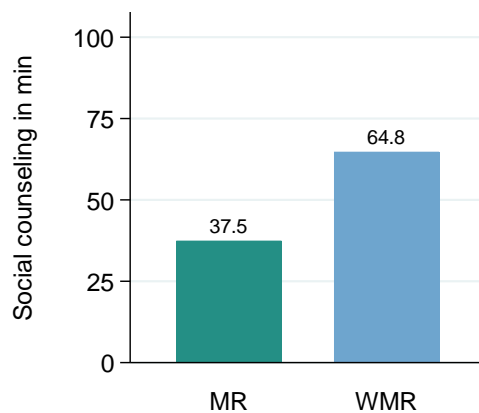
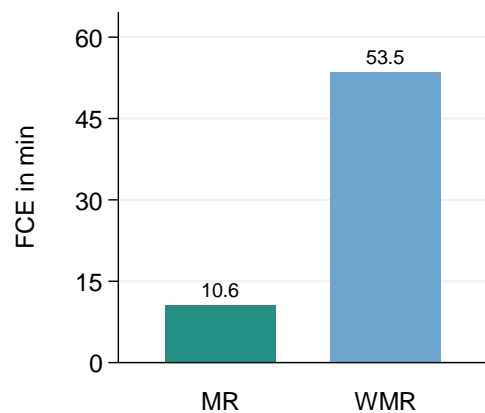
Keywords: Work-related medical rehabilitation, Effectiveness, Work ability, Return to work, Propensity score matching

Sample characteristics

	WMR		MR	
	n	mean (SD) or %	n	mean (SD) or %
Age in years, mean (SD)	641	52.1 (7.8)	641	52.6 (7.6)
Sex: % female	641	76.3	641	74.3
Diagnosis: % M40-M54 (ICD-10)	641	90.6	641	89.9
Comorbidity: % F00-F99 (ICD-10)	641	22.5	641	21.7
SIMBO (0-100), mean (SD)	636	28.4 (25.0)	638	29.3 (25.4)
Work Ability Score (0-10), mean (SD)	634	4.1 (2.4)	634	4.1 (2.5)
Sickness absence in weeks, mean (SD)	628	13.2 (13.9)	629	13.4 (14.5)
Employment: % unemployed	641	7.6	641	6.7

SD = standard deviation; SIMBO = German abbreviation of a risk score to identify need for work-related medical rehabilitation; WMR = work-related medical rehabilitation; MR = medical rehabilitation; Samples were balanced by propensity score matching.

