

Return-to-work in Japanese Occupational Health Settings: A Systematic Review and Recommendations

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Appendix: Summary of selected studies

RCT, randomized control trials; LBP, low back pain; MSD, musculoskeletal disorder; UC, usual care; I, intervention; C, comparison; CI, clinical intervention; OI, occupational intervention; OP, occupational physician; SW, social worker; CM, care manager; O(P)T, occupational (physical) therapist; GP, general physician; HR, hazard ratio; CI, confidence interval; WLC, wait-list control

OHRQ1-1: Musculoskeletal disorders (five RCTs)						
		Anema 2007 ¹⁶	Verbeek 2002 ¹⁷	Arnetz 2003 ¹⁸	Bültmann 2009 ¹⁹	Loisel 1997 ²⁰
Participants (P)	Country	Netherlands	Netherlands	Sweden	Denmark	Canada
	Disease	Nonspecific LBP	LBP	MSDs	MSDs	LBP
	Duration of sick-leave	2–6 weeks	>10 days	>4 weeks	4–12 weeks	>4 weeks, <3 months
	Age (years)	18–65	39 ± 8.7	42.7 ± 10.1 (I) 42.1 ± 10.4 (UC)	18–65	18–65
	Number of individuals	196 (UC 100, WI 96)	120 (UC 59, I 61)	137 (UC 72, I 65)	113 (UC 47, I 66)	130 (UC 26, CI 31, OI 22, CI + OI 25)
Selection	Selected from outpatients of participating hospitals (four based in Amsterdam)	Selected from the occupational health services of eight different academic and peripheral hospitals	Selected from the two local branches in Skogas and Handen, approximately 20 km south of Stockholm	Invited from four participating municipalities (Vejle, Kolding, Egtved, and Give)	Selected from workplaces with more than 175 employees and located within 30 km of Quebec	
Intervention (I)		Workplace Intervention: Case management by all stakeholders; Workplace assessment and adjustment based on ergonomics, and case management	Early occupational health management according to guidelines by OP trained for LBP management; diagnosis, problem assessment, problem-oriented interventions, and evaluation	Interview with the Hospital CM to comprehend the worker's situation; Meetings with the hospital CM, OT/ergonomist, and the employer to assess and improve the workplace	CTWR; Institutionalized, multidisciplinary work disability screening and development of an RTW plan, including medical, work-related, and psychological assessment	OI: recommend treatment or investigation by OP workplace evaluation and modifications by ergonomist; CI: visit to LBP specialist, and work rehabilitation; Full I: all of the above

	Site of intervention	Workplace	Occupational Health Centre	Hospital & Workplace	Workplace	Workplace	
	Stakeholders *Leader	Worker & Employer/Supervisor					
	Education	OP Ergonomist*, OPT, GP	OP	OPT Hospital CM*, Ergonomist	OP, OPT SW*, Municipal CM, Chiropractor, Psychiatrist, Case worker, GP	OP Representatives of management and unions, Ergonomist, Medical specialist, GP	
	Education	For OP, PT, and ergonomists, training sessions of 1 × 4 and 2 × 2 hours	10 monthly sessions with the guidelines for LBP management	-	-	-	
	Comparison (C)	UC	UC	UC	Conventional case management	UC CI, OI, or CI + OI	
	Outcome (O)	Time until RTW (median, 77 days (I) vs. 104 days (UC)) HR = 1.7, 95% CI 1.2–2.3	Time to RTW (median, 51 days (I) vs. 64 days (UC)) HR = 1.3, 95% CI 0.9–1.9)	The total mean number of sick days (144.9 (I) vs. 197.9 (UC) days OR = 2.5, 95% CI 1.2–5.1)	Cumulative sickness absence hours (median, 476 (I) vs. 892 (UC))	Median time off from regular work, 60 days (CI + OI) vs. 120.5 days (UC) HR = 2.23, 95% CI 1.04–4.80	
OHRQ1-2: Mental health problems (six RCTs)							
		Vlasveld 2013²¹	Brouwers 2006²²	Willert 2011²³	van der Feltz- Cornelis 2010²⁵	van der Klink 2003²⁴	van Oostrom 2010²⁸
Participants (P)	Country Disease Length of sick leave	Netherlands Major depressive disorder 4–12 weeks	Netherlands Mental <3 months	Denmark Mental -	Netherlands Mental >6 weeks	Netherlands Adjustment disorders >2 weeks	Netherlands Depression 2–8 weeks

