재활정책

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

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Effect of Work-hardening Program for Injured Workers in Worker's Compensation Insurance

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Background

Work-hardening program have been developed and implemented in order to reduce duration of work disability and facilitate returning to work in worker's compensation insurance since 2013. The efficacy of work-hardening program has rarely been proven using patient medical record in Korea. The analysis of the medical records can confirm not only the effectiveness of work-hardening program but also how the program affects injured workers specifically.

Purpose

We retrospectively collected and analyzed the Functional Capacity Evaluation(FCE) records of patients who participated in work-hardening program at the KCOMWEL Incheon Hospital between January 1 and December 31, 2018 in order to examine the effects of the program on the patient's physical, psychological, and work-related outcomes: body functions, the readiness for return-to-work, and job performance capacity.

Methods

The subjects of this study were selected from the patients who participated work-hardening program and had pre- and post-test of FCE in KCOMWEL Incheon Hospital between January 1 and December 31, 2018. Fifty seven patients with injuries on lower extremities(42.2%), upper extremities(31.5%) and back(17.5%), and complex(5.3%) were included and 8-week or 12-week program was provided. We analyzed using electronic medical record(EMR) data and analyzed changes in body functions, the readiness for return-to-work, and job performance capacity level before and after the program.

Results

The significant improvement was found in basic physical functions, such as agility, balance and flexibility, but not in endurance. The results of the job performance capacity evaluation showed that patients were most likely to use lift and bilateral carry motion. And The significant improvement was found in strength and time required for the task.

The score of the dimension of “Prepared for action-Self-evaluation" in the readiness for Return-to-work (RRTW) scale significantly increased. It means that patients felt more ready to go back to work and acquried more strategies to make work manageable after returning to work.

Conclusion

The effect of work-hardening program for workers with work-related injury was proven partially in physical, psychological, and job performance capacity. The program should be improved to increase patient’s endurance in basic physical functions and consider RRTW stage-specific psychological intervention.

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Table 2. Statistical Analysis of Body Function Assessment

Variables			*M*	*SD*	t	*P*
Dexterity assessment: Side step (number of times)	1st trial	pre	9.55	3.89	−7.712	.000**
		post	12.45	3.90		
	2nd trial	pre	9.84	4.01	−7.559	.000**
		post	12.86	3.73		
	result	pre	9.88	4.02	−7.750	.000**
		post	12.95	3.83		
equilibrium assessment: Closing eyes and standing with one foot (s)	1st trial, left side	pre	4.17	5.10	−1.954	.056
		post	6.80	10.19		
	1st trial, right side	pre	4.48	5.03	−2.533	.014*
		post	8.81	14.25		
	2nd trial, left side	pre	5.54	8.70	−1.197	.237
		post	6.51	9.65		
	2nd trial, right side	pre	6.48	12.28	−2.470	.017*
		post	8.72	13.19		
	result, left side	pre	6.29	8.82	−1.937	.058
		post	8.04	10.85		
	result, right side	pre	7.26	12.25	−3.119	.003**
		post	10.84	15.29		
Flexibility assessment: Sit and reach (cm)	1st trial	pre	2.16	8.81	−6.122	.000**
		post	7.32	8.06		
	2nd trial	pre	2.94	9.27	−6.031	.000**
		post	8.38	8.11		
	result	pre	3.21	9.05	−5.820	.000**
		post	8.41	8.07		
Endurance assessment: Max weight up and down stairs	resting pulse rate	pre	75.19	10.76	−.449	.655
		post	75.77	10.33		
	pulse rate after assessment	pre	111.98	18.03	.095	.924
		post	111.73	16.30		
	Maximum oxygen level(%)	pre	95.89	9.88	−.634	.530
		post	96.27	9.67		

*$p < .05$, **$p < .01$

Table 4. Results of Each Job Performance Assessment

Variables					*M*	*SD*	t	*P*
Simulation Tasks action assessment	lift	from floor to waist	maximum weight (kg)	pre	21.331	8.9067	−6.950	.000**
				post	25.498	8.5219		
			maximum strength	pre	7.69	1.104	1.000	.323
				post	7.49	1.502		
		from floor to shoulder	maximum weight (kg)	pre	15.868	7.0663	−3.640	.002**
				post	19.227	7.5924		
			maximum strength	pre	8.00	.949	1.195	.246
				post	7.67	1.390		
	bilateral carry	flat/ramp	maximum weight (kg)	pre	17.302	8.9220	−8.215	.000**
				post	22.000	9.3477		
			maximum strength	pre	7.80	1.453	2.287	.028*
				post	7.29	1.601		
Positional test	maintain working position	standing horizontal reach	scores MTM(%)	pre	135.04	15.501	−1.964	.061
				post	137.52	16.065		
		upper level reach	scores MTM(%)	pre	113.91	16.667	−2.366	.024*
				post	117.15	12.823		
		stooping reach	scores MTM(%)	pre	118.13	23.129	−2.179	.037*
				post	121.47	21.454		
		crouching	scores MTM(%)	pre	108.95	26.871	−2.557	0.18*
				post	112.14	27.675		
	transfer	walking	time(s)	pre	78.2031	35.93057	−8.215	.000**
				post	61.2242	25.79269		
		climbing stairs	time(s)	pre	39.6238	32.68788	2.287	.028*
				post	31.9929	21.69568		

*$p < .05$, **$p < .01$

Table 5. Statistical Analysis of Readiness for Return-To-Work(RRTW) Scores

Variables			*M*	*SD*	t	*P*
RRTW (Scores)	Precontemplation (PC)	pre	1.6551	.70696	.548	.586
		post	1.5965	.82107		
	Contemplation (C)	pre	3.1170	1.26736	.770	.445
		post	2.9768	1.29735		
	Prepared for Action-Self evaluative (PAS)	pre	2.9353	.88756	−3.090	.003**
		post	3.3628	1.06984		
	Prepared for Action-Behavioral (PAB)	pre	3.4268	.90145	−1.937	.058
		post	3.6839	.96497		

*$p < .05$, **$p < .01$