

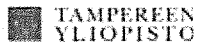
CLAS-HÅKAN NYGÅRD, MINNA SAVINAINEN,
TAPIO KIRSI & KIRSI LUMME-SANDT (eds.)

Age Management during the Life Course

Proceedings of the 4th Symposium on Work Ability



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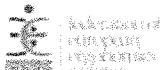


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This book was funded by The Finnish Work Environment Fund

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http://granum.uta.fi

Page design Maaret Kihlakaski
Cover Mikko Reinikka

Technical editor Maria Koponen
Language checking Virginia Mattila

ISBN 978-951-44-8392-9 (print)

Available: <http://tampub.uta.fi>
ISBN 978-951-44-8429-2 (pdf)

Tampereen Yliopistopaino Oy – Juvenes Print, Tampere 2011

Aging, health and lifestyle as predictors of fitness for work: a new perspective for occupational physicians?

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Abstract

We checked fit to work certifications in 2,334 workers (1,951 males and 383 females). Seven percent of male workers and 8.1% of females had limited fitness for work. The higher incidence of limitations were in workers over 55 years old in males and between 45 and 54 years old in females, in workers with a body mass index over 30 and in workers that smoke more than 20 cigarettes a day. We can conclude that aging workers have a higher rate of limitation; obesity and smoking is a prognostic factor for fitness to work limitations.

Key terms: aging, health promotions, fit to work limitations, body mass index.

Introductions

It is mandatory for the Italian legislation that a occupational doctor issue a fitness to work certification for each worker. The physician establishes a medical surveillance program on the basis of the occupational risk which the workers are exposed to. A worker can be considered fit to work, unfit to work or fit to work with some limitations or restrictions in his/her job.

In recent decades the retirement age has risen due to economic decisions of governments. This situation has also raised the average age of the workers exposed to occupational risk.

The international labor organization estimates that the number of economically active persons aged 65 years and above will increase from 83.2 million in the world in 2000 to 136 million by 2020 (1, 2). Elsewhere the proportion of 50 to 60 years old in the workforce will be double compared to workers younger than 25 years in the EU15 (first 15 European countries to join the Union) by the year 2025 (3).

Objectives

The aim of our study is to evaluate the incidence of various factors in the group of workers that have fitness to work certificates with limitations. We would also like to identify which workers' individual characteristics are more likely to result in a fitness to work with limits.

Methods

To achieve our aim we analyzed 2,324 fitness to work certifications in workers exposed mostly to physical risks (noise and vibration), manual lifting, repetitive movements, and working at heights (more than 2 meters). The analysis was made through an occupational medicine management software (Achille®).

Results

The workers are 1,978 males and 379 females, of whom 282 are non-Italians (207 males and 75 females).

The average age was 42.8 ± 11.8 in males and 39.6 ± 6.6 in females and 38.3 ± 10.7 in non-Italians (37.9 ± 11.9 in males, 39.4 ± 6.0 in females).

The workers with restrictions on fitness to work were 7.2% (7.4% Italian workers, 5.0% non-Italians), the percentage of fitness with limitation in females is higher than in males (7.7% vs. 7.0%); especially among Italians (9.2% vs. 7.2%).

Average body mass index (BMI) was 25.4 ± 4.2 kg/m² (25.9 ± 3.9 in males and 23.8 ± 4.6 in females). Non-Italians had a lower BMI than Italian workers both in males (26.1 ± 3.9 vs. 24.9 ± 4.6) and in females (24.1 ± 4.4 vs. 22.9 ± 4.6).

Table 1. presents the distribution of workers in the groups of underweight (BMI under 18.5), normal weight (BMI between 18.5 and 24.9), overweight (BMI between 25 and 29.9) and obese (BMI over 30).

The increase of limitations or restrictions in groups of older workers was evident in all subcategories (male, Italians and non-Italians) except that of females in which the group with higher incidence of limitations was the one with workers between 46 and 55, but there were only 3 workers in the group of over 55 years (Table 2).

Table 1. Distribution of studied population (%) in weight categories and number of people.

	All workers			Italian workers			non-Italian workers		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Underweight	1.5 (29)	4.0 (15)	2.1 (44)	1.3 (23)	3.0 (9)	1.7 (32)	3.0 (6)	8.0 (6)	4.3 (12)
Normal weight	41.5 (813)	64.5 (245)	46.5 (1058)	40.1 (710)	63.7 (194)	45.0 (904)	49.7 (103)	67.6 (51)	54.5 (154)
Overweight	42.1 (839)	21.2 (80)	37.6 (919)	43.0 (762)	22.5 (68)	38.8 (830)	36.9 (77)	16.2 (12)	31.4 (89)
Obese	14.1(283)	10.2 (39)	13.3 (322)	14.8 (262)	10.7 (33)	13.9 (295)	10.3(21)	8.1 (6)	9.7 (27)

The average age of workers with limitations or restrictions was 46.3 ± 10.1 vs. 38.8 ± 9.0 of workers fit to work without limitations or restrictions.

Table 2. Distribution of limitations in various age (% and n).