	Age (years)	41.9 ± 11.4 (I) 43.4 ± 11.4 (UC)	18–60	18–67	24–59 (Average 42)	39 ± 8.0 (I) 42 ± 8.8 (UC)	48.6 ± 7.7(I) 49.2 ± 8.6(UC)
	Number of individuals Selection	126 (I 65, UC 61) From 14,595 workers under a large occupational health service	194 (I 98, UC 96) Recruited by 70 GPs* in the city of Almere	102 (I 51, WLC 51) Selected from persons with symptoms of work-related stress lasting over 4 weeks	60 (I 29, UC 31) Selected from two occupational health services related to various companies	192 (I 109, UC 83) Selected from a postal and telecom services company with about 100,000 workers employees	145 (I 73, UC 72) Selected from the employees of VU University, VU Medical Centre, and Corus (a steel company)
Intervention (I)	Overview	Collaborative care intervention by OP-CM, 6–12 sessions of PT*, self-help manual focused on cognitive restructuring and RTW; Workplace intervention consisted of a workplace assessment and adjustment as well as an RTW plan	Five individual 50-min sessions by SW 1) acknowledge problems 2) problem-solving strategies 3) implementation of strategies	Eight 3-hour sessions led by a psychiatrist and psychologist over a 3-month period. Introduction to CBT*, education on stress, acknowledge problems, problem-solving strategies	Diagnosis, treatment plans and suggestions aimed at RTW by a trained OP, psychiatric consultations (face-to-face or over the phone); Corroboration of OPs and psychiatrists	Four or five consultations with a total length of at least 90 minutes by trained OP. Graded activity; 1) acknowledge problems 2) problem-solving strategies 3) implementation of strategies	Three meetings with the employee, supervisor, OP, and the RTW coordinator (company's SW) (7 hours in total); Identification of problems, discussion of solutions, a plan for implementation, solutions and evaluation
	Site of intervention	Occupational health centre	-	Hospital (Dept of Occupational Medicine)	Workplace	Workplace	Workplace
	Stakeholders Leader*	Worker & Employer/Supervisor OP*	Worker -	- -	Worker & Employer/Supervisor OP*	Worker OP*	Worker & Employer/Supervisor OP

		CM (RTW support staff)	SW*, GP	Psychiatrist*	Psychiatrist	-	RTW coordinator, SW*
	Education	2-day training for OP and CM	3-day training with two follow-up sessions	With a 1-year advanced training course in CBT	Training of OPs and psychiatrists in diagnosis, treatments and RTW education	OP underwent a 3-day training course	Training of RTW coordinators
Comparison (C)		UC	UC	Wait-list control, also received the intervention after 3 months	UC	UC	UC
Outcome (O)		The mean duration until full RTW: 190 days (I) vs. 210 days (UC) No significant difference was found.	The number of days until full work resumption (median, 120 days (I) vs. 119 days (UC). Difference was not significant 95% CI -34.5 – 42.3)	Self-reported days absent from work after 16 weeks (median, 32 (7–66) days (I) vs. 61.5 (43–90) days (WLC) (p = 0.07)	Time until RTW: 122 days (95% CI 77–166) (I) vs. 190 days (95% CI 134–246) (UC) a difference of 68 days (p = 0.078)	Time to full RTW (median): 47 days (95% CI, 41-53) (I) vs. 63 days (95% CI 43–83) (UC) Rate ratio = 1.41 (95% CI 1.04–1.92)	Time until full RTW (median, 96 days (IQR 52–193) (I) vs. 104 days (IQR 52–195) (UC)), HR = 0.99, 95% CI 0.70–1.39. No overall effect.
OHRQ2: Four RCTs							
		Lambeek 2010a³⁰	Tamminga 2013³²	van der Feltz-Cornelis 2010²⁵	Vermeulen 2011³¹		
Participants (P)	Country	Netherlands	Netherlands	Netherlands	Netherlands		
	Disease	LBP	Breast cancer and other female cancer	Mental	MSD		
	Duration of sick-leave	3–24 months	26.5 ± 35.1 days (I) 15.0 ± 53.1 days (UC)	More than 6 weeks	2–8 weeks		
	Age (years)	18–65	18–60	24–59 (Average 42)	44.0 ± 10.7(I), 45.6 ± 9.0 (C)		
	Number of participants	134 (UC68, I66)	133 (UC68, I65)	60 (UC31, I29)	163 (UC84, I79)		