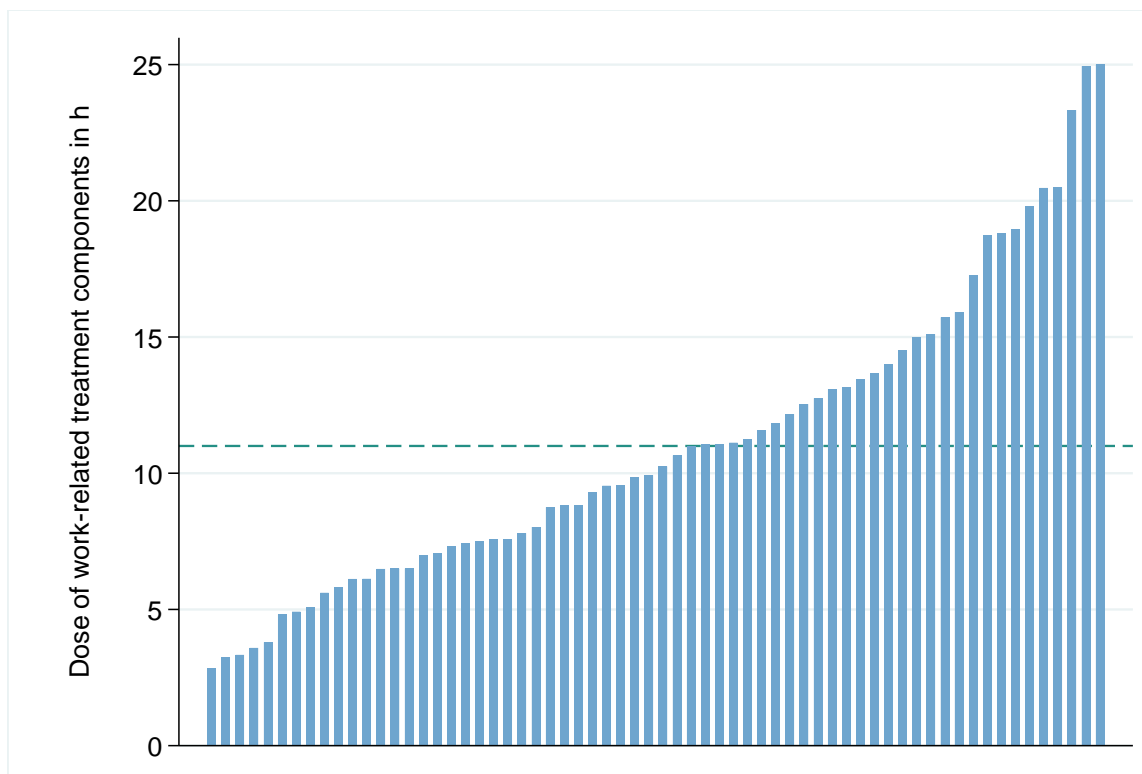
Dose delivered



$n = 1282$; all $p < 0.001$

FCE = functional capacity evaluation;
WRPG = work-related psychological groups;
FCT = functional capacity training

Dose delivered II

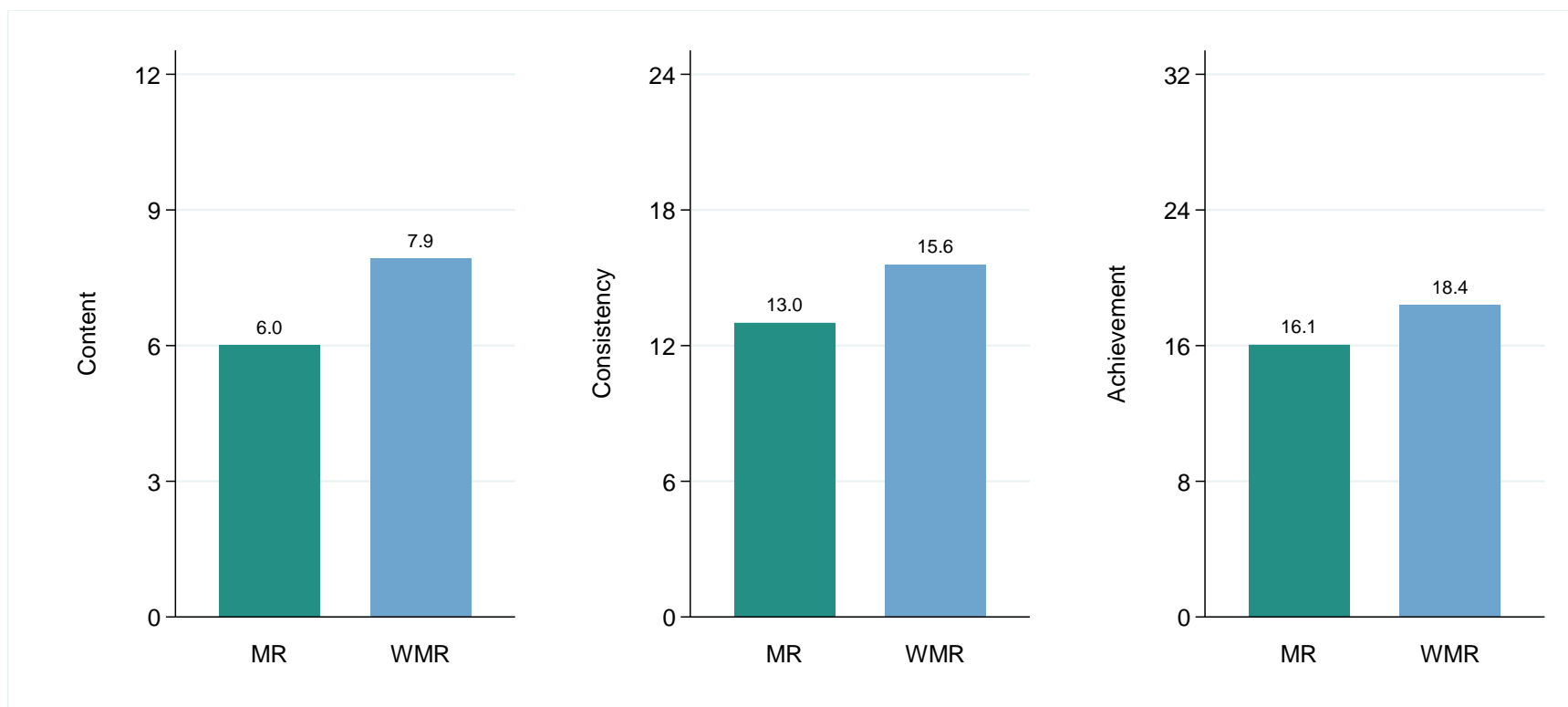


64 departments for work-related medical rehabilitation (n = 641)

Dose received

- Work-related contents (12 items; binary; 0 to 12 points)
 - *Example:* “Did you discuss your return to work in your rehabilitation program?”
- Consistency (6 items; 5-point; 0 to 24 points)
 - *Example:* “The team as a whole dealt very intensively with my health-related problems that were related to my working life.”
- Achievement (8 items; 5-point scaled; 0 to 32 points)
 - *Example:* “I am well prepared for returning to work.”

