P 1-129

Functional work capacity and sick leaves in Korean farmers

Sora Baek[1,2†], Gyuhyun Lee[1]

Kangwon National University Hospital, Kangwon National University School of Medicine, Department of Rehabilitation Medicine[1], Kangwon National University Hospital, Center for Farmers' Safety and Health[2]

Objective
Sickness absence is an important indicator of morbidity in occupational medicine. Functional work capacity evaluation is used as standardized tests to assess systematically a person's physical capacity to perform work tasks. We aimed to investigate physical abilities and sick leaves in Korean farmers.

Methods
A total 590 farmers were recruited. Functional work capacity including static strength, dynamic strength, and working speed were measured: static strength of hand grip and trunk flexion/extension; dynamic strength of pushing/pulling, lifting in 3 postures; working speed in 4 different tasks. Sick leaves were assessed by questionnaire phrased "Have you been absent from work during the past 1 year because of back pain?" The occupational role questionnaire (ORQ) was used to assess the impact of back in workers on productivity and satisfaction.

Results
All of functional work capacity items were negatively correlated with ORQ final score. Higher strength and fast working speed were significantly related with lower ORQ score. After adjusting for sex and age, trunk extensor strength were negatively related with sick leaves due to back pain.

Conclusion
In Korean farmer, higher functional work capacity were related with better work productivity and satisfaction. Weak trunk extensor strength was significantly related with sick leave regardless of sex and age.

Table 1. Characteristics of subjects (N=590)

	N(%)
Age group	
<50	76 (12.9)
50 to 59	230 (39)
60 or more	284 (48.1)
Sex	
Male	265 (44.9)
Female	325 (55.1)
Farming types	
Orchards	62 (10.5)
Dry fields	228 (38.6)
Rice	48 (8.1)
Greenhouses	252 (42.7)

Table 2. Functional work capacity evaluations

	Mean ± SD
Static strength	
Hand grip strength, right (Kgf)	27.6 ± 10.1
Hand grip strength, left (Kgf)	26.2 ± 10.1
Hand grip strength, both (Kgf)	26.9 ± 9.9
Hand grip strength, dominant (Kgf)	28.5 ± 10.2
Trunk flexion strength (N)	263.2 ± 88.4
Trunk extension strength (N)	260.9 ± 93.3
Dynamic strength	
Pushing strength (N)	224.3 ± 76.7
Pulling strength (N)	241.9 ± 75.4
Lifting at floor (N)	485.7 ± 205.9
Leg lifting (N)	415.8 ± 228
Back lifting (N)	337.8 ± 121.3
Mobility	
Ankle level task (Sec)	78.8 ± 10.9
Elbow level task (Sec)	80.7 ± 12.5
Elbow level twist task (Sec)	90 ± 14.8
Eye level task (Sec)	82.2 ± 14.7

Table 3. Functional work capacity and Occupational Role Questionnare for Back Pain

	ORQ1	ORQ2	ORQ3	ORQ4	ORQ5	ORQ6	ORQ7	ORQ8	ORQ Productivity Score	ORQ Satisfacton score	ORQ Final score	SAQ1	SAQ2	SAQ3
Static strength														
Hand grip strength, right (Kgf)	-0.11 *	-0.16 **	-0.14 *	-0.19 **	-0.18 **	-0.21 **	-0.21 **	-0.17 **	-0.17 **	-0.21 **	-0.2 **	-0.1 *	-0.1 *	-0.08 *
Hand grip strength, left (Kgf)	-0.09 *	-0.12 *	-0.1 *	-0.17 **	-0.16 **	-0.18 **	-0.18 **	-0.16 **	-0.14 *	-0.19 **	-0.17 **	-0.08 *	-0.1 *	-0.07
Trunk flexion strength (N)	-0.1 *	-0.16 *	-0.14 *	-0.16 **	-0.12 *	-0.18 **	-0.15 *	-0.16 **	-0.16 **	-0.17 **	-0.17 **	-0.13 *	-0.12 *	-0.1 *
Trunk extension strength (N)	-0.16 **	-0.22 **	-0.21 **	-0.21 **	-0.18 **	-0.22 **	-0.23 **	-0.2 **	-0.23 **	-0.23 **	-0.24 **	-0.15 **	-0.03	0
Dynamic strength														
Pushing strength (N)	-0.08	-0.14 *	-0.14 *	-0.16 **	-0.15 *	-0.21 **	-0.17 **	-0.16 **	-0.15 *	-0.19 **	-0.18 **	-0.14 *	-0.06	-0.04
Pulling strength (N)	-0.06	-0.11 *	-0.12 *	-0.11 *	-0.11 *	-0.17 **	-0.14 *	-0.11 *	-0.12 *	-0.15 *	-0.14 *	-0.04	-0.07	-0.08
Lifting at floor (N)	-0.06	-0.11 *	-0.11 *	-0.11 *	-0.06	-0.17 **	-0.1 *	-0.13 *	-0.11 *	-0.13 *	-0.12 *	-0.02	-0.14 *	-0.12 *
Leg lifting (N)	-0.04	-0.09	-0.1 *	-0.09	-0.04	-0.14 *	-0.09	-0.08	-0.09	-0.1 *	-0.1 *	0.01	-0.13 *	-0.11 *
Back lifting (N)	-0.07	-0.12 *	-0.11 *	-0.11 *	-0.08	-0.13 *	-0.06	-0.07	-0.12 *	-0.09	-0.11 *	-0.04	-0.11 *	-0.07
Mobility														
Ankle level task (Sec)	0.15 *	0.14 *	0.08	0.11 *	0.13 *	0.13 *	0.14 *	0.15 *	0.14 *	0.15 *	0.15 *	0.04	0.01	-0.01
Elbow level task (Sec)	0.21 **	0.23 **	0.18 **	0.23 **	0.21 **	0.23 **	0.22 **	0.23 **	0.24 **	0.25 **	0.25 **	0.07	0.09 *	0.06
Elbow level twist task (Sec)	0.16 **	0.17 **	0.12 *	0.17 **	0.16 **	0.17 **	0.15 **	0.18 **	0.17 **	0.18 **	0.18 **	0.05	0.08 *	0.07
Eye level task (Sec)	0.18 **	0.17 **	0.15 *	0.19 **	0.18 **	0.18 **	0.18 **	0.19 **	0.19 **	0.2 **	0.2 **	0.04	0.05	0.04

* *P* value <0.05; ** *P* value <0.001