Percentage of workers with limitations or restrictions	All workers			Italian workers			non-Italian workers		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under25	4.1 (8)	0.0	3.7 (8)	4.0 (7)	0.0	3.6 (7)	5.3 (1)	0.0	4.8 (1)
26-35	3.7 (13)	5.5 (4)	4.0 (17)	3.7 (10)	7.0 (4)	4.3 (14)	3.6 (3)	0.0	3.0 (3)
36-45	5.6 (28)	7.1 (13)	6.2 (41)	5.0 (22)	8.3 (12)	6.1 (34)	9.4 (6)	2.0 (1)	6.1 (7)
46-55	9.5 (65)	23.3 (7)	10.2 (72)	9.6 (64)	29.2 (7)	10.3 (71)	5.3 (1)	0.0	4.0 (1)
Over 55	10.3 (25)	0.0	10.2 (25)	10.5 (23)	0.0	10.4 (23)	9.1 (2)	0.0	8.7 (2)

Regarding BMI, we can see that it is 26.6 ± 5.1 in workers with limitations or restrictions in their fitness to work and 25.3 ± 4.1 in those fit to work without limitations. The differences in BMI between workers with and without limitations were more evident in Italian workers, especially males; however, only in foreign male workers did the group without limitations or restrictions have a higher BMI than those with limitations.

The incidence of limitations was higher in obese workers and lower in those of normal weight. The usual behavior of limitations in all groups examined except for foreigners was a decrease in limitations between underweight and normal weight; then there was an increase in overweight and another one in the group of obese workers. In foreign workers we had a higher prevalence of fitness to work limitations in normal weight subjects and a decrease in the other groups. Table 3 summarizes these data.

The limitations on fitness to work on the basis of smoking habits did not show big differences in the various groups; the only exception was the group of workers that smoke more than 20 cigarettes per day, in which there was the highest percentage of workers with limitations on fitness to work (17.5%).

Alcohol consumption seemed to have no effect on fitness to work limitations.

Workers who habitually take drugs had more limitations (15%) than those who did not take drugs (5.3%).

We grouped the limitations into 9 categories (hand lifting, working at heights, night shifts, use of personal protective equipment, driving means of transportation, postures, working rhythms, high injury jobs and exposure to hand and arm vibrations); afterwards we divided them into age categories and the data obtained are summarized in Table 4.

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Table 3. Distribution of limitations in various BMI groups (% and n).

Percentage of workers with limitations or restrictions	All workers			Italian workers			non-Italian workers		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	Underweight	9.5 (2)	6.7 (1)	8.3 (3)	13.3 (2)	11.1 (1)	12.5 (3)	0.0	0.0
Normal weight	6.2 (35)	6.3 (15)	6.2 (50)	6.3 (29)	7.4 (14)	6.6 (43)	5.9 (6)	2.0 (1)	4.6 (7)
Overweight	9.8 (56)	6.3 (5)	9.4 (61)	10.5 (52)	7.5 (5)	10.1 (57)	5.3 (4)	0.0	4.6 (4)
Obese	12.0 (23)	7.9 (3)	11.4 (26)	12.9 (22)	9.4 (3)	12.4 (25)	4.8 (1)	0.0	3.7 (1)

Table 4. Characteristic of job limitations in the populations (% and n).

	Weight hand lift	Height works	Night works	Use of PPE	Means driving	Postures	Working rhythms	High injury jobs.	Hand and arm vibrations
UNDER 30	2.6 (4)	1.1 (2)	0.0	1.5 (2)	0.7 (1)	0.0	0.4 (1)	0.0	
31-40	2.3 (4)	0.0	0.5 (1)	2.0 (3)	0.5 (1)	0.0	0.3 (1)	0.0	
41-50	4.2 (7)	1.3 (2)	0.8 (1)	0.5 (1)	0.5 (1)	0.5 (1)	0.0	0.0	
OVER 50	5.9 (9)	1.2 (2)	1.2 (2)	1.2 (2)	0.0	0.0	0.8 (1)	1.2 (2)	

Discussion and conclusions

From the analyses of our data we concluded that both in Italian and non-Italian workers the prevalence of limitations is higher in older workers. Agreeing with Chan (4) who reports an increase in working limitations in weight lifting in older groups of workers we also found that workers with limitations or restrictions on fitness to work – in particular for weight hand lifting, working at heights and night work – are older compared to the ones without limitations.

The prevalence of limitations is also higher in workers with a BMI higher than 30 kg/m² and in those who smoke more than 20 cigarettes per day.

Our analysis confirms the importance of company health promotion programs, especially in smoking reduction and increasing knowledge about correct nutrition.

Regarding the increase of limitations among older workers, it seems very important to underline the importance of company occupational physicians in identifying the right job task for aging workers; the literature reports a possible increase in “relative workload” in workers over 55 years old (5).

Considering that in 2025 one third of workers will be over 50 (3), it also seems important to underline the lack of a specific legislation that can help occupational physicians in managing them, as is the case with young workers, especially for job tasks with higher physical demand as described by Costa (6).

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