Dose received II



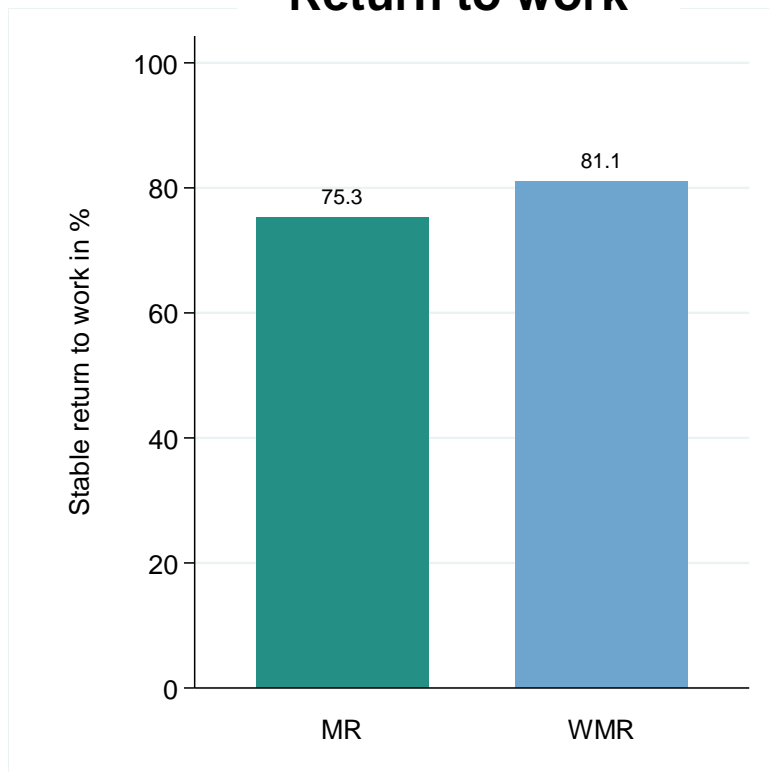
$n = 1274; p < 0.001$

$n = 1236; p < 0.001$

$n = 1187; p < 0.001$

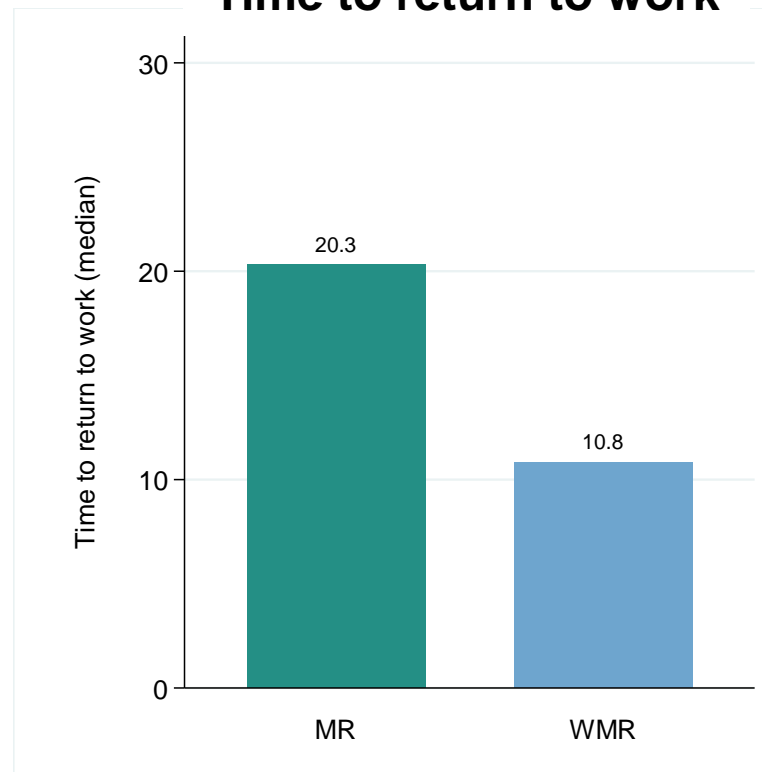
Return to work

Return to work



n = 1260; p = 0.035

Time to return to work



n = 1251; p = 0.033

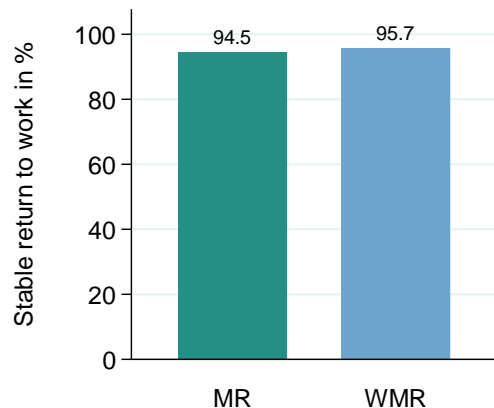
Other outcomes

		WMR	MR			
	n	Average predicted scores (SE)	Average predicted scores (SE)	Difference or Odds Ratio	95% CI	p
Work Ability Score	1250	5.82 (0.12)	5.43 (0.12)	0.38	0.05; 0.72	0.024
Unemployment [#]	1271	0.12 (0.01)	0.18 (0.02)	0.54	0.35; 0.83	0.005
Pain disability	1243	45.38 (0.94)	47.32 (0.90)	-1.94	-4.49; 0.61	0.136
Pain intensity	1266	50.66 (0.78)	52.79 (0.77)	-2.13	-4.27; 0.01	0.051
Depression	1260	1.95 (0.06)	2.12 (0.06)	-0.17	-0.33; -0.01	0.040
Fear-avoidance beliefs	1238	4.18 (0.10)	4.53 (0.10)	-0.35	-0.62; -0.08	0.011
Self-management	1242	5.55 (0.07)	5.34 (0.07)	0.21	0.01; 0.41	0.039

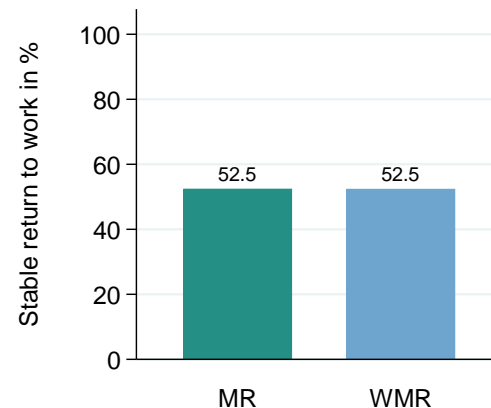