	Selection	Patients with LBP for more than 12 weeks	Patients expected 1-year survival rate is approximately 80%. Eight departments from six hospitals.	Patients recommended by OPs at two occupational health services related to various companies	Temporary agency workers and unemployed workers
Intervention (I)	Overview	Formulate treatment plan, observation of patient's workplace, test patient's functional capacity (x 3 sessions), and individually graded exercise program (26 sessions) by a rehabilitation team with an OP for RTW	Education and support for patients at the hospital (x 4 meetings of 15 minutes each), development of an RTW plan in collaboration with the OP, the worker, and the employer (one face-to-face meeting)	Plans and suggestions aimed at RTW by trained OPs, psychiatric consultations (face-to-face or by telephone); Collaboration of the psychiatrist and the OP	Identifying obstacles for RTW, proposing solutions, and implementation of a consensus-based RTW assistance program between an RTW coordinator, a labour expert, and the sick-listed worker.
	Site of intervention	Workplace	Hospital/Workplace	Workplace	-
	Stakeholders Leader*	Worker & Employer/Supervisor			Worker
		OP*, OT Physiotherapist, medical specialist	OP Treating physician, oncology nurse, medical SW*	OP Psychiatrist	- RTW coordinator*, insurance physician, labour expert, CM
	Education	-	-	Training of OPs and consultant psychiatrists in diagnosis, treatments, and RTW education	Training of RTW coordinators
Comparison (C)	UC	UC	UC	UC	
Outcome (O)	The median time until RTW was 120 days earlier in Intervention group. HR = 1.9, 95% CI 1.2–2.8	Median time until full RTW: 283 days (25–394) (I) vs. 239 days (77–457) (UC) HR = 0.88, 95% CI 0.53–1.5	Time until RTW: 122 days (95% CI, 77–166) (I) vs. 190 days (95% CI 134–246) (UC), a difference of 68 days (p = 0.078)	Median time until RTW: 161 days (IQR 88–365) (I) vs. 299 days (IQR 71–365) (UC) HR (T > 90 days) = 2.24, 95% CI 1.28–3.94.	

OHRQ3: One cohort study	
	Brouwer 2010³⁴
Study Design	Cohort study
Total	3 Stars
Quality	Low
Participants (P)	<p>Country: Netherlands</p> <p>Disease: MSD, other physical disabilities, mental health problems</p> <p>Number of participants: Total 862 workers participated in the sub-group analysis.</p> <p>Age (years): Musculoskeletal health conditions: 342–352 (age, 45.4 ± 9.4 years), Other physical health conditions: 251–265 (age, 47.7 ± 9.5 years), Mental health conditions: 238–245 (age, 44.2 ± 9.4 years)</p> <p>Selection: 1-year follow up analysis by Brouwer (2006)²².</p>
Exposure (E)	Perceived social support was measured with a self-constructed standardized scale, based on responses on a 1-4 point-scale against questions of how much social support individuals considered they received from family, supervisors, co-workers, caregivers, and from the community regarding RTW.
Outcome (O)	Time to return to work in days: mean (SD); Musculoskeletal conditions, 126.85 (85.70); Other physical conditions, 148.31 (85.00); Mental health conditions, 148.78 (82.34).

OHRQ4: One RCT and two cohort studies					
		Viikari-Juntura 2012 ³⁵		Sampere 2012 ³⁶	van Duijn 2008 ³⁷
Study design		RCT	Study design	Cohort study	Cohort study
Participants (P)	Country	Finland	Total	8 Stars	8 Stars
	Disease	Musculoskeletal disorders	Quality	High	High
Intervention (I)	Duration of sick-leave	Not been on sick leave for more than 2 weeks during the preceding month and more than 30 days during the preceding 3 months	Participants (P)	Country	Spain
	Number of participants/	63 (I; n = 31, C; n = 31)		Disease	MSD (47%), mental disorders (18%), others (35%)
	Age (years)	18–60		Duration of sick-leave	More than 15 days
	Selection	With a permanent or long-term contract, working more than 30 hours her week		Number of participants	655
	Overview	Patients unable to perform their regular work were randomly allocated to part- or full-time sick leave; Short-time work was defined as work time reduced by about a half (70%), work time and days reduced (30%), and work tasks modified if necessary		Age (years)	-
	Site of intervention	Workplace	Exposure (E)	Selection	Selected from 210,285 workers from 22,626 companies
	Stakeholders Leader*	Worker & Employer/Supervisor, OP*			
Comparison (C)		Full sick leave	Comparison (C)	Less work	No modified work
Outcome (O)		Time to sustained RTW for more than 4 weeks (median, 12 days (I) vs. 20 days (C), p = 0.10) Age-adjusted HR = 1.60, 95% CI 0.98–2.63. Total number of sickness absence days was approximately 20% lower in the intervention group during the entire follow-up period of 1 year.	Outcome (O)	Time to return to work 1) HR = 0.81, 95% CI 0.67–0.97. 2) HR = 0.78, 95% CI, 0.65-0.93.	Return to work after modified work was associated with less recurrence (OR = 0.35, 95% CI 0.16-0.78)