WMR = work-related medical rehabilitation; MR = medical rehabilitation; SE = standard error; CI = confidence interval; [#] Probabilities and odds ratios are reported for binary outcomes, means and unstandardized mean differences are reported otherwise.

Why was the effect of WMR reduced in routine care?

Poor implementation of WMR
(low consistency, < 17 out of 24 points)

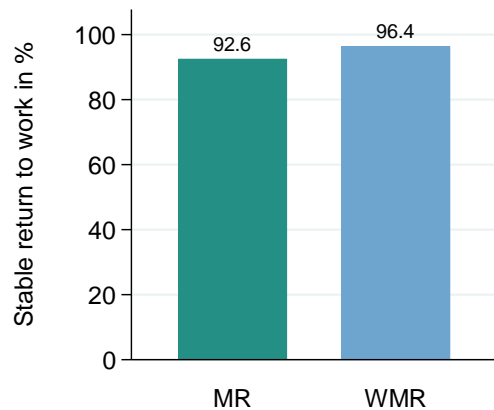


Low SIMBO

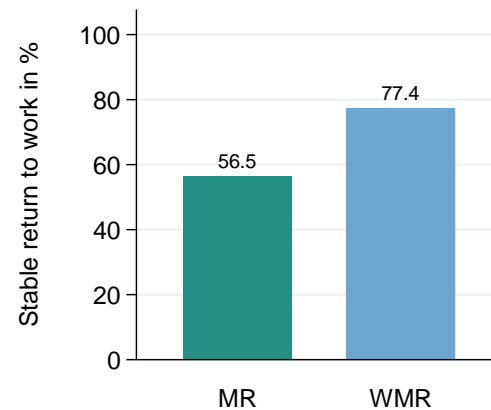


High SIMBO

Good implementation of WMR
(high consistency, at least 17 out of 24 points)



Low SIMBO



High SIMBO

n = 1215

Conclusion

- **WMR improved work participation outcomes also in routine care.**
- Consistent but reduced effects in favor of WMR
- Reduced effect as half of the patients reached had low risks of failing to return to work and high heterogeneity of program implementation
- Similar effects as in randomized controlled trial only if patients reached as intended and good implementation (about 20 points)



Thank you.